Suruhanjaya Tenaga
Energy Commission



Laporan Tahunan
Annual Report
2023

Memperkukuhkan Keberterusan Bekalan Tenaga

Strengthening the Energy Security

Be Energy smart



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Sepertimana sebelum ini di mana Laporan Tahunan ST didedikasikan kepada *Corporate House* ST, Laporan Tahunan ST 2023 mengambil tema Memperkukuhkan Keberterusan Bekalan Tenaga, yang merupakan Teras Strategik kedua yang digariskan dalam *Corporate House* ST. Sebagai badan kawal selia sektor tenaga, ST memainkan peranan penting dalam memastikan keberterusan bekalan, termasuk daripada segi kestabilan, daya harap dan kelestarian.

Sehubungan itu, muka hadapan Laporan Tahunan 2023 menggunakan mentol sebagai simbolik usaha yang dilakukan untuk '*keeping the lights on*'. Penggunaan latar langit ibu kota pula menggambarkan keberterusan tenaga yang dinikmati semua sektor, sekali gus meningkatkan ekonomi negara.

Faktor kelestarian alam turut diambil kira dalam memastikan keberterusan bekalan ini, di mana ia digambarkan melalui daun yang berwarna hijau. Elemen peralihan tenaga juga dimuatkan, melalui gambaran peralihan daripada loji jana kuasa arang batu kepada solar, serta anak panah berwarna hijau. Penggunaan gambar-gambar seperti hidro dan kenderaan elektrik pula menunjukkan kebersediaan negara ini untuk meningkatkan penggunaan sumber tenaga boleh baharu serta teknologi baharu yang lebih hijau.

Strengthening the Energy Security

As previously in which the Commission's Annual Report was dedicated to the Commission's Corporate House, the Commission's 2023 Annual Report adopts the theme of Strengthening the Energy Security, which is the second Strategic Pillar outlined in the Commission's Corporate House. As a regulatory body for the energy sector, the Commission plays an important role in ensuring supply security, including in terms of stability, reliability and sustainability.

In this regard, the cover of the 2023 Annual Report uses a light bulb as a symbolic representation of the efforts in 'keeping the lights on'. Meanwhile, the use of a city skyline background illustrated the energy security enjoyed by all sectors, thereby enhancing the nation's economy.

Environmental sustainability factors are taken into account in ensuring this supply security, depicted through green leaf. Energy transition elements are also included, visualised throuh the transition from coal power plant to solar, and green arrows. The use of images such as hydro and electric vehicles demonstrates the nation's readiness to increase the use of renewable energy sources and newer, greener technologies.

LAPORAN TAHUNAN SURUHANJAYA TENAGA 2023 ini dikemukakan kepada Menteri Peralihan Tenaga dan Transformasi Air selaras dengan peruntukan Seksyen 33 Akta Suruhanjaya Tenaga 2001 iaitu Suruhanjaya Tenaga hendaklah mengemukakan satu salinan penyata akaun yang diperakui oleh juruaudit dan satu salinan laporan juruaudit kepada Menteri Peralihan Tenaga dan Transformasi Air untuk dibentangkan di Parlimen berserta dengan laporan aktiviti Suruhanjaya Tenaga bagi tahun kewangan sebelumnya.

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"Sumber: Suruhanjaya Tenaga"

THE ENERGY COMMISSION ANNUAL REPORT 2023 *is submitted to the Minister of Energy Transition and Water Transformation in accordance with Section 33 of the Energy Commission Act 2001 which stipulates that the Energy Commission must present a copy of the audited account statement and a copy of the auditor's report to the Minister of Energy Transition and Water Transformation to be tabled in Parliament along with a copy of the Energy Commission's activity report for the previous financial year.*

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Chairman's Message



MOHAMMED RASHDAN MOHD YUSOF

Pengerusi Suruhanjaya Tenaga
Chairman of the Energy Commission

ASSALAMUALAIKUM W.B.T. DAN SALAM SEJAHTERA

Sektor tenaga negara sedang berada dalam fasa transformasi yang signifikan, didorong oleh dasar untuk menyeimbangkan pembangunan dan kestabilan ekonomi, keberterusan bekalan tenaga, kemampuan pengguna dan kelestarian alam. Sebagai badan kawal selia sektor tenaga negara, Suruhanjaya Tenaga (ST) sentiasa memastikan perubahan-perubahan yang dilaksanakan bersifat inklusif, yang memenuhi keperluan semua peringkat pengguna di samping mengimbangi keperluan pembekal tenaga.

The nation's energy sector is undergoing a significant transformation phase, driven by policies aimed at balancing economic development, energy supply continuity, consumer affordability and environmental sustainability. As the regulatory body overseeing the national energy sector, the Energy Commission (the Commission) ensures that these changes are inclusive, meeting the needs of all consumer levels while balancing the requirements of energy providers.

Menyedari kepentingan ini, saya dengan penuh hormat menerima kepercayaan Kerajaan untuk menggalas tanggungjawab menerajui ST menerusi pelantikan saya sebagai Pengerusi ST pada 15 Februari 2023 yang lalu. Sehubungan itu, saya dengan sukacitanya membentangkan Laporan Tahunan ST bagi tahun 2023, agar keberkesanan prestasi dan inisiatif di bawah tanggungjawab ST boleh dinilai dan ditambah baik demi memperkukuhkan lagi industri tenaga negara pada masa akan datang.

Sepanjang 2023, sektor tenaga global semakin rancak mendukung aspirasi peralihan tenaga bagi mencapai komitmen dan sasaran pengurangan pelepasan gas rumah hijau (GHG) masing-masing, lebih-lebih lagi dengan pemuktamadan *Global Stocktake* di Persidangan Negara Ahli ke-28 (COP28), iaitu mekanisme yang digariskan di bawah Perjanjian Paris 2015 untuk menilai kemajuan kolektif Kerajaan dalam mencapai sasaran jangka panjang mereka di bawah perjanjian berkenaan.

Kapasiti terpasang tenaga boleh baharu (TBB) global pula mencapai kira-kira 3.9 terawatt pada 2023, meningkat hampir 14 peratus dari tahun sebelumnya. Ini menunjukkan negara-negara di seluruh dunia semakin giat meningkatkan penggunaan TBB bagi menggantikan bahan api fosil, yang merupakan antara penyumbang terbesar pelepasan GHG. Di Australia Selatan misalnya, 70% daripada tenaga yang dijana adalah daripada sumber TBB, dan angka ini diunjurkan untuk mencapai 85% menjelang 2025/2026.

Bagi Malaysia sendiri, Pelan Hala Tuju Peralihan Tenaga Negara (NETR) yang dilancarkan tahun ini menunjukkan iltizam negara dalam mendukung agenda peralihan tenaga, seiring dengan komitmen Malaysia untuk mengurangkan intensiti pelepasan GHG sebanyak 45% berdasarkan Keluaran Dalam Negara Kasar (KDNK) pada 2030, serta mencapai pelepasan GHG bersih sifar seawal 2050. Dokumen ini merupakan rujukan utama yang menggariskan inisiatif dan usaha ke arah peralihan tenaga, dengan peranan dan penglibatan oleh semua pihak.

NETR akan membuka peluang pelaburan bernilai antara RM435 bilion hingga RM1.85 trilion menjelang 2050, dengan fasa pertama sahaja dianggarkan mewujudkan kira-kira 23,000 pekerjaan berimpak tinggi. Pelengkap kepada Dasar Tenaga Negara, NETR menggariskan enam (6) pemacu peralihan tenaga utama iaitu kecekapan tenaga, TBB, hidrogen, biotenaga, mobiliti hijau, dan pemerangkapan, pengangkutan dan penyimpanan karbon (CCUS).

Recognising this pivotal role, I humbly accepted the Government's trust to lead the Commission through my appointment as Chairman on 15 February 2023. In this regard, I am pleased to present the Commission's Annual Report for the year 2023, so that the effectiveness of performance and initiatives under the Commission's responsibility can be assessed and enhanced to further strengthen the national energy industry in the future.

Throughout 2023, the global energy sector has intensified its support for energy transition aspirations to achieve their respective greenhouse gas (GHG) emission reduction commitments and targets, especially with the finalisation of the Global Stocktake at the 28th Conference of the Parties (COP28), which is a mechanism outlined under the 2015 Paris Agreement to assess the collective progress of Governments in achieving their long-term goals under the agreement.

Global installed renewable energy (RE) capacity reached approximately 3.9 terawatts in 2023, a nearly 14% increase from the previous year. This indicates that countries worldwide are increasingly enhancing the adoption of RE to replace fossil fuels, which are among the largest contributors to GHG emissions. For instance, in South Australia, 70% of the generated energy comes from RE sources, and this figure is projected to reach 85% by 2025/2026.

In Malaysia, the National Energy Transition Roadmap (NETR), launched this year, underscores the country's commitment in supporting the energy transition agenda. This aligns with Malaysia's commitment to reduce GHG emissions intensity by 45% based on Gross Domestic Product (GDP) by 2030, and achieve net-zero GHG emissions as early as 2050. This document serves as a primary reference outlining initiatives and efforts towards energy transition, with roles and involvement from all parties.

***NETR is set to unlock investment opportunities valued between RM435 billion to RM1.85 trillion by 2050, with the first phase alone estimated to create approximately 23,000 high-impact jobs**. Complementing the National Energy Policy, NETR outlines six (6) key drivers for energy transition: energy efficiency, RE, hydrogen, bioenergy, green mobility, and carbon capture, utilisation and storage (CCUS).*

Tidak dinafikan, perjalanan ke arah peralihan tenaga agak mencabar memandangkan landskap tenaga negara pada masa ini masih didominasi oleh bahan api fosil, didorong oleh faktor ketersediaan dan kemampuan. **Pada 2023, 40% daripada campuran kapasiti di Semenanjung terdiri daripada arang batu, diikuti gas sebanyak 37% dan TBB dengan 23%.** Sumbangan TBB dalam campuran kapasiti terpasang ini merupakan peningkatan berbanding 18% pada 2022.

Landskap ini bagaimanapun diunjurkan untuk berubah bagi tempoh 27 tahun akan datang. **Pengurangan ketara dijangka berlaku bagi penjanaan berasaskan bahan api fosil, daripada 77% pada 2023 kepada 13% pada 2050. Pengurangan terbesar adalah bagi arang batu, iaitu daripada 40% pada 2023 kepada 36% pada 2025 dan 0% menjelang 2050.**

Dari segi campuran tenaga pula, **arang batu mendahului penjanaan bahan api yang lain iaitu pada paras 55%, berbanding gas 35% dan TBB 10% untuk 2023,** disebabkan unjuran harganya yang lebih rendah. Bagaimanapun, komposisi ini dijangka berubah dengan penurunan komposisi arang batu untuk tempoh 20 tahun seterusnya, didorong oleh perancangan penamatan awal loji jana kuasa arang batu menjelang 2040. **Pada 2050, TBB akan mendominasi campuran tenaga pada 52%, diikuti dengan gas pada 33%, dan sambung tara pada 15%.**

Dominasi TBB dalam penjanaan tenaga negara terus diperkukuhkan melalui Program Bidaan Loji Solar Berskala Besar (LSS), yang dilaksanakan sejak 2017. **Sehingga 2023, sebanyak 2,445.37 MW projek LSS telah dianugerahkan di Semenanjung dan Sabah, dengan 1,822.48 MW telah mula beroperasi.** Projek ini dilaksanakan secara berperingkat bagi mengawal kemasukan sumber penjanaan elektrik serta implikasi kepada tarif, agar tidak membebankan pengguna.

Pertumbuhan TBB dirancakkan lagi dengan penambahan kuota bagi program Pemeteran Tenaga Bersih (NEM) 3.0, yang juga merupakan salah satu inisiatif sokongan ke atas polisi Kerajaan untuk mencapai 70% kapasiti campuran TBB menjelang 2050. Tambahan kuota sebanyak 200 MW untuk program NEM NOVA dibuat bagi menggalakkan lagi pemasangan solar di bumbung premis bangunan oleh pengguna kategori komersial dan industri, manakala tambahan kuota sebanyak 50 MW untuk program NEM Rakyat bagi membolehkan lebih ramai pengguna domestik memasang sistem solar di premis kediaman. **Pada 2023, sejumlah 1,466.49 MW kuota NEM telah dimohon dengan 969.42 MW telah pun beroperasi.**

Undeniably, the journey towards energy transition poses significant challenges, given that the current energy landscape in the country is still dominated by fossil fuels, driven by factors of availability and affordability. ***In 2023, coal accounted for 40% of the Peninsula's capacity mix, followed by gas at 37% and RE at 23%.*** *The contribution of RE to this installed capacity mix showed an 18% increase compared to 2022.*

However, this landscape is projected to change over the next 27 years. ***A substantial reduction is expected in fossil fuel-based generation, from 77% in 2023 to 13% in 2050. The largest reduction will be for coal, decreasing from 40% in 2023 to 36% in 2025 and 0% by 2050.***

In terms of energy mix, ***coal currently leads other fossil fuel generation at 55% for 2023, compared to gas at 35% and RE at 10%,*** *due to its lower cost projections. Nevertheless, this composition is expected to shift over the next 20 years with a decline in coal composition, driven by plans to phase out coal-fired power plants by 2040.* ***By 2050, RE is projected to dominate the energy mix at 52%, followed by gas at 33%, and interconnections at 15%.***

The dominance of RE in the country's power generation is further fortified through the Large-Scale Solar (LSS) Bidding Programme, which has been implemented since 2017. ***As of 2023, a total of 2,445.37 MW of LSS projects have been awarded in the Peninsula and Sabah, with 1,822.48 MW already operational.*** *These projects are implemented in phases to control the entry of electric generation sources and their tariff implications, ensuring no undue burden on consumers.*

The growth of RE is accelerated by the increased quota under the Net Energy Metering (NEM) 3.0 programme, which is one of the support initiatives for the Government's policy to achieve 70% RE capacity by 2050. An additional quota of 200 MW for the NEM NOVA programme was made to encourage more installations of solar panels by commercial and industrial consumers, while an additional 50 MW for the NEM Rakyat programme allows more domestic users to install solar systems on residential premises. ***As of 2023, a total of 1,466.49 MW of NEM quota has been applied for, with 969.42 MW already operational.***

Kepentingan sumber TBB dalam penjanaan tenaga juga berkait rapat dengan komitmen Alam Sekitar, Sosial dan Tadbir Urus (ESG) pengguna-pengguna korporat dalam negara. Atas faktor berkenaan, Kerajaan memutuskan untuk membuka kuota tambahan sebanyak 200 MW bagi Program Tenaga Hijau Korporat (CGPP), bagi membolehkan lebih banyak syarikat melanggan bekalan elektrik hijau bagi memenuhi komitmen ESG masing-masing. Malah, pemaju TBB daripada sumber bukan solar turut dibenarkan menyertai program ini.

CGPP berjaya menarik minat peserta daripada kalangan kumpulan sasaran seperti penjana tenaga solar dan pengguna korporat apabila **kesemua kuota CGPP sebanyak 800 MW habis dilanggan sebelum berakhirnya 2023.** Daripada 117 permohonan, ST telah menyenaraikan 32 pemohon yang berjaya memperoleh kuota CGPP, di mana senarai lengkap permohonan yang berjaya boleh didapati di laman sesawang ST di www.st.gov.my.

Antara projek mega yang menyumbang ke arah peralihan tenaga adalah Pulau Tenaga Hijau, iaitu projek rintis bagi menghasilkan pembekalan tenaga yang mampan di pulau-pulau di negara ini. Sehingga 2023, projek ini berjalan lancar seperti yang dijadualkan, di mana **pembinaan struktur *Building-Integrated Photovoltaics* (BIPV) yang pertama telah disiapkan, membolehkan potensi maksimum sebanyak 120 kWac tenaga elektrik dapat disuntik ke dalam grid Pulau Perhentian kelak.** Selain itu, sebanyak 321 unit meter pintar telah dipasang di Pulau Perhentian dan 526 unit meter lagi dipasang di Pulau Redang. Selain itu, **lampu jalan *High Pressure Sodium Vapour* (HPSV) sedia ada ditukar sepenuhnya kepada Diod Pancaran Cahaya (LED) yang lebih cekap tenaga di kedua-dua pulau, yang menghasilkan penjimatan sebanyak 45,734 kWj setiap tahun.**

Satu lagi pencapaian yang merupakan titik tolak yang membantu merealisasi pembangunan sektor tenaga yang mampan ialah **kelulusan Rang Undang-Undang (RUU) Kecekapan dan Konservasi Tenaga 2023 (EECA)** selepas bacaan kali ketiga di Dewan Rakyat. Menyokong aspirasi negara untuk mencapai pelepasan GHG bersih sifar seawal 2050, RUU ini akan membolehkan Kerajaan menguruskan permintaan tenaga, mempromosikan kecekapan tenaga dan amalan penggunaan tenaga secara lestari dengan memberi tumpuan kepada pelaksanaan inisiatif kecekapan tenaga di sektor industri, komersial dan domestik.

The importance of RE sources in power generation is closely related to the Environmental, Social, and Governance (ESG) commitments of corporate consumers within the country. In light of this, the Government has decided to open an additional quota of 200 MW for the Corporate Green Power Programme (CGPP), allowing more companies to subscribe to green electricity supply to meet their respective ESG commitments. Moreover, RE developers from non-solar sources are also permitted to participate in this programme.

*CGPP successfully attracted participants among target groups such as solar energy generators and corporate consumers, with **all 800 MW of CGPP quotas fully subscribed before the end of 2023.** Out of 117 applications, the Commission has shortlisted 32 applicants who successfully secured CGPP quotas, with the full list of successful applications available on the Commission's website at www.st.gov.my.*

*Among the mega projects contributing to the energy transition is the Green Energy Island, a pioneer project aimed at sustainable energy supply on islands in the country. As of 2023, the project is progressing as scheduled, with **the completion of the first Building-Integrated Photovoltaics (BIPV) structure, enabling a maximum potential of 120 kWac of electrical energy to be injected into the Perhentian Island grid in the future.** Additionally, 321 smart meters have been installed on Perhentian Island and 526 meters on Redang Island. Furthermore, **existing High Pressure Sodium Vapour (HPSV) street lights have been fully replaced with more energy-efficient Light Emitting Diode (LED) lights on both islands, resulting in annual savings of 45,734 kWh.***

*Another achievement that marks a turning point in realising sustainable energy sector development is **the approval of the Energy Efficiency and Conservation Act (EECA) 2023 Bill** after its third reading in the House of Representatives. Supporting the country's aspiration to achieve net-zero GHG emissions by 2050, this Bill will enable the Government to manage energy demand, promote energy efficiency and sustainable energy usage by focusing on implementing energy efficiency initiatives in the industrial, commercial and domestic sectors.*



RUU Kecekapan dan Konservasi Tenaga dijangka akan memberi impak yang besar terhadap kedua-dua pengurusan permintaan tenaga di Malaysia dan pengurangan kos alam sekitar. Dengan adanya RUU ini, **Malaysia diunjurkan memperoleh 2,017 juta gigajoule penjimatan tenaga, bernilai RM97.10 bilion menjelang tahun 2050.**

Pada 2023 juga Malaysia telah diiktiraf sebagai negara terbaik di Asia Tenggara dalam Indeks Peralihan Tenaga oleh Forum Ekonomi Dunia (WEF). Ini secara tidak langsung membuktikan pelbagai usaha giat yang dijalankan dalam sektor tenaga di negara ini, termasuk oleh ST sebagai badan kawal selia sektor tenaga negara berada di landasan yang betul dalam mencapai komitmen peralihan tenaga ini.

Sehubungan itu, saya juga ingin mengambil kesempatan ini untuk menghargai sokongan penuh Kerajaan terhadap inisiatif, tugas dan tanggungjawab yang dijalankan oleh ST selama ini. Setinggi-tinggi penghargaan juga diucapkan kepada YB Nik Nazmi Nik Ahmad, Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim atas kerjasama dan jasa baik beliau dan seluruh Kementerian terhadap usaha-usaha ST dan sektor tenaga secara amnya.

Saya juga ingin mengalu-alukan pelantikan YAB Timbalan

The Energy Efficiency and Conservation Bill is expected to have a significant impact on both energy demand management in Malaysia and environmental cost reduction. With this Bill in place, ***Malaysia is projected to achieve energy savings of 2,017 million gigajoules, valued at RM97.10 billion by 2050.***

In 2023, Malaysia was also recognised as the leading country in Southeast Asia in the Energy Transition Index by the World Economic Forum (WEF). This indirectly demonstrates the vigorous efforts undertaken in the energy sector in the country, including by the Commission as the national energy regulator is on track to meet its energy transition commitments.

Therefore, I would also like to take this opportunity to express my gratitude for the Government's full support towards the initiatives, duties and responsibilities carried out by the Commission thus far. My highest appreciation is also extended to YB Nik Nazmi Nik Ahmad, Minister of Natural Resources, Environment and Climate Change, for his and the entire Ministry cooperation and good deeds towards the Commission's efforts and the energy sector as a whole.

I also welcome the appointment of YAB Deputy Prime Minister Dato' Sri Fadillah Yusof, who has been appointed as the Minister of Energy Transition and Water Transformation. I am

Perdana Menteri Dato' Sri Fadillah Yusof, yang dilantik sebagai Menteri Peralihan Tenaga dan Transformasi Air. Saya yakin di bawah kepimpinan beliau, usaha-usaha ke arah peralihan tenaga dapat dilaksanakan dengan lebih teratur dan inklusif, sekali gus dapat meningkatkan kualiti sektor tenaga negara.

Turut dialu-alukan ialah Anggota Suruhanjaya yang baharu iaitu Dr. Afiza Idris, Datuk Darryl Goon Siew Chye, YM Raja Azura Raja Mahayuddin, Tuan Saipolyazan Mat Yusop dan Tuan Delakan Ratha Krisnak. Terima kasih atas ilmu pengetahuan, bakti dan perkongsian pengalaman masing-masing bagi memajukan ST dan industri tenaga secara amnya.

Tidak ketinggalan, buah fikiran dan usaha di kalangan kepimpinan dan warga kerja ST sendiri, yang sentiasa bertungkus-lumus memajukan industri tenaga dari semasa ke semasa wajar diberi penghargaan yang tinggi. Justeru, saya ingin mengucapkan terima kasih kepada semua warga ST, terutama YBhg. Dato' Ir. Ts. Abdul Razib Dawood yang menerajui ST atas komitmen dan dedikasi bagi memastikan ST sentiasa berada di hadapan dalam agenda peralihan tenaga, di samping mencari titik tengah dalam mengimbangi kepentingan pengguna dan pembekal tenaga.

Akhir kata, usaha peralihan tenaga ini juga memerlukan penglibatan dan sokongan semua pihak, baik daripada pihak pengguna, pemain industri mahupun pembekal tenaga. Semoga dengan komitmen dan iltizam kita, matlamat ini dapat dicapai pada masa yang disasarkan, atau mungkin lebih awal lagi.

confident that under his leadership, efforts towards energy transition can be implemented in a more orderly and inclusive manner, thereby enhancing the quality of the national energy sector.

Also welcomed are the new Commission Members, namely Dr. Afiza Idris, Datuk Darryl Goon Siew Chye, YM Raja Azura Raja Mahayuddin, Tuan Saipolyazan Mat Yusop and Tuan Delakan Ratha Krisnak. Thank you for your knowledge, dedication and shared experiences, each contributing to the advancement of the Commission and the energy industry in general.

Not to be forgotten, the ideas and efforts of the Commission's leadership and staff, who tirelessly work to advance the energy industry over time, deserve high appreciation. Thus, I would like to express gratitude to all the Commission's members, especially YBhg. Dato' Ir. Ts. Abdul Razib Dawood who leads the Commission with commitment and dedication to ensure the Commission remains at the forefront of the energy transition agenda, balancing the interests of consumers and energy suppliers.

Last but not least, the energy transition effort requires the involvement and support of all parties, including consumers, industry players and energy suppliers. With our commitment and determination, may we achieve this goal within the targeted timeframe, or perhaps even earlier.

MOHAMMED RASHDAN MOHD YUSOF
Pengerusi Suruhanjaya Tenaga
Chairman of the Energy Commission

Laporan Ketua Pegawai Eksekutif

Chief Executive Officer's Report



DATO' IR. TS.
ABDUL RAZIB DAWOOD

Ketua Pegawai Eksekutif Suruhanjaya Tenaga
Chief Executive Officer of the Energy Commission

ASSALAMUALAIKUM W.B.T. DAN SALAM SEJAHTERA

Terlebih dahulu, bagi pihak pengurusan dan warga kerja Suruhanjaya Tenaga (ST), saya ingin mengalu-alukan dan mengucapkan tahniah kepada YBrs. Tuan Mohammed Rashdan Mohd Yusof, atas pelantikan sebagai Pengerusi ST berkuat kuasa pada 15 Februari 2023. Semoga kepimpinan YBrs. Tuan Mohammed Rashdan dapat membawa ST dan sektor tenaga negara lebih jauh ke hadapan, terutama dalam agenda peralihan tenaga.

First and foremost, on behalf of the management and staff of the Energy Commission (the Commission), I extend a warm welcome and congratulations to YBrs. Tuan Mohammed Rashdan Mohd Yusof on his appointment as the Commission's Chairman, effective 15 February 2023. May YBrs. Tuan Mohammed Rashdan's leadership propel the Commission and the national energy sector further ahead, especially in the energy transition agenda.

Walaupun tekanan daripada krisis tenaga global telah berkurangan berbanding tahun sebelumnya, 2023 masih membawa cabarannya yang tersendiri untuk sektor tenaga. Ini termasuk pertempuran berterusan di Ukraine, ketegangan konflik geopolitik di Timur Tengah, serta tekanan bagi mempercepatkan peralihan tenaga termasuk melalui teknologi-teknologi baharu yang mampan.

Bagi Malaysia sendiri, pemulihan ekonomi dalam negara pasca pandemik secara tidak langsung merangsang kembali perkembangan sektor tenaga. Aktiviti ekonomi yang semakin rancak dan keadaan pasaran pekerja yang terus pulih membolehkan Malaysia mencapai kadar pertumbuhan Keluaran Dalam Negara Kasar (KDNK) sebanyak 3.7% pada 2023, meskipun dalam persekitaran kelembapan ekonomi global.

Peningkatan aktiviti sosioekonomi termasuk pemulihan sektor industri yang semakin berkembang ini merupakan antara faktor **peningkatan jumlah penjanaan elektrik di Semenanjung dan Sabah, masing-masing sebanyak 2.29% dan 5.4% berbanding 2022.** Permintaan puncak sistem grid di Semenanjung pula mencatat rekod tertinggi sebanyak 19,716 MW, peningkatan 2.8% berbanding tahun sebelumnya, manakala Sabah merekodkan peningkatan permintaan puncak sebanyak 5.6% pada kadar 1,090.7 MW.

Sepertimana yang telah dimandatkan, ST terus menggalas tanggungjawab mengemudi sektor tenaga negara menerusi lima (5) teras strategik iaitu Mengutamakan Keselamatan dan Penguatkuasaan, Memperkukuhkan Keberterusan Bekalan Tenaga, Memastikan Daya Harap Pembekalan Tenaga dan Kualiti Perkhidmatan Industri, Meningkatkan Kecekapan Ekonomi dan Kemampuan serta Mempromosikan Kemampanan Tenaga.

Mengutamakan Keselamatan dan Penguatkuasaan

Walaupun topik peralihan tenaga menjadi tumpuan dan diberi penekanan khusus, aspek keselamatan dan penguatkuasaan terus diberi keutamaan dalam memastikan kepentingan pengguna terus dilindungi. Peranan kritikal ini dijalankan bagi pematuhan piawaian keselamatan dan penguatkuasaan Akta dan Peraturan, sekali gus dapat menjamin pembekalan yang selamat dan berkesan.

Selepas menunjukkan penurunan pada tahun sebelumnya, tahun 2023 sekali lagi mencatatkan **penurunan kes kemalangan elektrik dengan 44 kes, di mana 23 merupakan kes maut dan 21 lagi ialah kes tidak maut.** Ini merupakan penurunan ketara berbanding 58 kes pada 2022, di mana 29 merupakan kes maut dan 29 lagi ialah kes tidak maut.

Despite the alleviated pressure from the global energy crisis compared to previous year, 2023 still presents its own challenges for the energy sector. These include ongoing battles in Ukraine, geopolitical tensions in the Middle East, and pressures to accelerate energy transition through sustainable new technologies.

For Malaysia, the economic recovery post-pandemic has indirectly restimulated the resurgence of the energy sector. The increasingly robust economic activities and the continued recovery of the labour market enabled Malaysia to achieve a Gross Domestic Product (GDP) growth rate of 3.7% in 2023, amidst a globally subdued economic environment.

The increase in socio-economic activities, including the burgeoning recovery of the industrial sector, is among the factors contributing to ***the rise in electricity generation in the Peninsula and Sabah, by 2.29% and 5.4%, respectively, compared to 2022.*** *The peak demand on the grid system in the Peninsula also reached a record high of 19,716 MW, marking a 2.8% increase from the previous year, while Sabah recorded a peak demand increase of 5.6% to 1,090.7 MW.*

As mandated, the Commission continues to shoulder the responsibility of driving the nation's energy sector through five (5) strategic pillars: Prioritising Safety and Enforcement, Strengthening the Energy Security, Ensuring the Reliability of Energy Supply and Service Quality of the Industry, Enhancing Economic Efficiency and Affordability, and Promoting Energy Sustainability.

Prioritising Safety and Enforcement

Although the topic of energy transition remains a focus with special emphasis, safety and enforcement continue to be prioritised to ensure consumer interests are protected. This critical role is carried out to comply with safety standards and the enforcement of Acts and Regulations, thereby ensuring safe and effective supply.

Following a decrease from the previous year, in 2023, there was a further ***reduction in electrical accidents, with 44 cases recorded, comprising 23 fatal and 21 non-fatal incidents.*** *This marks a significant decrease compared to 58 cases in 2022, which included 29 fatal and 29 non-fatal incidents.*

Dari segi lokasi, kawasan kediaman merupakan lokasi tertinggi bagi kes kemalangan elektrik dengan 10 kes, diikuti industri dengan tujuh (7) kes serta talian atas voltan tinggi dan tapak pembinaan, masing-masing dengan lima (5) kes. Punca kemalangan elektrik tertinggi pula adalah pemasangan/ penyenggaraan tidak sempurna dengan 17 kes, aktiviti kerja orang awam berhampiran pepasangan elektrik dengan 11 kes dan prosedur kerja selamat tidak dipatuhi dengan enam (6) kes.

Bidang gas pula menunjukkan perkembangan yang sangat baik di mana **tiada kes kemalangan gas dicatatkan untuk 2023,** berbanding satu (1) kes kemalangan yang direkodkan pada tahun sebelumnya. Untuk tempoh lima (5) tahun sejak 2019, sebanyak empat (4) kes kemalangan gas direkodkan.

ST terus menjalankan pelbagai inisiatif meningkatkan kesedaran mengenai keselamatan elektrik dan gas, melalui pameran kerjasama dengan agensi-agensi lain. Selain itu, **ST turut memperkenalkan komik Adiwira ST dan maskot RoboST sebagai adiwira keselamatan.** Majlis pelancaran RoboST telah diadakan pada 8 Mei 2023, di mana komik Adiwira ST diserahkan kepada Kementerian Pendidikan untuk diedarkan ke sekolah-sekolah.

Turut diperkemas ialah aktiviti penguatkuasaan bagi memastikan pematuhan terhadap Akta dan Peraturan yang berkaitan. **Sebanyak 1,328 pemeriksaan dilaksanakan terhadap kontraktor elektrik, premis pengguna-pengguna industri kecil, komersial dan domestik termasuk kilang, hotel, pusat membeli-belah dan kediaman, di samping audit pengurusan keselamatan elektrik dan gas untuk pepasangan elektrik dan gas yang besar.**

Satu penambahbaikan terhadap proses pelesenan juga telah dilaksanakan pada 2023, dalam usaha untuk mempercepatkan tempoh kelulusan, serta meningkatkan kecekapan proses permohonan melalui pengurangan karenah birokrasi. Melalui penambahbaikan ini, **proses kelulusan bagi empat (4) kategori pelesenan iaitu Lesen Awam (Penjanaan) [Pemeteran Tenaga Bersih (NEM) GoMEn, NOVA dan *Solar SELCO Leasing*] serta permohonan Lesen Awam (Pengagihan) [*Electric Vehicle Charging Station* (EVCS)] yang berkapasiti di bawah 5 MW kini adalah di bawah kuasa pengurusan ST,** mengikut kriteria kelulusan yang ditetapkan.

Melalui langkah ini, **tempoh kelulusan bagi permohonan disasarkan dapat dikurangkan sehingga 30 hari bekerja berbanding 60 hari bekerja** bagi proses kelulusan sedia ada. Adalah diharapkan melalui langkah ini, sektor-sektor ini

In terms of locations, residential areas reported the highest number of electrical accidents with 10 cases, followed by the industrial sector with seven (7) cases, and high voltage overhead lines and construction sites, each with five (5) cases. The leading cause of electrical accidents was incomplete installation/maintenance with 17 cases, followed by public activities near electrical installations with 11 cases, and failure to adhere to safety procedures with six (6) cases.

The gas sector also showed significant improvement, with ***no gas accidents recorded in 2023,*** *compared to one (1) accident in the previous year. Over the past five (5) years since 2019, a total of four (4) gas accidents have been recorded.*

The Commission continues to implement various initiatives to enhance awareness of electrical and gas safety through collaborative exhibitions with other agencies. Additionally, ***the Commission has introduced the Adiwira ST comic and the RoboST mascot as a safety hero.*** *The RoboST launch event was held on 8 May 2023, where the Adiwira ST comic was handed over to the Ministry of Education for distribution to schools.*

Enforcement activities have also been strengthened to ensure compliance with relevant Acts and Regulations. ***A total of 1,328 inspections were conducted on electrical contractors, premises of small, commercial, and domestic industrial users, including factories, hotels, shopping centres and residences, in addition to safety management audits for large-scale electrical and gas installations.***

An improvement in the licensing process was also implemented in 2023 to expedite approval times and enhance efficiency by reducing bureaucratic hurdles. Under this enhancement, ***the approval process for four (4) licensing categories, namely Public Licence (Generation) [Clean Energy Metering (NEM) GoMEn, NOVA, and Solar SELCO Leasing] and Public Licence (Distribution) [Electric Vehicle Charging Station (EVCS)] with capacities below 5 MW, is now under the Commission's management****, in accordance to specified approval criteria.*

Through these measures, ***the approval period for applications is targeted to be reduced to 30 working days compared to the existing 60 working days*** *approval process. It is hoped*

dapat berkembang dengan lebih baik, sekali gus menyokong penggunaan tenaga boleh baharu (TBB) dan kenderaan hijau di negara ini.

Memperkukuhkan Keberterusan Bekalan Tenaga

Aspek keberterusan bekalan tenaga terus menjadi agenda utama ST, memandangkan bekalan tenaga yang berterusan dan stabil bukan sahaja merupakan pemangkin kepada pertumbuhan dan perkembangan ekonomi malah merupakan keperluan asas kepada penduduk. Melalui perbincangan dan komunikasi dengan pelbagai pihak berkepentingan, pelan pembangunan penjanaan dirancang dengan teratur, mengambil kira harga dan campuran bahan api, polisi dan aspirasi Kerajaan serta komitmen antarabangsa.

Pada 2023, **Kerajaan mengekalkan sasaran kapasiti TBB di Malaysia sebanyak 31% menjelang 2025, dan seterusnya 40% menjelang 2040.** Secara amnya, penjanaan tenaga melalui TBB di Semenanjung menunjukkan peningkatan, di samping penjanaan tenaga daripada sumber bahan api arang batu dan gas. Daripada 90 stesen jana kuasa yang sedang beroperasi di Semenanjung, 61 merupakan Ladang Solar Berskala Besar (LSS), peningkatan 39% berbanding 44 pada tahun lalu.

Margin rizab bagi Semenanjung pada 31 Disember 2023 berada pada paras 33%, dan diunjurkan berada dalam lingkungan 30% bermula 2031 bagi memastikan keberterusan bekalan elektrik untuk memenuhi permintaan elektrik yang pesat terutamanya daripada pangkalan data. **Di Sabah pula, margin rizab mencatat penurunan kepada 10%, berbanding 23% pada 2022,** disebabkan gangguan yang tidak dirancang oleh Stesen Jana Kuasa Patau-Patau dan Stesen Jana Kuasa Tenom Pangi. Selain prestasi stesen-stesen jana kuasa sedia ada yang tidak baik, kekangan kapasiti penjanaan daripada projek-projek yang mengalami kelewatan juga menyebabkan penurunan margin rizab.

Usaha kerjasama serantau bagi pembekalan tenaga turut diperkukuhkan melalui *Lao PDR-Thailand-Malaysia-Singapore Power Integration Project* (LTMS-PIP). **Sepanjang 2023, sebanyak 270 GWj tenaga elektrik telah disalurkan dari Lao PDR ke Singapura melalui talian penghantaran Semenanjung.** ST turut membantu dari segi pelaksanaan, pemantauan dan pelaporan projek LTMS-PIP, daripada aspek-aspek teknikal, komersial dan perundangan kawal selia bagi memastikan kelancaran usaha sama.

that this step will foster better development in these sectors, thereby supporting the adoption of renewable energy (RE) and green vehicles in the country.

Strengthening the Energy Security

The aspect of energy security remains a top agenda for the Commission, considering that a continuous and stable energy supply not only drives economic growth and development but is also a fundamental necessity for the population. Through discussions and communications with various stakeholders, the generation development plan is being carefully worked, taking into account fuel price and mix, Government policies and aspirations, as well as international commitments.

In 2023, ***the Government maintained Malaysia's RE capacity targets at 31% by 2025 and further at 40% by 2040.*** *Generally, energy generation through RE sources in the Peninsula has shown an increase, alongside energy generation from coal and gas sources. Of the 90 power generation stations currently operating in the Peninsula, 61 are Large Scale Solar (LSS) farms, marking a 39% increase from 44 farms the previous year.*

The reserve margin for the Peninsula, as of 31 December 2023, stood at 33% and is projected to be around 30% starting 2031 *to ensure continuous electricity supply to meet rapid electricity demand, particularly from data centres.* ***In Sabah however, the reserve margin decreased to 10%, compared to 23% in 2022,*** *due to unplanned disruptions at the Patau-Patau Power Station and Tenom Pangi Power Station. Besides the poor performance of existing power stations, capacity constraints from delayed projects have also contributed to the decline in reserve margin.*

Regional cooperation efforts for energy supply are further strengthened through the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP). ***Throughout 2023, a total of 270 GWh of electrical energy was transmitted from Lao PDR to Singapore via the Peninsula transmission lines.*** *The Commission also assists in the implementation, monitoring and reporting of the LTMS-PIP project, covering technical, commercial and regulatory oversight aspects to ensure smooth operation of this joint effort.*

Memastikan Daya Harap Pembekalan Tenaga dan Kualiti Perkhidmatan Industri

Bekalan tenaga yang berterusan akan lebih mapan sekiranya ia sentiasa konsisten tanpa sebarang gangguan, berdaya harap dan berkualiti tinggi. Atas sebab itu, ST tidak pernah mengambil ringan aspek berkenaan, dan sentiasa mengkaji dan melaksanakan langkah-langkah untuk menambah baik sektor pembekalan tenaga termasuk dari segi penggunaan teknologi, pemakaian standard industri dan pemantauan perkhidmatan pembekal tenaga.

Untuk 2023, jumlah kapasiti terpasang daripada penjanaan stesen jana kuasa di Semenanjung ialah 27,185 MW, penurunan berbanding 27,775 MW pada 2022. Ini disebabkan oleh penamatan operasi stesen jana kuasa Panglima Power Berhad (720 MW) pada 27 Februari 2023, walaupun dengan penambahan kapasiti pada sistem grid lanjutan permulaan operasi projek LSS Idiwan Solar Sdn. Bhd. (30 MW), JAKS Solar Nibong Tebal Sdn. Bhd. (50 MW) dan TNB Bukit Selambau Solar 2 Sdn. Bhd. (50 MW).

Di Sabah pula, kapasiti boleh harap ialah sebanyak 1,177 MW, menurun 7% berbanding 1,268 MW pada 2022. Penurunan kapasiti boleh harap ini disebabkan oleh perubahan bagi kapasiti yang diisytiharkan di stesen-stesen jana kuasa Tenom Pangi, Tawau, Sandakan, Patau-Patau dan Serudong, disebabkan faktor henti tugas yang lama dan usia loji. Bagi mengatasi keadaan ini, ST telah mengarahkan SESB untuk melaksanakan beberapa inisiatif termasuk pelaksanaan sewaan kapasiti jangka pendek 100 MW.

Pemantauan prestasi sistem penghantaran pula mendapati bacaan *Delivery Points Unreliability Index* (DePUI) bagi TNB di Semenanjung meningkat sebanyak 0.311 minit kepada 0.483 minit pada 2023, daripada 0.172 minit pada 2022. Di Sabah dan Labuan pula, SESB menunjukkan prestasi yang baik dengan bacaan DePUI yang menurun kepada 16.83 minit pada 2023, berbanding 42.97 minit pada 2018. Secara keseluruhannya, **prestasi DePUI bagi kedua-dua sistem penghantaran berada di tahap yang baik dan tidak melebihi sasaran yang ditetapkan iaitu dua (2) minit untuk Semenanjung dan 50 minit untuk Sabah dan Labuan.**

Bagi sistem pengagihan pula, **pencapaian *System Average Interruption Duration Index* (SAIDI) di Semenanjung ialah 46.10 minit/pelanggan/tahun.** Walaupun sedikit meningkat berbanding 45.25 minit/pelanggan/tahun bagi 2022, ia masih di bawah sasaran yang ditetapkan iaitu 48 minit/pelanggan/

Ensuring the Reliability of Energy Supply and Service Quality of the Industry

Continuous energy supply becomes more robust when it remains consistently uninterrupted, reliable and of high quality. For this reason, the Commission never takes these aspects lightly and continually assesses and implements measures to enhance the energy supply sector, including technological advancements, adherence to industry standards as well as monitoring the service of energy suppliers.

In 2023, the total installed capacity from power generation stations in the Peninsula was 27,185 MW, a decrease from 27,775 MW in 2022. *This was due to the decommissioning of the Panglima Power Berhad power station (720 MW) on 27 February 2023, despite additional capacity from the commencement of operations of the LSS Idiwan Solar Sdn. Bhd. project (30 MW), JAKS Solar Nibong Tebal Sdn. Bhd. (50 MW), and TNB Bukit Selambau Solar 2 Sdn. Bhd. (50 MW) on the grid system.*

In Sabah, the dependable capacity was 1,177 MW, a 7% decrease from 1,268 MW in 2022. *This reduction in dependable capacity was due to changes in the declared capacity at the Tenom Pangi, Tawau, Sandakan, Patau-Patau and Serudong power stations, attributed to long shutdowns and ageing plants. To address this situation, the Commission directed SESB to implement several initiatives, including the implementation of a short-term capacity rental of 100 MW.*

Monitoring of transmission system performance found that the Delivery Points Unreliability Index (DePUI) for TNB in the Peninsula increased by 0.311 minutes to 0.483 minutes in 2023, from 0.172 minutes in 2022. In Sabah and Labuan, SESB showed good performance, with a decrease in DePUI to 16.83 minutes in 2023, compared to 42.97 minutes in 2018. Overall, ***the DePUI performance for both transmission systems remains at a good level and does not exceed the set targets of two (2) minutes for the Peninsula and 50 minutes for Sabah and Labuan.***

For the distribution system, ***the System Average Interruption Duration Index (SAIDI) for the Peninsula was 46.10 minutes/customer/year.*** *Although slightly increased compared to 45.25 minutes/customer/year in 2022, it remains below the set target of 48 minutes/customer/year. Meanwhile,* ***Sabah***

tahun. **Sabah pula mencatat bacaan SAIDI sebanyak 266.35 minit/pelanggan/tahun, iaitu penurunan berbanding 286.22 minit/pelanggan/tahun pada 2022. SAIDI bagi talian paip pengagihan gas asli di Semenanjung pula mengekalkan bacaan yang baik iaitu 0 minit/pelanggan.**

Pematuhan terhadap **Tahap Perkhidmatan Yang Dijamin (GSL) bagi TNB juga menunjukkan pencapaian yang memberangsangkan, dengan catatan sebanyak 99.84%, lebih tinggi berbanding 99.73% pada 2022.** Begitu juga dengan **Tahap Perkhidmatan Minimum (MSL) yang meningkat daripada 97.79% pada 2022 kepada 99.63% pada 2023.** SESB pula merekodkan catatan GSL sebanyak 94.51% dan catatan MSL sebanyak 87.47%. Selain itu, hasil Kajian Indeks Kepuasan Pelanggan TNB (CSI-TNB) telah merekodkan skor sebanyak 8.8, peningkatan berbanding 8.7 yang direkodkan pada 2022.

Sebagai langkah proaktif ke arah pembangunan sistem grid yang optimum, Kajian Pindaan Kod Grid Semenanjung Malaysia (GCPM) telah dilaksanakan bermula Februari 2022 sehingga Jun 2023. Bertujuan untuk menambah baik Kod Grid sedia ada dengan mengambil kira struktur industri pembekalan elektrik semasa, kajian ini turut menyelaras istilah dan terma di dalam Kod Grid, serta mengemas kini penyelarasan perancangan penjanaan dan sistem penghantaran.

Kod Grid yang baharu ini juga akan lebih mesra aplikasi teknologi dan model perniagaan baharu seperti sistem penstoran tenaga dan *demand response*, sesuai dengan perkembangan semasa sektor tenaga dan dunia secara amnya. Diharap dapat mewujudkan satu sistem grid yang kalis cabaran masa depan, hasil daripada kajian akan diangkat untuk kelulusan Menteri Peralihan Tenaga dan Transformasi Air sebelum dikuatkuasakan.

Meningkatkan Kecekapan Ekonomi dan Kemampuan

Peningkatan kecekapan ekonomi merupakan satu lagi aspek penting dalam menjamin pembekalan tenaga ke arah pembangunan ekonomi yang mampan dan inklusif. Ia juga saling berkaitan dengan kemampuan di mana peningkatan kecekapan ekonomi dapat menjamin penggunaan sumber yang optimum, sekali gus memastikan kemampuan terhadap akses tenaga.

Di Semenanjung, pelaksanaan Kawal Selia Berasaskan Insentif (IBR) telah memasuki tempoh kawal selia ketiga (RP3) iaitu dari 2022 hingga 2024, dengan kadar purata tarif

recorded a SAIDI reading of 266.35 minutes/customer/year, a decrease from 286.22 minutes/customer/year in 2022. The SAIDI for the natural gas distribution pipeline in the Peninsula maintained a good reading of 0 minutes/customer.

Compliance with the ***Guaranteed Service Level (GSL) for TNB also showed impressive achievements, with a record of 99.84%, higher than 99.73% in 2022.*** *Similarly,* ***the Minimum Service Level (MSL) increased from 97.79% in 2022 to 99.63% in 2023.*** *SESB also recorded GSL at 94.51% and MSL at 87.47%. Other than that, the Customer Satisfaction Index Study for TNB (CSI-TNB) recorded a score of 8.8, an increase from 8.7 recorded in 2022.*

As a proactive step towards optimal grid system development, the Amendment of the Grid Code for Peninsular Malaysia (GCPM) Study was conducted from February 2022 to June 2023. Aimed at enhancing the existing Grid Code by considering the current electricity supply industry structure, this study also aligns terms and terminology within the Grid Code, as well as updates the coordination for generation and transmission system planning.

This new Grid Code will also be more friendly towards new technological applications and business models such as energy storage systems and demand response, in line with current developments in the energy sector and the world in general. In hopes of creating a future-proof grid system, the results of the study will be submitted to the Minister of Energy Transition and Water Transformation for approval before implementation.

Enhancing Economic Efficiency and Affordability

Enhancing economic efficiency is another crucial aspect in ensuring energy supply towards sustainable and inclusive economic development. It is also interrelated with affordability where improving economic efficiency can ensure optimal resource utilisation, thereby ensuring affordability of access to energy.

In the Peninsula, the implementation of Incentive-Based Regulation (IBR) has entered its third regulatory period (RP3) from 2022 to 2024, with an average base electricity

asas elektrik sebanyak 39.95 sen/kWj. Bagi meminimumkan impak pelaksanaan Pelepasan Kos Tidak Berimbang (ICPT) berikutan peningkatan kos bahan api, **Kerajaan memperuntukkan subsidi sebanyak RM15.96 bilion bagi menampung kos ICPT kepada pengguna bersasar,** di mana sebanyak RM10.76 bilion bagi tempoh pelaksanaan Januari hingga Jun 2023 dan RM5.2 bilion lagi bagi menampung kos ICPT bagi tempoh pelaksanaan Julai hingga Disember 2023.

Di Sabah dan Labuan pula, 2023 merupakan tahun kedua pelaksanaan tempoh kawal selia pertama (RP1) di bawah rangka kerja IBR, dengan kadar purata tarif asas elektrik sebanyak 34.52 sen/kWj. Bagaimanapun, situasi di Sabah dan Labuan adalah sedikit berbeza, di mana sebahagian daripada kos pembekalan tersebut ditampung melalui subsidi Kerajaan. Melalui mekanisme ICPT, subsidi yang diperuntukkan kepada SESB diselaraskan dengan ICPT terlebih dahulu sebelum dilepaskan kepada pengguna, tertakluk kepada keputusan oleh Kerajaan. **Bagi 2023, Kerajaan memperuntukkan subsidi sebanyak RM266.50 juta bagi menampung kos ICPT kepada pengguna bersasar,** di mana sebanyak RM212.2 juta subsidi diperuntukkan bagi menampung kos ICPT bagi tempoh pelaksanaan Januari hingga Jun dan sejumlah RM54.3 juta subsidi diperuntukkan bagi menampung kos ICPT bagi tempoh pelaksanaan Julai hingga Disember kepada pengguna yang mendapat pengecualian surcaj ICPT.

Bagi pengguna di KHTP pula, Kerajaan masih mengekalkan keputusan dengan pelarasan tarif elektrik dilepaskan sepenuhnya kepada pengguna bukan domestik di mana mereka kekal dengan tarif sedia ada bagi tempoh pelaksanaan ICPT Januari hingga Jun 2023 dan bagi tempoh pelaksanaan Julai hingga Disember 2023.

Untuk sektor gas, pelaksanaan IBR kini memasuki tempoh kawal selia kedua (RP2), bermula 1 Januari 2023 sehingga 31 Disember 2025. Selain itu, **Kerajaan juga bersetuju untuk memperkenalkan kategori tarif tambahan baharu dalam tempoh RP2 bagi projek pembinaan talian paip penghantaran bertekanan tinggi milik PGB iaitu projek SCORE [*Peninsular Gas Utilisation (PGU) II Sector 3 Compressor Relocation*], yang bertujuan untuk membekalkan gas ke Singapura. Ia ditetapkan pada kadar RM1.614/GJ/hari.**

Bagi tujuan pengawalseliaan yang lebih efektif terhadap pemegang lesen kemudahan gas, **ST juga memperkenalkan peruntukan baharu berkenaan pematuhan penyediaan pelaporan kawal selia iaitu Regulatory Reporting Statement (RRS) yang beraudit.** Langkah ini diambil untuk memantau

tariff rate of 39.95 sen/kWh. To minimise the impact of the implementation of Imbalance Cost Pass-Through (ICPT) due to increased fuel costs, ***the Government has allocated subsidies amounting to RM15.96 billion to offset ICPT costs for targeted consumers.*** *This includes RM10.76 billion for the implementation period of January to June 2023 and an additional RM5.2 billion to cover ICPT costs for the implementation period of July to December 2023.*

In Sabah and Labuan, 2023 marks the second year of the first regulatory period (RP1) under the IBR framework, with an average base electricity tariff rate of 34.52 sen/kWh. However, the situation in Sabah and Labuan is slightly different, where a portion of these supply costs is subsidised by the Government. Through the ICPT mechanism, subsidies allocated to SESB are adjusted with ICPT first before being released to consumers, subject to Government decisions. ***For 2023, the Government has allocated RM266.50 million in subsidies to offset ICPT costs for targeted consumers,*** *including RM212.2 million to cover ICPT costs for the implementation period of January to June and an additional RM54.3 million to cover ICPT costs for the implementation period of July to December for consumers exempted from ICPT surcharges.*

For consumers at KHTP, the Government continues to maintain its decision to entirely release the electricity tariff adjustment to non-domestic consumers, where the tariff remains at existing rates during the ICPT implementation periods of January to June 2023 and July to December 2023.

In the gas sector, the implementation of IBR is now in its second regulatory period (RP2), effective from 1 January 2023 to 31 December 2025. Additionally, ***the Government has agreed to introduce a new additional tariff category during RP2 for the construction of high-pressure transmission pipelines owned by PGB, known as the SCORE project (Peninsular Gas Utilisation (PGU) II Sector 3 Compressor Relocation), aimed at supplying gas to Singapore. It is set at a rate of RM1.614/GJ/day.***

For more effective oversight of gas facility licence holders, ***the Commission has also introduced a new provision regarding compliance with regulatory reporting, known as audited Regulatory Reporting Statement (RRS).*** *This measure is taken to monitor and analyse the actual transactions or performance of licence holders in terms of revenue earned and expenses incurred, compared to Government-approved projections each year during the regulatory period.*

dan menganalisis transaksi atau prestasi sebenar pemegang lesen dari segi pendapatan yang diperoleh dan kos yang dibelanjakan, berbanding pendapatan dan kos yang diunjurkan dan diluluskan oleh pihak Kerajaan pada setiap tahun dalam tempoh kawal selia.

Mempromosikan Kemampanan Tenaga

Seiring dengan matlamat peralihan tenaga, ST terus memperkasakan inisiatif-inisiatif ke arah pemanfaatan sumber tenaga yang lestari serta penggunaan tenaga yang lebih cekap, sekali gus mengurangkan kebergantungan kepada bahan api fosil. Bagi tujuan ini, pelbagai langkah telah diambil dan diteruskan pada 2023, termasuk program-program seperti LSS, NEM dan Program Tenaga Hijau Korporat (CGPP).

Intensiti tenaga elektrik di Semenanjung yang berkurang sebanyak 0.32% kepada 0.0933 GWj/RM juta pada 2023, berbanding 0.0936 GWj/RM juta pada 2022, menunjukkan kadar kecekapan penggunaan elektrik yang semakin tinggi. **Di Sabah pula, intensiti tenaga elektrik meningkat 1.05% kepada 0.0618 GWj/RM juta** pada 2023 berbanding 0.0611 GWj/RM juta pada tahun sebelumnya. Pelaksanaan Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP) pula mencatatkan penjimatan tenaga elektrik sebanyak 5.87%, yang menyumbang kepada pengurangan pelepasan gas rumah hijau sebanyak 5,045.82 $ktCO_2$. **Penjimatan tenaga elektrik tahunan yang dicapai sehingga Disember 2023 pula ialah sebanyak 8,625 GWj, bersamaan dengan RM2.166 billion.**

Tahun 2023 juga merupakan tahun ke-10 ST menganjurkan *Energy Efficiency (EE) Challenge*, pertandingan yang diadakan bagi membudayakan kehidupan cekap tenaga di kalangan generasi muda. Sepanjang 10 tahun penganjurannya, **pertandingan ini mencatat penjimatan tenaga terkumpul sebanyak 1,515,011 kWj,** hasil daripada aktiviti kecekapan tenaga yang dijalankan oleh sekolah yang bertanding. Jumlah ini bersamaan dengan **nilai penjimatan bil elektrik berjumlah RM771,126.00, serta penghindaran karbon sebanyak 1,181.71 tan CO_2.**

Menambah Baik Kualiti Kawal Selia dan Pelaksanaan Perkhidmatan

Selain lima (5) teras strategik yang menjadi tumpuan ST dalam melaksanakan fungsi sebagai badan kawal selia sektor tenaga, penekanan turut diberikan terhadap kualiti kawal selia bagi menjamin tahap perkhidmatan yang terbaik.

Promoting Energy Sustainability

Aligned with the energy transition goals, the Commission continues to strengthen initiatives towards sustainable energy utilisation and a more efficient use of energy, while reducing reliance on fossil fuels. To this end, various steps have been taken and continued into 2023, including programmes such as LSS, NEM, and the Corporate Green Power Purchase Programme (CGPP).

Electricity intensity in the Peninsula decreased by 0.32% to 0.0933 GWh/RM million** in 2023, compared to 0.0936 GWh/RM million in 2022, indicating higher efficiency in electricity usage. **In Sabah, electricity intensity increased by 1.05% to 0.0618 GWh/RM million** in 2023 compared to 0.0611 GWh/RM million in the previous year. The implementation of the National Energy Efficiency Action Plan (NEEAP) recorded electricity energy savings of 5.87%, contributing to a reduction in greenhouse gas emissions by 5,045.82 $ktCO_2$. **The annual electricity savings achieved as of December 2023 amounted to 8,625 GWh, equivalent to RM2.166 billion.

*2023 also marked the 10th year of the Commission organising the Energy Efficiency (EE) Challenge, a competition aimed at promoting energy efficiency culture among the younger generation. Over its 10-year span, **the competition accumulated energy savings of 1,515,011 kWh,** resulting from energy efficiency activities carried out by participating schools. This amount is equivalent to **electricity bill savings of RM771,126.00, and the carbon avoidance of 1,181.71 tons of CO_2.***

Improvement of Regulatory Quality and Service Delivery

In addition to the five (5) strategic pillars that the Commission focuses on in carrying out its function as the energy sector regulator, emphasis is also placed on the quality of regulatory oversight to ensure the highest level of service. With high commitment, a holistic approach and continuous effort, the services provided are continually improved over time, meeting the needs of all parties involved.

*Manifestations of this improvement include the number of complaints resolved, where **93.7% of the 1,579 complaints received throughout 2023 were resolved. The Commission's 2023 Stakeholder Satisfaction Index (SSI) study, conducted to measure stakeholder satisfaction with the quality of services provided, achieved a score of 98%.***

Dengan komitmen yang tinggi, pendekatan yang holistik dan usaha yang berterusan, perkhidmatan yang disediakan dapat ditambah baik dari semasa ke semasa, serta memenuhi keperluan semua pihak.

Manifestasi penambahbaikan ini termasuklah jumlah aduan yang diselesaikan, di mana **93.7% daripada 1,579 aduan yang diterima sepanjang 2023 telah diselesaikan. Kajian Kepuasan Pemegang Taruh (SSI) ST 2023 yang dijalankan bagi mengukur tahap kepuasan pemegang taruh ST terhadap kualiti perkhidmatan yang disediakan pula mencatat pencapaian sebanyak 98%.**

Audit Pemantauan Kedua yang diadakan pada 2023 adalah memuaskan dan menunjukkan tiada ketidakpatuhan, membolehkan ST kekal dengan pensijilan ISO 9001:2015. Ini membuktikan Sistem Pengurusan Kualiti (SPK) dan proses kerja di ST memenuhi keperluan piawaian antarabangsa. Bagi mendapatkan pandangan pihak-pihak berkepentingan serta mengadakan perbincangan mengenai isu-isu semasa berkaitan sektor tenaga, Mesyuarat Panel Perunding Tenaga (PPT) telah diadakan dengan kehadiran kira-kira 150 peserta dari kalangan pemain industri.

Pembangunan Kapasiti dan Keupayaan

Tidak dinafikan, pembangunan kapasiti dan keupayaan merupakan komponen penting yang membolehkan ST terus menjalankan tugas dengan efektif. Selain pelaksanaan pengambilan sepanjang tahun, ST turut memberikan peluang pergerakan kerjaya kepada kakitangan yang layak dan cemerlang. Selain itu, program-program pembangunan dalaman seperti kursus kepimpinan, kursus kemahiran berkomunikasi dan lain-lain bidang kemahiran juga diteruskan, di mana **sebanyak 224 kursus telah dilaksanakan termasuk sesi *Coaching and Mentoring oleh Subject Matter Experts* di ST.**

ST juga menggalakkan warganya untuk melanjutkan pelajaran ke peringkat yang lebih tinggi melalui pemberian biasiswa dalam bidang-bidang berkaitan fungsi ST. **Sehingga 2023, 20 kakitangan telah dianugerahkan dengan biasiswa ST dengan kos sebanyak RM402,601.00.** Di samping itu, ST juga menyokong usaha kakitangannya untuk mendapatkan Pensijilan Professional seperti *Professional Engineer* (Ir) dan *Professional Technologist* (Ts) dengan membiayai kos pendaftaran dan fi ujian bagi bagi kelayakan-kelayakan ini. Sehingga kini, **seramai 42 kakitangan ST telah mendapat pensijilan di dalam bidang-bidang profesional ini.**

The Second Surveillance Audit conducted in 2023 was satisfactory and showed no non-compliance, allowing the Commission to maintain ISO 9001:2015 certification. This demonstrates that the Quality Management System (QMS) and work processes at the Commission meet international standards. To gather stakeholder perspectives and hold discussions on current issues related to the energy sector, the Energy Consultation Panel (PPT) Meeting was held with the attendance of about 150 participants from industry players.

Capacity and Capability Building

Undeniably, capacity and capability building are crucial components that enable the Commission to continue carrying out its duties effectively. In addition to year-round recruitment, the Commission also provides career advancement opportunities to qualified, outstanding staff. Internal development programmes such as leadership courses, communication skills courses, and other skill enhancement fields are consistently conducted, with ***a total of 224 courses implemented, including Coaching and Mentoring sessions by Subject Matter Experts at the Commission.***

The Commission also encourages its employees to pursue higher education through scholarships in fields relevant to the Commission's functions. ***As of 2023, 20 staff members have been awarded the Commission's scholarships totalling RM402,601.00 in costs.*** *Moreover, the Commission supports its staff in obtaining Professional Certifications such as Professional Engineer (Ir) and Professional Technologist (Ts) by covering registration costs and examination fees for these qualifications. To date,* ***42 of the Commission's employees have obtained certifications in these professional fields.***

These efforts prove that the Commission is always striving to provide the best for its workforce, both in terms of recognition and personal advancement, to ensure they remain committed and excel in their respective roles.

I am also tremendously proud that the Commission was selected as the recipient of the Brandlaureate Bestbrands Award 2022–2023 under the category Nation's Pride—Energy Sector Regulation Excellence, based on the Commission's performance and achievements in advancing Malaysia's energy transition towards clean and RE sources. This demonstrates the Commission's excellence in fulfilling its duties and responsibilities, and serves as recognition of the Commission's efforts in regulating and advancing the nation's energy sector.

Usaha-usaha ini membuktikan bahawa ST sentiasa ingin memberikan yang terbaik buat warga kerjanya, baik daripada segi pengiktirafan mahupun untuk kemajuan diri, bagi memastikan mereka sentiasa komited dan cemerlang dalam melaksanakan tugasan masing-masing.

Saya juga berasa amat berbangga apabila ST terpilih sebagai penerima anugerah *Brandlaureate Bestbrands Award 2022–2023* di bawah kategori *Nation's Pride—Energy Sector Regulation Excellence*, berdasarkan prestasi dan pencapaian ST dalam memacu peralihan tenaga Malaysia ke arah sumber bersih dan TBB. Ini menunjukkan kecemerlangan ST dalam menjalankan tugas dan tanggungjawabnya, dan merupakan pengiktirafan terhadap usaha-usaha ST dalam mengawal selia dan memajukan sektor tenaga negara.

Pada masa sama, saya juga ingin mengucapkan setinggi-tinggi ucapan terima kasih kepada semua warga ST, yang sentiasa memberikan komitmen yang jitu dan berdedikasi dalam menjalankan tugas masing-masing. Saya juga yakin komitmen ini dapat diteruskan, dan kesemua warga ST berupaya untuk bekerja sebagai satu pasukan dalam mencapai satu matlamat yang sama - menjadikan ST sebagai badan kawal selia sektor tenaga bertaraf dunia.

Terima kasih dan salam hormat.

DATO' IR. TS. ABDUL RAZIB DAWOOD
Ketua Pegawai Eksekutif Suruhanjaya Tenaga
Chief Executive Officer of the Energy Commission

At the same time, I would like to extend my highest gratitude to the Commission's employees, who consistently demonstrate unwavering commitment and dedication in carrying out their duties. I am confident that this commitment will continue, and all the Commission's employees are capable of working together as a team to achieve a common goal - establishing the Commission as a world-class energy regulator.

Thank you and best regards.

Maklumat Utama

Key Information

Keselamatan dan Penguatkuasaan
Safety and Enforcement



Jumlah Kes Kemalangan Elektrik
Total of Electrical Accidents

44 **Kes** *Cases*

Jumlah Kes Kemalangan Gas Berpaip
Total of Piped Gas Accidents

0 **Kes** *Case*



Punca Utama Kemalangan
Main Causes of Accidents

Elektrik / *Electric*
- Pemasangan/Penyenggaraan Tidak Sempurna
  Improper Installation/Maintenance
- Aktiviti Kerja Orang Awam Berhampiran Pepasangan Elektrik
  Public Activities Near Electrical Installations
- Prosedur Kerja Selamat Tidak Dipatuhi
  Non-Compliance With Safe Work Procedures

Gas Berpaip / *Piped Gas*
- Tiada / *None*

Lokasi Utama Kemalangan
Main Locations of Accidents

Elektrik / *Electric*
- Kawasan Kediaman / *Residential Areas*
- Industri / *Industrial*
- Talian Atas Voltan Tinggi, Tapak Pembinaan
  High Voltage Overhead Lines, Construction Sites

Gas Berpaip / *Piped Gas*
- Tiada / *None*

Pelesenen / *Licensing*

3,644
Lesen Elektrik
Electrical Licences

3,962
Lesen Gas Persendirian
Private Gas Licences

40
Lesen Berkaitan Akses Pihak Ketiga
TPA Related Licences

701
Lesen Gas Peruncitan
Gas Retail Licences

Perakuan Kekompetenan dan Kontraktor
Competency Certification and Contractors

- Perakuan Kekompetenan Elektrik / *Electrical Competency Certification:*
  7,058 Perakuan / *Certificates*
- Pendaftaran Kontraktor Elektrik: *Electrical Contractors Registration:*
  3,312 Kontraktor / *Contractors*
- Institusi Ditauliahkan untuk Mengendali Peperiksaan Kekompetenan Elektrik / *Accredited Institutions Facilitating Electrical Competency Examinations:*
  9 Institusi / *Institutions*
- Perakuan Kekompetenan Gas / *Gas Competency Certification:*
  41 Perakuan / *Certificates*
- Pendaftaran Kontraktor Gas: *Gas Contractors Registration:*
  112 Kontraktor / *Contractors*
- Institusi Ditauliahkan untuk Mengendali Peperiksaan Kekompetenan Gas / *Accredited Institutions Facilitating Gas Competency Examinations:*
  0 Institusi / *Institution*

Keselamatan dan Penguatkuasaan
Safety and Enforcement

Kertas Siasatan
Investigation Papers

Kertas Siasatan Dirujuk ke Jabatan Peguam Negara *Investigation Papers Referred to the Attorney General's Chamber:*	**61** Kertas Siasatan *Investigation Papers*
Kertas Siasatan Dirujuk ke Timbalan Pendakwa Raya *Investigation Papers Referred to the Deputy Public Prosecutor:*	**342** Kertas Siasatan *Investigation Papers*

Kes Pendakwaan / *Prosecution Case:* **5** Kes / *Cases*

146
Kompoun
Compounds

RM237,000
Kompaun Yang Telah Dibayar
Compound Paid



Perakuan Kelulusan/Perakuan Pendaftaran Kelengkapan
Equipment Certificate of Approval/Registration

- **Perakuan Pendaftaran Kelengkapan Elektrik:**
  Certificate of Registration for Electrical Appliances:

Pengilang: *Manufacturers:*	**37**	Baharu / *New*
	151	Pembaharuan / *Renewals*
Pengimport: *Importers:*	**266**	Baharu / *New*
	612	Pembaharuan / *Renewals*

- **Perakuan Kelulusan Kelengkapan Elektrik:**
  Electrical Equipment COA:

Pengilang: *Manufacturers:*	**1,205**	Baharu / *New*
	1,064	Pembaharuan / *Renewals*
Pengimport: *Importers:*	**9,169**	Baharu / *New*
	5,529	Pembaharuan / *Renewals*

- **Perakuan Kelulusan Gegasan, Perkakas dan Kelengkapan Gas:**
  Gas Fittings, Gas Appliances and Equipment COA:

1,392 **974** Baharu / *New* **418** Pembaharuan / *Renewals*

- **Perakuan Kelulusan Pemasang, Pengilang dan Pengimport Kelengkapan Gas** / *Gas COA for Manufacturers, Assemblers and Importers:*

174 **104** Baharu / *New* **70** Pembaharuan / *Renewals*

2,178 ATI & **2,012 ATO**

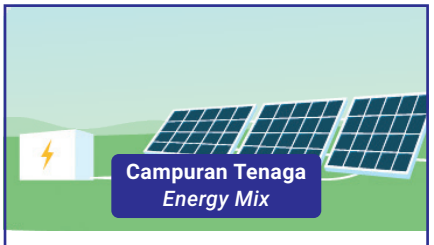
Keberterusan Bekalan Tenaga
Energy Security



Semenanjung *The Peninsula* ● 61 ● 14 ● 8 ● 7



Semenanjung *The Peninsula* ● 40% ● 37% ● 23%



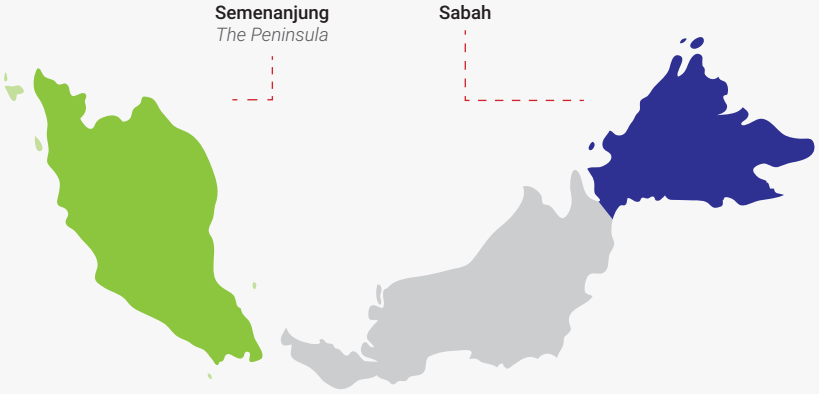
Semenanjung *The Peninsula* ● 55% ● 35% ● 10%

● Loji Solar Berskala Besar / *LSS* ● Gas ● Arang Batu *Coal* ● Hidro *Hydro* ● TBB *RE*

Daya Harap Pembekalan Tenaga dan Kualiti Perkhidmatan
Energy Supply Reliability and Service Quality

Permintaan dan Pembekalan
Demand and Supply

Jumlah Tenaga
Total Energy
133,613 GWj / *GWh*
Permintaan Puncak
Peak Demand
19,716 MW (11 Mei / *May*)
Kapasiti Terpasang
Installed Capacity
27,185 MW
Margin Rizab
Reserve Margin
33%



Jumlah Tenaga
Total Energy
7.286.9 GWj / *GWh*
Permintaan Puncak
Peak Demand
1.090.7 MW (15 November)
Kapasiti Terpasang
Installed Capacity
1,565.3 MW
Margin Rizab
Reserve Margin
10%

Campuran Penjanaan
Generation Mix

Semenanjung
The Peninsula
57.1% 36.5%
4.7% 1.7%

Sabah
84% 11%
3% 2%

Gas
Arang Batu *Coal*
Hidro *Hydro*
Diesel
Lain-lain *Others*



Pembekalan Gas Asli
Natural Gas Supply

PEGT
821,679,520.08 MMBtu

GMES
148,664,939.74 MMBtu

SHELL
4,254,298.00 MMBtu

PASB
1,868,589.00 MMBtu

SEC
3,024.02 MMBtu

SAIDI Elektrik
Electricity SAIDI

Semenanjung
The Peninsula
46.10
minit/pelanggan/tahun
minutes/customer/year

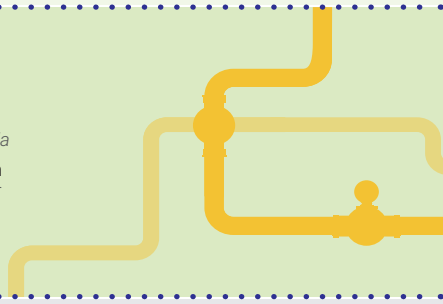


Sabah
266.35
minit/pelanggan/tahun
minutes/customer/year



SAIDI Gas Berpaip
Piped Gas SAIDI

Semenanjung / *The Peninsula*
0 minit/pelanggan/tahun
minutes/customer/year



Pematuhan GSL dan MSL TNB
TNB GSL and MSL Compliance

G GSL 99.84%
M MSL 99.63%

Pematuhan GSL dan MSL SESB
TNB GSL and MSL Compliance

G GSL 94.51%
M MSL 87.47%

Kecekapan Ekonomi dan Kemampuan
Economic Efficiency and Affordability

Kadar Purata Tarif Asas
Average Base Tariff Rate



Semenanjung *The Peninsula*
TNB **39.95** sen/kWj *sen/kWh*
KHTP NUR **37.69** sen/kWj *sen/kWh*



Sabah dan Labuan *Sabah and Labuan*
SESB **34.52** sen/kWj *sen/kWh*

Purata Tarif Asas bagi Penggunaan Kemudahan Gas
Average Base Tariff for the Usage of Gas Facilities

RGTSU	RGTP	PGB	GMD
3.455	3.165	1.063	1.573
RM/GJ/hari *RM/GJ/day*	RM/GJ/hari *RM/GJ/day*	RM/GJ/hari *RM/GJ/day*	RM/GJ/hari *RM/GJ/day*

Pecahan Langganan GET
Breakdown of GET Subscriptions



Pengguna Industri *Industrial Consumers* | Pengguna Komersial *Commercial Consumers* | Pengguna Domestik *Domestic Consumers*

Kemampanan Tenaga
Energy Sustainability

Jumlah Kapasiti NEM 3.0 yang Telah Dimohon
Total Capacity of NEM 3.0 Applied

NEM Rakyat
150 MW

NEM GoMEn
49.93 MW

NEM NOVA
799.17 MW

NEM 2.0
467.39 MW

Kapasiti Ditawarkan Melalui CGPP
Capacity Offered through CGPP

800 MW

Intensiti Tenaga Elektrik
Electricity Intensity

Semenanjung / ***The Peninsula***
0.0933 GWj/RM juta / *GWh/RM Million*

Sabah
0.0618 GWj/RM juta / *GWh/RM Million*

Penjimatan Tenaga Tahunan PPTEC
PPTEC Annual Energy Savings

Industri *Industrial*	Komersial *Commercial*	Bangunan Kerajaan *Government Facilities*
1,961.52 GWj / *GWh*	287.13 GWj / *GWh*	146.18 GWj / *GWh*

Pematuhan PPTEC
PPTEC Compliance

1,516 Pepasangan Installations

Penjimatan Elektrik NEEAP
NEEAP Electricity Savings

5.87% (8,625 GWj / *GWh*) (RM2.166 bilion / *billion*)

Penjimatan Program SAVE 3.0
SAVE 3.0 Programme Savings

324
GWj / *GWh*

Kualiti Kawal Selia dan Pelaksanaan Perkhidmatan
Regulatory Quality and Service Delivery

Pengurusan Aduan
Complaints Management

Diterima: *Received:* **1,579** Aduan Complaints

Diselesaikan: *Resolved:* **1,480** Aduan Complaints

Tahap Kepuasan Pelanggan ST
The Commission's CSI



92.64%

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Management Team

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Corporate House of the Energy Commission

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Energy Commission in the Media



Visi
Vision

Ke Arah Sebuah Badan Kawal Selia Tenaga Bertaraf Dunia Menjelang 2026

Towards A World Class Energy Regulator by 2026

Misi
Mission

Suruhanjaya Tenaga berazam untuk mengimbangi keperluan pengguna dan pembekal tenaga bagi memastikan pembekalan yang selamat, berterusan, dan berdaya harap, meningkatkan kecekapan ekonomi dan kemampuan, melindungi kepentingan awam, dan menggalakkan pembangunan ekonomi dan pasaran kompetitif dalam persekitaran yang lestari.

The Energy Commission aims to balance the needs of consumers and providers of energy to ensure safe, secure and reliable supply, enhanced economic efficiency and affordability, protect public interest, and foster economic development and competitive markets in an environmentally sustainable manner.

Nilai Teras
Core Values



Profesionalisme
Professionalism



Integriti
Integrity



Kecemerlangan
Excellence



Ketulusan dan Kesaksamaan
Sense of Fairness and Fairplay

Mengenai Suruhanjaya Tenaga

About the Energy Commission

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001, Suruhanjaya Tenaga (ST) bertanggungjawab mengawal selia sektor tenaga, khususnya industri pembekalan elektrik dan gas berpaip di Semenanjung dan Sabah.

Mengambil alih peranan Jabatan Bekalan Elektrik dan Gas, ST mula beroperasi sepenuhnya pada 1 Januari 2002. Fokus utama ST ialah bekalan elektrik dan gas yang berdaya harap, kos yang munasabah dan selamat digunakan.

Peranan ST terbahagi kepada tiga (3) iaitu Kawal Selia Ekonomi, Kawal Selia Teknikal dan Peraturan Keselamatan.

A statutory body established under the Energy Commission Act 2001, the Energy Commission (the Commission) is responsible for regulating the energy sector, specifically the electricity and piped gas supply industries in the Peninsula and Sabah.

Taking over the role of the Department of Electricity and Gas Supply, the Commission started its operations on 1 January 2002. The main focus of the Commission is the reliability of electricity and gas supply, reasonable costs and safety.

The roles of the Energy Commission are divided into three (3), namely Economic Regulation, Technical Regulation and Safety Regulation.



Kawal Selia Ekonomi

Economic Regulation

Untuk menggalakkan keekonomian dalam penjanaan, penghantaran, pengagihan, pembekalan dan penggunaan elektrik dan dalam retikulasi dan penggunaan gas; menggalakkan persaingan; membolehkan pengendalian pasaran yang adil dan cekap dan mencegah penyalahgunaan monopoli atau kuasa pasaran dalam industri elektrik dan gas berpaip.

To promote economy in the generation, transmission, distribution, supply and use of electricity and in the reticulation and use of gas; promote competition; enable fair and efficient market conduct and prevent the misuse of monopoly or market power in the electricity and piped gas industries.



Kawal Selia Teknikal

Technical Regulation

Untuk memastikan keselamatan, daya harap, kecekapan dan kualiti bekalan dan perkhidmatan dalam industri elektrik dan bekalan gas berpaip.

To ensure security, reliability, efficiency and quality of supply and services in the electricity and piped gas supply industries.



Peraturan Keselamatan

Safety Regulation

Untuk melindungi industri, pengguna dan orang awam dari bahaya yang timbul daripada penjanaan, penghantaran, pengagihan, pembekalan dan penggunaan elektrik, serta pengagihan, pembekalan dan penggunaan gas berpaip.

To protect the industry, consumers and public from dangers arising from the generation, transmission, distribution, supply and use of electricity and the distribution, supply and use of piped gas.

Fungsi dan Kuasa Suruhanjaya Tenaga

Functions and Powers of the Energy Commission

Suruhanjaya Tenaga hendaklah mempunyai segala fungsi yang dipertanggungkan ke atasnya di bawah undang-undang pembekalan tenaga dan hendaklah juga mempunyai fungsi-fungsi yang berikut:

The Energy Commission shall have all the functions imposed on it under the energy supply laws and shall also have the following functions:

- Menasihati Menteri tentang segala perkara yang berkenaan dengan objektif dasar kebangsaan bagi aktiviti pembekalan tenaga, pembekalan dan penggunaan elektrik, pembekalan gas melalui talian paip dan penggunaan gas.
  Advises Ministers on all matters concerning the national policy objectives for energy supply activities, the supply and use of electricity, the supply of gas through pipelines, and the use of gas.

- Mengawal selia tarif elektrik dan gas berpaip dan kualiti perkhidmatan pembekalan, serta menggalakkan persaingan dan mencegah penyalahgunaan monopoli atau kuasa pasaran.
  Regulates electricity and piped gas tariffs and the quality of supply services, as well as promotes competition and prevents the misuse of monopoly or market power.

- Menggalakkan amalan baik, serta penyelidikan, pembangunan dan inovasi dalam industri pembekalan elektrik dan gas berpaip.
  Promotes good practices, as well as research, development and innovation in the electricity and piped gas industries.

- Merancang dan membangunkan undang-undang, peraturan, kod, garis panduan dan program bagi memastikan keselamatan, pembangunan dan fungsi yang teratur dalam industri pembekalan elektrik dan gas berpaip.
  Plans and develops laws, regulations, rules, codes, guidelines and programmes for the safety, orderly development and functioning of the electricity and piped gas industries.

- Meluluskan lesen dan perakuan bagi pembekal elektrik dan gas berpaip, orang kompeten elektrik dan gas, pelatih, kontraktor, kelengkapan dan pemasangan, syarikat yang memberikan perkhidmatan tenaga dan pengurus tenaga.
  Licenses and certifies electricity and piped gas suppliers, competent electricity and gas personnel, training providers, contractors, equipment and installations, energy service companies and energy managers.

- Memantau dan mengaudit prestasi dan pematuhan pembekal yang berlesen dan bertauliah, pembekal perkhidmatan, pemasangan, pengimport kelengkapan, pengeluar dan penjual.
  Monitors and audits performance and compliance of licensed and certified suppliers, service providers, installations, equipment importers, manufacturers and retailers.

- Menyiasat aduan, kemalangan, kesalahan dan isu industri; dan menguatkuasakan pematuhan.
  Investigates complaints, accidents, offences and industry issues; and enforces compliance.

Anggota Suruhanjaya Tenaga

Energy Commission Members

TUAN MOHAMMED RASHDAN MOHD YUSOF
Pengerusi
Chairman
Dilantik pada 15 Februari 2023
Appointed on 15 February 2023

DATO' IR. TS. ABDUL RAZIB DAWOOD
Ketua Pegawai Eksekutif
Chief Executive Officer

DATO' MOHAMAD RAZIF HAJI ABD MUBIN
Dilantik pada 20 April 2022
Appointed on 20 April 2022

YM RAJA AZURA RAJA MAHAYUDDIN
Dilantik pada 15 Februari 2023
Appointed on 15 February 2023

DR. AFIZA IDRIS
Dilantik pada 14 Ogos 2023
Appointed on 14 August 2023

DATUK DARRYL GOON SIEW CHYE
Dilantik pada 15 Februari 2023
Appointed on 15 February 2023

TUAN SAIPOLYAZAN MAT YUSOP
Dilantik pada 15 Februari 2023
Appointed on 15 February 2023

TUAN DELAKAN RATHA KRISNAK
Dilantik pada 15 Februari 2023
Appointed on 15 February 2023



DATUK SERI IR. AZMAN MOHD

Tamat Perkhidmatan pada
24 November 2023
Concluded Service on 24 November 2023

DATO' DR. HALIM MAN

Tamat Perkhidmatan pada
30 September 2023
Concluded Service on 30 September 2023

DATO' ANIS RIZANA MOHD ZAINUDIN @ MOHD ZAINUDDIN

Tamat Perkhidmatan pada
30 September 2023
Concluded Service on 30 September 2023

TUAN MOHD SUKRI MAT JUSOH

Tamat Perkhidmatan pada
1 Mei 2023
Concluded Service on 1 May 2023

DATUK ADNAN SEMAN @ ABDULLAH

Tamat Perkhidmatan pada
14 Februari 2023
Concluded Service on 14 February 2023

YB SENATOR IR. TS. KHAIRIL NIZAM KHIRUDIN

Tamat Perkhidmatan pada
14 Februari 2023
Concluded Service on 14 February 2023

DATO' IR. DR. SHAIK HUSSEIN MYDIN

Tamat Perkhidmatan pada
14 Februari 2023
Concluded Service on 14 February 2023

DATO' AZIAN OSMAN

Pengerusi
Chairman

Tamat Perkhidmatan pada
14 Februari 2023
Concluded Service on 14 February 2023



Mesyuarat Suruhanjaya Tenaga 2023

Energy Commission Meetings 2023

Anggota Suruhanjaya Tenaga telah bermesyuarat sebanyak 14 kali sepanjang 2023 bagi memastikan tugas dan fungsi kawal selia aktiviti pembekalan tenaga dilaksanakan mengikut kehendak undang-undang. Mesyuarat Khas Suruhanjaya Tenaga juga telah diadakan sebanyak enam (6) kali pada 2023.

The Energy Commission members held a total of 14 meetings throughout 2023 to ensure the tasks and regulatory functions of energy supply activities are carried out in accordance with legal requirements. The Energy Commission also held six (6) Special Meetings in 2023.

Suruhanjaya Tenaga mempunyai enam (6) Jawatankuasa, iaitu Jawatankuasa Bersama Pelesenan (Pengurusan dan Suruhanjaya Tenaga), Jawatankuasa Kewangan dan Tender, Jawatankuasa Nominasi, Remunerasi dan Prestasi, Jawatankuasa Audit, Jawatankuasa Integriti serta Jawatankuasa Teknikal.

The Energy Commission has six (6) committees, namely the Licensing Committee (Management and Energy Commission), the Financial and Tender Committee, the Nomination, Remuneration and Performance Committee, the Audit Committee, the Integrity Committee, and the Technical Committee.

Jumlah Mesyuarat Suruhanjaya Tenaga dan Jawatankuasa Suruhanjaya Tenaga 2023

Total of Energy Commission and Energy Commission Committees' Meetings 2023

Bil. *No.*	**Mesyaurat** *Meetings*	**Bilangan Mesyuarat** *Number of Meetings*
1	**Mesyuarat Suruhanjaya Tenaga** *Energy Commission Meetings*	14
2	**Mesyuarat Khas Suruhanjaya Tenaga** *Energy Commission Special Meetings*	6
3	**Mesyuarat Jawatankuasa Bersama Pelesenan (Pengurusan dan Suruhanjaya Tenaga)** *Energy Commission Licensing Committee (Management and Energy Commission) Meetings*	9
4	**Mesyuarat Jawatankuasa Kewangan dan Tender Suruhanjaya Tenaga** *Energy Commission Financial and Tender Committee Meetings*	8
5	**Mesyuarat Jawatankuasa Nominasi, Remunerasi dan Prestasi** *Energy Commission Nomination, Remuneration and Performance Committee Meetings*	6
6	**Mesyuarat Jawatankuasa Audit Suruhanjaya Tenaga** *Energy Commission Audit Committee Meetings*	2
7	**Mesyuarat Khas Jawatankuasa Audit Suruhanjaya Tenaga** *Energy Commission Special Audit Committee Meeting*	1
8	**Mesyuarat Jawatankuasa Integriti Suruhanjaya Tenaga** *Energy Commission Integrity Committee Meetings*	3
9	**Mesyuarat Jawatankuasa Teknikal Suruhanjaya Tenaga** *Energy Commission Technical Committee Meetings*	3

Mesyuarat Suruhanjaya Tenaga
Energy Commission Meetings

JANUARI *JANUARY*	MAC *MARCH*	APRIL *APRIL*	MEI *MAY*	JUN *JUNE*	JULAI *JULY*	OGOS *AUGUST*	SEPTEMBER *SEPTEMBER*	OKTOBER *OCTOBER*	NOVEMBER *NOVEMBER*	DISEMBER *DECEMBER*
19	10, 22	19	29	27	28	30	29	17	2, 23	15, 19

Mesyuarat Khas Suruhanjaya Tenaga
Energy Commission Special Meetings

JANUARI *JANUARY*	MAC *MARCH*	JUN *JUNE*	OKTOBER *OCTOBER*	NOVEMBER *NOVEMBER*
26	24	9	17, 27	9

Mesyuarat Jawatankuasa Bersama Pelesenan (Pengurusan dan Suruhanjaya Tenaga) (JKBP)
Licensing Committee Meetings (Management and the Energy Commission)

JANUARI *JANUARY*	APRIL *APRIL*	MEI *MAY*	JUN *JUNE*	JULAI *JULY*	OGOS *AUGUST*	SEPTEMBER *SEPTEMBER*	OKTOBER *OCTOBER*	NOVEMBER *NOVEMBER*
17	13	18	20	20	22	19	26	20

Mesyuarat Jawatankuasa Kewangan dan Tender Suruhanjaya Tenaga (JKKT)
Energy Commission Financial and Tender Committee Meetings

APRIL *APRIL*	JUN *JUNE*	JULAI *JULY*	OGOS *AUGUST*	OKTOBER *OCTOBER*	NOVEMBER *NOVEMBER*	DISEMBER *DECEMBER*
12	26	17, 25	25	12	21	15

Mesyuarat Nominasi, Remunerasi dan Prestasi Suruhanjaya Tenaga (NRP)
Energy Commission Nomination, Remuneration and Performance Committee Meetings

JUN *JUNE*	JULAI *JULY*	OGOS *AUGUST*	OKTOBER *OCTOBER*	DISEMBER *DECEMBER*
22	24	21	13, 25	11

Mesyuarat Jawatankuasa Audit Suruhanjaya Tenaga (JKA)
Energy Commission Audit Committee Meetings

JUN *JUNE*	SEPTEMBER *SEPTEMBER*
13	14

Mesyuarat Khas Jawatankuasa Audit Suruhanjaya Tenaga (JKA)
Energy Commission Special Audit Committee Meeting

JUN *JUNE*
26

Mesyuarat Jawatankuasa Integriti Suruhanjaya Tenaga (JKI)
Energy Commission Integrity Committee Meetings

JUN *JUNE*	SEPTEMBER *SEPTEMBER*	NOVEMBER *NOVEMBER*
12	14	21

Mesyuarat Jawatankuasa Teknikal Suruhanjaya Tenaga (JKT)
Energy Commission Technical Committee Meetings

MEI *MAY*	JULAI *JULY*	OKTOBER *OCTOBER*
11	13	11

Pengurusan Tertinggi

Management Team



Dari kiri ke kanan
From left to right

DATO' IR. TS. ABDUL RAZIB DAWOOD
Ketua Pegawai Eksekutif
Chief Executive Officer

IR. ABDUL RAHIM IBRAHIM
Ketua Pegawai Operasi
Chief Operating Officer
Tamat Perkhidmatan pada 18 Oktober 2023
Concluded Service on 18 October 2023

IR. ROSLEE ESMAN
Pengarah Perancangan dan Pembangunan Industri
Director of Industry Planning and Development

NURHAFIZA MOHAMED HASAN
Pengarah Kawal Selia Keselamatan
Director of Safety Regulation

MOHD ELMI ANAS
Pengarah Operasi Industri
Director of Industry Operations



Dari kiri ke kanan
From left to right

MARLINDA MOHD ROSLI
Pengarah Kawal Selia Ekonomi
Director of Economic Regulation

KAUTHAR MOHD YUSOF
Pengarah Perkhidmatan Korporat
Director of Corporate Services

KHAIRUL NIZAM MOHD KAMAL
Pengarah (Memangku) Undang-undang
Director (Acting) Legal Services
Dilantik pada 1 Ogos 2023
Appointed on 1 August 2023

AHMAD RAFDI ENDUT
Pengarah Perancangan dan Komunikasi Strategik
Director of Strategic Planning and Communication

IR. MD ZAKUAN IBRAHIM
Pengarah Penguatkuasaan dan Operasi Kawasan
Director of Enforcement and Regional Operations
Tamat Perkhidmatan pada 13 November 2023
Concluded Service on 13 November 2023

Corporate House Suruhanjaya Tenaga

Corporate House of the Energy Commission

VISI
Vision

Ke Arah Sebuah Badan Kawal Selia Tenaga Bertaraf Dunia Menjelang 2026

Towards A World Class Energy Regulator by 2026

MISI
Mission

Suruhanjaya Tenaga berazam untuk mengimbangi keperluan pengguna dan pembekal tenaga bagi memastikan pembekalan yang selamat, berterusan, dan berdaya harap, meningkatkan kecekapan ekonomi dan kemampuan, melindungi kepentingan awam, dan menggalakkan pembangunan ekonomi dan pasaran kompetitif dalam persekitaran yang lestari.

The Energy Commission aims to balance the needs of consumers and providers of energy to ensure safe, secure and reliable supply, enhanced economic efficiency and affordability, protect public interest, and foster economic development and competitive markets in an environmentally sustainable manner.

5 TERAS STRATEGIK
5 STRATEGIC PILLARS

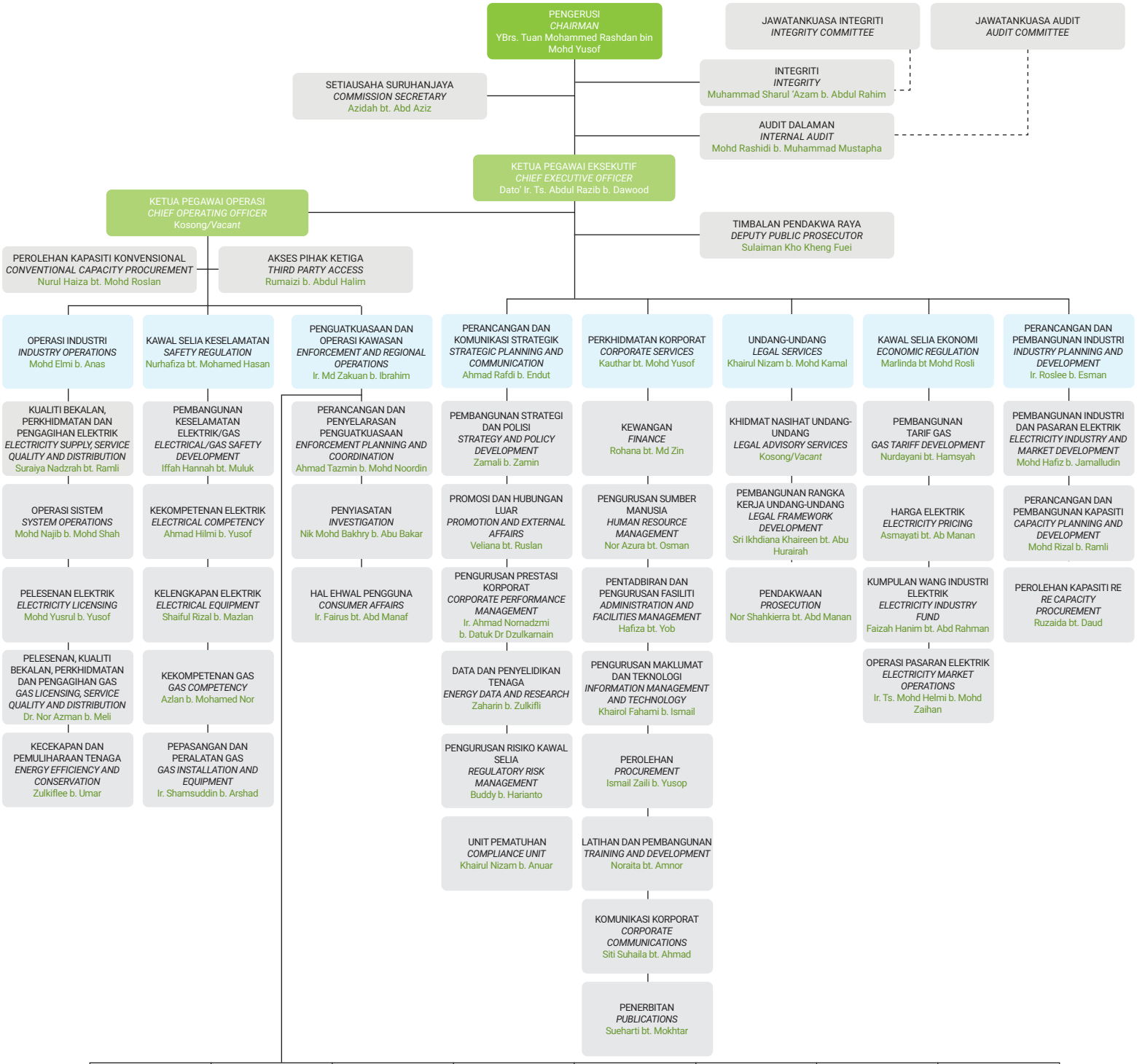
Keselamatan *Safety*	Keberterusan Bekalan Tenaga *Energy Security*	Daya Harap Pembekalan Tenaga dan Kualiti Perkhidmatan *Energy Reliable Supply and Service Quality*	Kecekapan Ekonomi dan Kemampuan *Economic Efficiency and Affordability*	Kemampanan Tenaga *Energy Sustainability*
SASARAN *GOAL*				
Melindungi pengguna dan industri dari bahaya yang timbul dari aktiviti berkaitan pembekalan elektrik dan gas berpaip. *To protect the public and industries from the dangers arising from the activities related to the supply of electricity and piped gas.*	**Memastikan keberterusan bekalan tenaga bagi memenuhi permintaan semasa dan masa hadapan.** *To ensure security of energy supply to meet current and future demand.*	**Memastikan pembekalan yang berdaya harap dengan kualiti perkhidmatan yang cemerlang.** *To ensure continuous supply with excellent service quality.*	**Memastikan kecekapan ekonomi industri elektrik dan gas berpaip di samping mempromosikan industri yang adil, cekap dan telus.** *To ensure both the electricity and piped gas industries are economically efficient while promoting a fair, efficient and transparent industry.*	**Memastikan kemampanan bekalan tenaga untuk generasi akan datang dan berpegang teguh kepada amalan tadbir urus yang baik.** *To ensure sustainable energy for future generation and upholding good governance.*

2 PEMBOLEH UPAYA
2 ENABLERS

Kualiti Kawal Selia dan Pelaksanaan Perkhidmatan *Regulatory Quality and Service Delivery*	Pembangunan Kapasiti dan Keupayaan *Capacity and Capability Building*
SASARAN *GOAL*	
Mempertingkatkan kepercayaan pemegang taruh dengan pengukuhan rangka kerja kawal selia secara berterusan dan penyediaan penyampaian perkhidmatan yang cekap. *To enhance stakeholders' trust by continuously strengthening regulatory framework and provide efficient service delivery.*	**Mempunyai tenaga kerja dengan kompetensi, keupayaan, motivasi dan keterlibatan di tahap tinggi.** *To have highly competent, capable, motivated and engaged staff.*

Struktur Organisasi

Organisation Structure



Setahun Yang Lalu – 2023

2023 – A Year That Was

31 JAN *JAN*



Libat Urus bersama Persatuan Insurans Am Malaysia (PIAM) dan Malaysian Takaful Association (MTA) melalui Taklimat Keperluan Pematuhan ST

Engagement with the General Insurance Association of Malaysia (PIAM) and Malaysian Takaful Association (MTA) through the Commission's Compliance Requirements Briefing



14 FEB *FEB*



Bengkel Pembekalan Gas Sektor Elektrik Di Semenanjung

Workshop on Gas Supply in the Electricity Sector in the Peninsula

20 FEB *FEB*



Majlis Perhimpunan Bulanan ST

The Commission's Monthly Assembly Meeting

28 FEB *FEB*



Kunjungan Hormat ST ke Seksyen Pihak Berkuasa Tempatan, Pejabat SUK Negeri Selangor

Courtesy Visit by the Commission to the Local Authority Section, Selangor State Secretary's Office (SUK)

08 MAC *MAR*



Kunjungan Hormat ST ke Pusat Khidmat Kontraktor, Kementerian Pembangunan Usahawan dan Koperasi (KUSKOP), Putrajaya

Courtesy Visit by the Commission to the Contractor Service Centre, Ministry of Entrepreneur Development and Cooperatives (KUSKOP), Putrajaya

09 MAC *MAR*



iRIST Overview

16 MAC *MAR*



Mesyuarat Jawatankuasa Kod Grid Semenanjung Malaysia Penggal 2023-2025
Meeting of the Peninsular Malaysia Grid Code Committee Term 2023-2025

21 MAC *MAR*



Kunjungan Hormat ST ke Jabatan Wilayah Persekutuan, Putrajaya
Courtesy Visit by the Commission to the Federal Territories Department, Putrajaya

07 APR *APR*



Program Bubur Lambuk
Bubur Lambuk Programme

11 MEI *MAY*



ASEAN Forum on Coal (AFOC) Council Meeting

22 MEI *MAY*



Sesi Libat Urus dengan Pemain Industri Berhubung Rang Undang-Undang Bekalan Elektrik (Pindaan) 2023
Engagement Session with Industry Players on the Electricity Supply (Amendment) Bill 2023

23 MEI *MAY*



Seminar Pematuhan Perundangan ST Dari Perspektif Risiko, Pengunderaitan & Perniagaan
The Commission's Compliance Legislation Seminar from Risk, Underwriting & Business Perspective

23 MEI *MAY*



Kunjungan Hormat ST ke Bahagian Pendaftaran Kontrakor, CIDB, Kuala Lumpur
Courtesy Visit by the Commission to the Contractor Registration Division, CIDB, Kuala Lumpur

24-26 MEI *MAY*



14th ASEAN Energy Regulators' Network (AERN) and its Associated Meetings

25 MEI *MAY*



Pembentangan kertas di Mesyuarat Jawatankuasa Tetap Kerajaan Tempatan Negeri Selangor Bil. 2/2023 berkaitan Pematuhan Keperluan ST
Paper Presentation at the Selangor State Local Government Permanent Committee Meeting No. 2/2023 on Compliance with the Commission's Requirements

29-31 MEI *MAY*



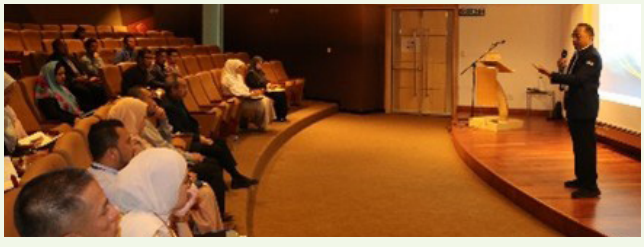
Bengkel *Regulatory Impact Analysis* (RIA) Bersama Perbadanan Produktiviti Malaysia
Regulatory Impact Analysis (RIA) Workshop with the Malaysia Productivity Corporation

01 JUN *JUNE*



Kunjungan Hormat ST ke Bahagian Kerajaan Tempatan, Pejabat SUK Negeri Pulau Pinang
Courtesy Visit by the Commission to the Local Government Division, Penang State Secretary's Office (SUK)

09 JUN *JUNE*



Sesi Induksi Warga Kerja Baharu
New Employee Induction Session

13 JUN *JUNE*



3rd ST-EMA Bilateral Dialogue

19-23 JUN *JUNE*



41st ASEAN Senior Officials Meeting on Energy (SOME)

25 JUN *JUNE*



Kunjungan Hormat ST ke Cawangan Kejuruteraan Elektrik, Jabatan Kerja Raya (JKR) Kuala Lumpur
Courtesy Visit by the Commission to the Electrical Engineering Branch, Public Works Department (JKR), Kuala Lumpur

27 JUN *JUNE*



Sesi Taklimat dan Dialog Keperluan Pematuhan Keperluan ST bersama Jabatan Wilayah Persekutuan (JWP), Putrajaya
Briefing and Dialogue Session on the Commission's Requirements Compliance with the Federal Territories Department (JWP), Putrajaya

04 JUL *JULY*



Lawatan Sabah Electricity Sdn. Bhd. (SESB)
Visit to Sabah Electricity Sdn. Bhd. (SESB)

06 JUL *JULY*



Program *Coffee With COO*
Coffee With COO Programme

11 JUL *JULY*



Majlis Perhimpunan Bulanan ST
The Commission's Monthly Assembly Meeting

21 OGOS *AUG*



Kunjungan Hormat Bahagian Kerajaan Tempatan, Pejabat SUK Negeri Pulau Pinang ke Ibu Pejabat ST, Putrajaya
Courtesy Visit by the Local Government Division, Penang State Secretary's Office (SUK) to the Commission's Headquarters, Putrajaya

22-26 OGOS *AUG*



41st ASEAN Ministers on Energy Meeting (AMEM) and its Associated Meetings

23-25 OGOS *AUG*



Bengkel Rang Undang-Undang Bekalan Elektrik (Pindaan) 2023, Peraturan-Peraturan Elektrik (Pindaan) 2023 Dan Peraturan-Peraturan Elektrik (Pelesenan) 2023
Workshop on Electricity Supply (Amendment) Bill 2023, Electricity Regulations (Amendment) 2023, and Electricity Regulations (Licensing) 2023

30 OGOS *AUG*



Pertandingan Deko Lobi
Lobby Decoration Competition

05 SEPT *SEPT*



Sambutan Merdeka
Independence Day Celebration

06 SEPT
SEPT



Kunjungan Hormat ST ke Bahagian Kerajaan Tempatan, Pejabat SUK Negeri Johor
Courtesy Visit by the Commission to the Local Government Division, Johor State Secretary's Office (SUK)

14 SEPT
SEPT



Bengkel Pematuhan Keperluan ST bersama Bahagian Kerajaan Tempatan (BKT), Pejabat SUK Negeri Pulau Pinang
The Commission's Requirements Compliance Workshop with the Local Government Division (BKT), Penang State Secretary's Office (SUK)

10-11 OKT
OCT



Pembentangan Rang Undang-Undang Kecekapan dan Konservasi Tenaga 2023
Presentation on the Energy Efficiency and Conservation Bill 2023

16 OKT
OCT



Sesi *send-off* Ketua Pegawai Operasi ST
Send-off Session for the Commission's Chief Operations Officer

17 OKT
OCT



Lawatan Menteri
Ministerial Visit

22 OKT
OCT



Bengkel Pematuhan Keperluan ST bersama Bahagian Kerajaan Tempatan (BKT), Pejabat SUK Negeri Johor
The Commission's Requirements Compliance Workshop with the Local Government Division (BKT), Johor State Secretary's Office (SUK)

30 OKT *OCT*



Perlawanan bola sepak persahabatan dengan Jabatan Peguam Negara
Friendly Football Match with the Attorney General's Chambers

30-31 OKT *OCT*



Bengkel Semakan Seksyen 53 Akta Bekalan Elektrik 1990 [Akta 447] Dan Seksyen 39 Akta Bekalan Gas 1993 [Akta 501]
Workshop on Review of Section 53 of the Electricity Supply Act 1990 [Act 447] and Section 39 of the Gas Supply Act 1993 [Act 501]

31 OKT *OCT*



Sesi Libat Urus Bersama British High Commission dan Office of Gas and Electricity Markets (Ofgem)
Engagement Session with the British High Commission and the Office of Gas and Electricity Markets (Ofgem)

01-03 NOV *NOV*



Bengkel Peraturan-Peraturan Kecekapan dan Konservasi Tenaga 2024
Workshop on Energy Efficiency and Conservation Regulations 2024

10 NOV *NOV*



Majlis Perhimpunan Bulanan ST
The Commission's Monthly Assembly Meeting

16-17 NOV *NOV*



6th Asia Pacific Energy Regulatory (APER) Forum

20 NOV *NOV*



Hari Terbuka Jabatan Perkhidmatan Korporat
Open Day by the Corporate Services Department

22 NOV *NOV*



Panel Perunding Tenaga
Energy Consultative Panel

12 DIS *DEC*



ISO Retreat

14 DIS *DEC*



EE Challenge 2023

18 DIS *DEC*



Sesi Penyerahan Cadangan Penetapan Tarif Asas di Sabah, Labuan dan Kulim Hi-Tech Park (KHTP)
Session on Proposal Submission for Base Tariff Setting in Sabah, Labuan and Kulim Hi-Tech Park (KHTP)

Suruhanjaya Tenaga di Media

Energy Commission in the Media

Dalam usaha meningkatkan kesedaran orang ramai mengenai ST dan peranannya sebagai badan kawal selia sektor tenaga negara serta isu-isu berkaitan sektor tenaga, ST meneruskan usaha promosi melalui pelbagai saluran media massa termasuk saluran TV, radio, media cetak dan media dalam talian.

Kenyataan Media

Sepanjang 2023, lebih 30 kenyataan media telah dikeluarkan dengan topik tumpuan bagi meningkatkan kesedaran orang ramai mengenai langkah-langkah keselamatan elektrik pada musim banjir dan perayaan, kepentingan untuk melantik orang kompeten bagi kerja-kerja elektrik, kesalahan dan implikasi kes-kes kecurian elektrik, operasi-operasi penguatkuasaan serta pengumuman terkini berkenaan program-program tenaga hijau.

Di samping itu, kenyataan media juga dikeluarkan bagi menyampaikan maklumat mengenai tarif elektrik dan gas berpaip, inisiatif-inisiatif baharu Kerajaan serta siasatan terhadap kes-kes kemalangan elektrik.

In an effort to increase public awareness about the Commission and its role as the country's regulator for the energy sector and energy-related issues, the Commission continues its promotional efforts through various mass media channels, including television, radio, print, and online media.

Media Statements

Throughout 2023, over 30 media statements were issued with a focus on increasing public awareness about electrical safety measures during flood and festive seasons, the importance of appointing competent persons for electrical works, the offences and implications of electrical theft cases, the enforcement operations and the latest announcements regarding green energy programmes.

In addition, media statements were also released to deliver information on electricity and piped gas tariffs, the Government's new initiatives and investigations into electrical accident cases.



Taklimat Media

Dalam usaha meningkatkan pemahaman pihak media berkenaan isu-isu semasa dalam sektor tenaga, tiga (3) sesi taklimat media telah diadakan termasuk sesi soal jawab berkenaan Program Tenaga Hijau Korporat (CGPP), sidang media di Majlis Pelancaran RoboST serta taklimat media berkenaan Pelarasan Tarif Elektrik di Semenanjung Bagi Tempoh Januari hingga Jun 2024.

Sesi-sesi taklimat media ini telah dihadiri oleh pelbagai media termasuk BERNAMA, The Edge, Sin Chew Daily, New Straits Times, Sinar Harian, Berita Harian, RTM, Malaysia Gazette, Utusan Malaysia, Malaysiakini, Oriental Daily News, Kwong Wah Daily, TV1 dan TV3.

Antara perkara yang diterangkan di dalam ketiga-tiga sesi taklimat media ini termasuklah berkenaaan intipati inisiatif Program CGPP oleh Kerajaan, inisiatif membudayakan dan menerapkan amalan keselamatan elektrik dan gas berpaip di kalangan orang ramai serta berkenaan pelarasan tarif elektrik di Semenanjung.

Media Briefings

In an effort to enhance media understanding of current issues in the energy sector, three (3) media briefing sessions were conducted. These included a Q&A session on the Corporate Green Power Programme (CGPP), a press conference at the RoboST Launch Event, and a media briefing on the Electricity Tariff Adjustment in the Peninsula for the period of January to June 2024.

These media briefing sessions were attended by various media outlets, including BERNAMA, The Edge, Sin Chew Daily, New Straits Times, Sinar Harian, Berita Harian, RTM, Malaysia Gazette, Utusan Malaysia, Malaysiakini, Oriental Daily News, Kwong Wah Daily, TV1, and TV3.

Among the topics covered in these sessions were the essence of the CGPP initiative by the Government, initiatives to promote and cultivate electrical and piped gas safety practices among the public, and details regarding the electricity tariff adjustments in the Peninsula.



18 April – Penerangan kepada media di sesi soal jawab berkenaan CGPP
18 April – Media briefing at the Q&A session on CGPP



8 Mei – Sidang Media berkenaan inisiatif ST dalam membudayakan dan menerapkan amalan keselamatan elektrik dan gas berpaip di Majlis Pelancaran RoboST
8 May – Press Conference on the Commission's initiatives in promoting and implementing electrical and piped gas safety practices at the RoboST Launch Event

Klip Akhbar

Newspaper Clippings





Md Zakuan (second left) handing out contribution and electrical safety information to residents during the programme in Sandakan.

Energy Commission implements Touchpoint programme in Sandakan

SANDAKAN: The Energy Commission (EC) has implemented the Touchpoint programme by inspecting and fixing the electrical wiring system of 17 houses, here on Friday.

EC Enforcement and Operations director Ir Md Zakuan Ibrahim said the Touchpoint programme is important in ensuring wiring systems and home appliances are safe and comply with the technical standard requirements set by EC.

"Community awareness about electrical safety is very

EC announces CGPP awards of 563MW to 22 solar producers



A tripartite power purchase agreement is expected to be signed between TNB, the selected solar producers and corporate customers whereby corporate customers will be able to purchase electricity at an agreed upon price. — AFP photo

32 KES NAHAS ELEKTRIK DILAPOR

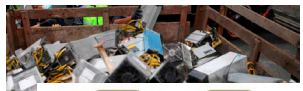
16 daripada kemalangan berlaku di rumah dan kilang mengakibatkan kematian: Suruhanjaya Tenaga

Jasin

Suruhanjaya Tenaga (ST) merekodkan 32 kes kemalangan elektrik di seluruh Semenanjung Malaysia dan Sabah pada tahun ini setakat 30 September lepas dengan 16 daripadanya membabitkan kehilangan nyawa.

Timbalan Pengarah Kanan Unit Hal Ehwal Pengguna, Jabatan Penguatkuasaan dan Operasi Kawasan ST Fairus Abd Manaf berkata lokasi kemalangan an-

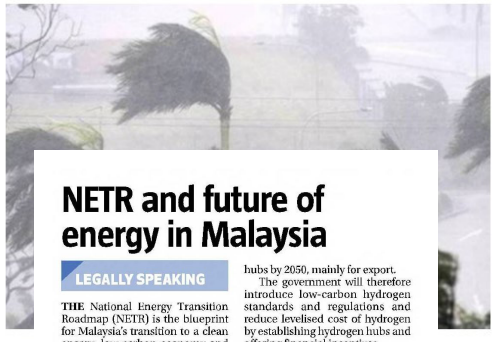
EC seizes 147 bitcoin machines



BERITA Follow > Nasional Follow

Monsun Timur Laut: Suruhanjaya Tenaga nasihat utamakan keselamatan elektrik dan gas

06 Oktober 2023 10:39pm Masa membaca: 4 minit



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HOME MALAYSIA SINGAPORE MONEY WORLD LIFE EA SHOWBIZ OPINION SPORTS TECHGADGETS WHAT YOU'

7/4/24, 11:21 PM EC chairman: Renewable energy export guideline

EC chairman: Renewable energy exp revealed in energy transition roadma

By Chester Tay & Reyanna Ng / theedgemalaysia.com

30 May 2023, 07:40 pm



Energy Commission chairman Mohd Rashdan Mohd Yusof (Photo by Shahrill Basri/The Edge)

KUALA LUMPUR (May 30): The government plans to release the National Energy Transition Roadmap, which contains more details on the country's renewable energy export guidelines and policies, tentatively around June, according to Energy Commission chairman Mohd Rashdan Mohd Yusof.

The roadmap will be announced by Economy Minister Rafizi Ramli, said Mohd Rashdan during the Affin Conference Series 2023 on Tuesday (May 30).

EC Offers Gas And Electricity Safety Tip For Balik Kampung



The Energy Commission has issued a safety advisory on precautions one can take ahead of the Hari Raya Aidilfitri celebration soon, the EC has called on the public to prioritise safety measures on matters pertaining to electricity and gas.

Tips on Electrical Safety include:

1. Make sure the electrical wiring at home is safe by: a. Test the Residual Current Device (PAB) by pressing the 'T' test button at least once a month. If the PAB works well, it will trigger and the electricity supply will be cut off immediately; b. Get the services of an electrical contractor registered with ST to replace the PAB if it does not work or is damaged; c. Check the cables of electrical equipment and ensure they are not torn or exposed.

2. Use approved electrical equipment and decorative lights as well as those that have the ST-SIRIM safety label.



Commission forms rce to monitor electri in Sabah

NETR and future of energy in Malaysia

LEGALLY SPEAKING

THE National Energy Transition Roadmap (NETR) is the blueprint for Malaysia's transition to a clean energy, low-carbon economy and is divided into two parts.

Part 1, announced in July, stipulates the 10 flagship catalyst projects and initiatives based on six energy transition levers – energy efficiency (EE); renewable energy (RE); hydrogen; bioenergy; green mobility; and carbon capture, utilisation and storage (CCUS).

Part 2, which was announced a month later, expanded on the six hubs by 2050, mainly for export.

The government will therefore introduce low-carbon hydrogen standards and regulations and reduce levelised cost of hydrogen by establishing hydrogen hubs and offering financial incentives.

Lever 4: Bioenergy

Bioenergy is expected to play a key role in the energy transition framework as a carbon-neutral energy source, especially using agriculture and municipal-related waste. The government aims to expand the country's biorefinery capacity to 3.5 billion litres by 2050 and increase biomass and biogas



Energy Commission sends report on freak electrocution incident to AG's chambers

MALAYSIA

Energy Commission says has no power to increase Corporate Green Power Programme's quota



The Energy Commission does not have the power to unilaterally increase quotas and/or originate or make changes to any policy direction pertaining

EC to make power programme accessible

ECONOMY

Wednesday, 19 Apr 2023



Only new solar power plant projects with an export capacity from five MW to 30 MW are eligible to participate in the CGPP, said Rahim.

PUTRAJAYA: The Energy Commission (EC) says it has capped the solar power plant export capa

30 megawatt (MW) under the corporate green power programme (CGPP) to expand the reach

BURGER: 2 MAUT KENA KARAN

ELEKTRIK R AKIBAT EL 'LUKA'

disahkan meninggal nis oleh petugas ambu- di Hospital Raja Permisuri Bainun (HRPB). Suruhanjaya Tenaga berta, tindakan undang-un- ng akan diambil sekira- nya didapati berlaku kecuaian atau kesalahan yang oleh ma- na-mana pihak yang ber- kenaan.

Suruhanjaya tun menggariskan beberg panduan keselamatg penggunaan elektrik untu rujukan pemilik, pengusa ha pemiagaan dan oran ramai, amnya memas tikan tiada sambunga elektrik secara haram da melantik kontraktor elek trik serta orang kompeta yang berdaftar dengan Su ruhanjaya Tenaga untu menjalankan kerja pendi waian elektrik.



Jangan gantung, tampal bahan kempen di tiang elektrik, pencawang

Jangan guna soket dengan kelengkapan elektrik berlebihan - ST

Berniaga 20/04/2023 07:30 MYT



Suruhanjaya Tenaga juga meminta orang ramai untuk tidak menggunakan telefon bimbit semasa ia sedang dicas. - Gambar ST

PUTRAJAYA: Suruhanjaya Tenaga (ST) menasihati orang ramai agar tidak menggunakan soket dengan kelengkapan elektrik yang berlebihan atau beban yang tinggi ketika melakukan persiapan menyambut Aidilfitri.

Berita Terkini

Tangki skid terb punca kebocora gas di Terminal Kargo KLIA

Polis sahkan ra mi@k 'Hafiz'

SG: Kerjasama MCMC-MDA ba manfaat sektor vertikal PKS tempatan

Edar dadah: Bu dipenjara 30 tah 12 sebatan

Arkib Negara gi jejak bahan arki luar negara

Energy Commission: 1,899 GW of green energy to be allocated under GET programme on Aug 11

By Syafiqah Salim / theedgemalaysia.com 10 Aug 2023, 08:00 pm Updated - 09:30 pm



KUALA LUMPUR (Aug 10): A total 1,899 GW of green energy is available for subscription when the green electricity tariff (GET) programme reopens on Friday (Aug 11), said the Energy Commission.

The new quota is applicable for a five-month contract period from Aug 1 to Dec 31, the regulator said in a statement on Thursday.

It urged interested applicants to subscribe early within the application window of 11am to 5pm on Friday, by logging into Tenaga Nasional Bhd's myTNB portal at www.myTNB.com.my.

1

Mengutamakan Keselamatan dan Penguatkuasaan

Prioritising Safety and Enforcement

51 **Prestasi Kemalangan Elektrik dan Gas Berpaip**
Electrical and Piped Gas Accident Performance

55 **Inisiatif Mempertingkatkan Tahap Keselamatan Elektrik dan Gas Berpaip**
Initiatives to Improve Electrical and Piped Gas Safety

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Improving Compliance with Regulations

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Enhancing the Number of Electrical and Gas Competent Persons

66 **Perakuan Kelulusan Kelengkapan Elektrik dan Peralatan Gas**
Certificates of Approval for Electrical Equipment and Gas Appliances

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Enhancing Enforcement Activities

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Main Highlights

Prestasi Kemalangan Elektrik dan Gas Berpaip

Electrical and Piped Gas Accident Performance

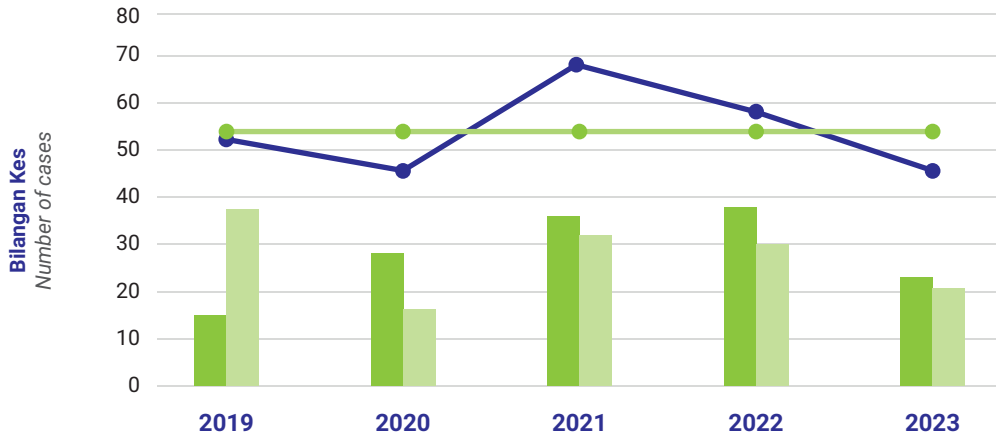
Statistik Kemalangan Elektrik

Sejak 2019, sebanyak 268 kes kemalangan elektrik dilaporkan dan disiasat oleh ST. Untuk 2023, kes kemalangan menurun kepada 44 kes (23 maut dan 21 tidak maut) berbanding 58 kes (29 maut dan 29 tidak maut) pada tahun sebelumnya. Analisis menunjukkan purata kemalangan elektrik sepanjang lima (5) tahun lalu ialah sebanyak 54 kes setahun.

Electrical Accident Statistics

Since 2019, a total of 268 cases of electrical accidents have been reported and investigated by the Commission. In 2023, the number of accidents decreased to 44 cases (23 fatal and 21 non-fatal) compared to 58 cases (29 fatal and 29 non-fatal) the previous year. Analysis showed that the average number of electrical accidents over the past five (5) years is 54 cases per year.

Statistik Kemalangan Elektrik, 2019–2023
Electrical Accident Statistics, 2019–2023



	2019	2020	2021	2022	2023
Maut *Fatal*	15	28	37	29	23
Tidak maut *Non-fatal*	37	17	32	29	21
Jumlah *Total*	52	45	69	58	44
Purata *Average*	54	54	54	54	54

Kadar Kemalangan Elektrik Mengikut Populasi

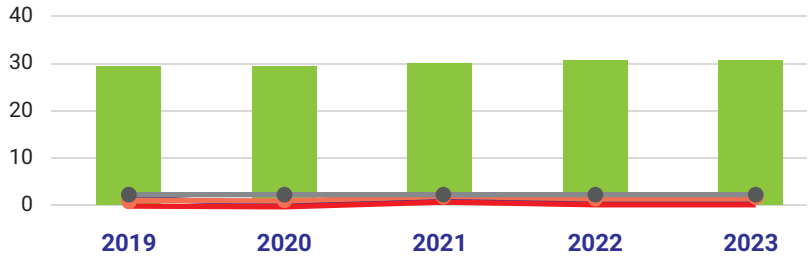
Populasi penduduk Malaysia menunjukkan pertambahan sebanyak 3.6% bagi tempoh 2019 hingga 2023. Bagaimanapun, purata kadar kes kemalangan elektrik setiap sejuta penduduk bagi tempoh lima (5) tahun sejak 2019 menunjukkan penurunan kepada 1.77, berbanding 1.86 yang dicatatkan untuk tempoh sama sejak 2018.

Electrical Accident Rate by Population

The population of Malaysia has shown an increase of 3.6% for the period from 2019 to 2023. However, the average rate of electrical accidents per one million population for the five (5) year period since 2019 has decreased to 1.77, compared to 1.86 recorded for the same period since 2018.

Kadar Kemalangan Per Populasi, Perbandingan Tempoh 5-Tahun

Accident Rate per Population: 5-year Comparison



	2019	2020	2021	2022	2023
Populasi Penduduk (juta) *Population (million)*	29.79	29.88	30.17	30.40	30.87
Tidak Maut (per sejuta penduduk) *Non-fatal (per million population)*	1.24	0.57	1.03	0.95	0.71
Maut (per sejuta penduduk) *Fatal (per million population)*	0.50	0.94	1.23	0.95	0.71
Kadar Kemalangan (per sejuta penduduk) *Accident Rate (per million population)*	1.75	1.51	2.25	1.91	1.43
Purata Kadar Kemalangan (per sejuta penduduk) *Average Accident Rate (per million population)*	1.77	1.77	1.77	1.77	1.77

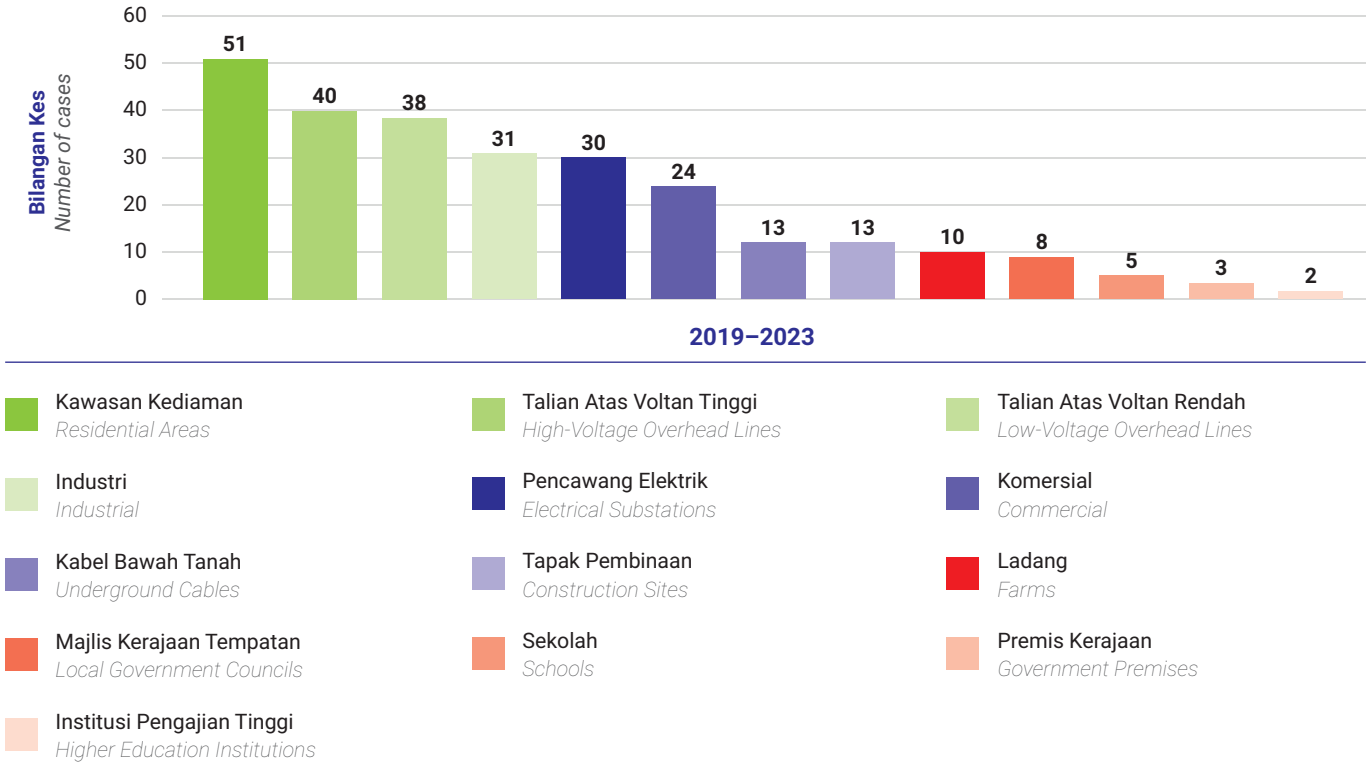
Lokasi Kemalangan Elektrik

Untuk 2023, kawasan kediaman merupakan lokasi tertinggi bagi kes kemalangan elektrik dengan 10 kes. Lokasi kedua tertinggi pula ialah industri dengan tujuh (7) kes, yang merupakan peningkatan 133% berbanding tiga (3) kes pada 2022. Ini diikuti oleh talian atas voltan tinggi dan tapak pembinaan, masing-masing dengan lima (5) kes. Oleh sebab lokasi kes tertinggi adalah melibatkan orang awam, kempen kesedaran keselamatan elektrik termasuk melalui seminar dan reruai pameran yang menyasarkan pendidikan kepada orang awam giat dijalankan. Tindakan mitigasi juga sedang dirangka bagi menangani kes-kes kemalangan industri.

Electrical Accident Locations

In 2023, residential areas were the highest location for electrical accidents, with 10 cases. The second-highest location was the industrial sector, with seven (7) cases, representing a 133% increase compared to three (3) cases in 2022. This was followed by high-voltage overhead lines and construction sites, each with five (5) cases. Since the highest accident location involves the general public, safety awareness campaigns, including seminars and exhibition booths targeting public education, are actively conducted. Mitigation measures are also being planned to address industrial accident cases.

Kemalangan Elektrik Mengikut Lokasi, 2019–2023
Electrical Accidents by Location, 2019–2023



Punca Kemalangan Elektrik

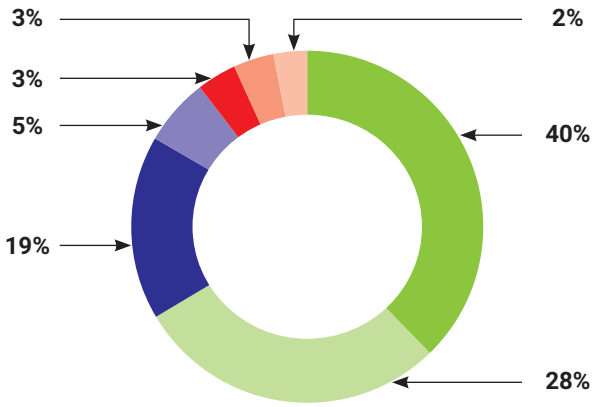
Punca kemalangan elektrik tertinggi pada 2023 adalah pemasangan/penyenggaraan tidak sempurna iaitu dengan 17 kes dan kedua tertinggi ialah aktiviti kerja orang awam berhampiran pepasangan elektrik dengan 11 kes. Bagaimanapun, kes kemalangan yang berpunca daripada pemasangan/penyenggaraan tidak sempurna ini menurun sebanyak 23% berbanding 2022. Punca ketiga tertinggi ialah prosedur kerja selamat tidak dipatuhi dengan enam (6) kes. ST akan terus menjalankan mitigasi kes kemalangan untuk mengurangkan kes-kes melibatkan pemasangan/ penyenggaraan tidak sempurna dan aktiviti kerja orang awam berhampiran pepasangan elektrik.

Causes of Electrical Accidents

The highest cause of electrical accidents in 2023 was improper installation/maintenance, with 17 cases, and the second highest was public work activities near electrical installations, with 11 cases. However, the number of accidents caused by improper installation/maintenance decreased by 23% compared to 2022. The third highest cause was non-compliance with safety procedures, with six (6) cases. The Commission will continue to carry out accident mitigation measures to reduce incidents related to improper installation/maintenance and public work activities near electrical installations.

Kemalangan Elektrik Mengikut Punca, 2019–2023

Electrical Accidents by Cause, 2019–2023



- Pemasangan/penyenggaraan tidak sempurna
  Improper installation/maintenance
- Aktiviti orang awam berhampiran pepasangan elektrik
  Public work activities near electrical installations
- Pencerobohan di pepasangan elektrik
  Trespassing at electrical installations
- Prosedur kerja selamat tidak dipatuhi
  Non-compliance with safe work procedures
- Kecacatan pada peralatan/perkakasan elektrik
  Defect in electrical equipment/hardware
- Salah guna sistem pendawaian/kelengkapan elektrik
  Misuse of wiring system/electrical appliances
- Punca-punca lain
  Other causes

Statistik Kemalangan Gas Berpaip

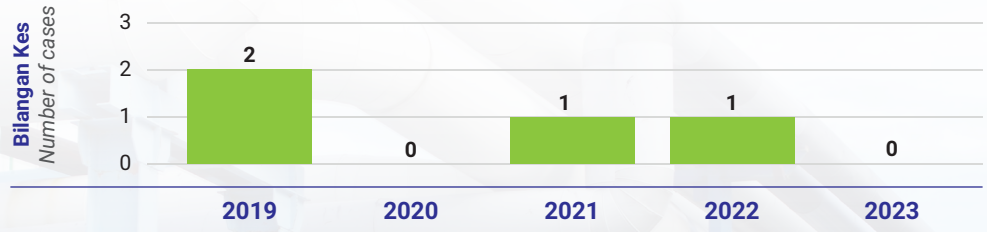
Untuk 2023, tiada kes kemalangan gas direkodkan, satu penambahbaikan berbanding satu (1) kes kemalangan yang direkodkan pada tahun sebelumnya. Untuk tempoh lima (5) tahun sejak 2019, sebanyak empat (4) kes kemalangan gas direkodkan.

Piped Gas Accident Statistics

In 2023, no gas accidents were recorded, an improvement compared to one (1) accident recorded in the previous year. Over the five (5) year period since 2019, a total of four (4) gas accidents were recorded.

Statistik Kemalangan Gas Berpaip, 2019–2023

Piped Gas Accident Statistics, 2019-2023



Inisiatif Mempertingkatkan Tahap Keselamatan Elektrik dan Gas Berpaip

Initiatives to Improve Electrical and Piped Gas Safety

HomeDec Expo 2023

Sebagai salah satu kempen kesedaran keselamatan elektrik, ST telah menyertai pameran *HomeDec Expo 2023* bertempat di Kuala Lumpur selama empat (4) hari. Pameran kerjasama dengan The Electrical and Electronics Association of Malaysia (TEEAM) itu bertujuan untuk meningkatkan pengetahuan dan kesedaran orang awam tentang bahaya elektrik, sekaligus dapat mengurangkan risiko kemalangan, kecederaan, kerosakan harta benda dan kemalangan jiwa.

Bagi memberi gambaran sebenar mengenai aspek keselamatan elektrik kepada pengunjung, terdapat panel interaktif berkenaan Pemanas Air dan Peranti Arus Baki (PAB) yang dapat memberikan mereka peluang mempelajari cara-cara yang betul untuk mengujinya. Kempen ini memberi impak kepada sehingga sejuta pengunjung pameran berkenaan dalam mempertingkatkan budaya keselamatan di kalangan orang awam di Malaysia.

HomeDec Expo 2023

As part of the electrical safety awareness campaign, the Commission participated in the HomeDec Expo 2023 held in Kuala Lumpur for four (4) days. The exhibition, in collaboration with The Electrical and Electronics Association of Malaysia (TEEAM), aimed to enhance public knowledge and awareness about electrical hazards, thereby reducing the risks of accidents, injuries, property damage and fatalities.

To provide a real insight into electrical safety aspects for visitors, interactive panels on Water Heaters and Residual Current Devices (RCDs) were available, offering them the opportunity to learn the correct ways to test them. This campaign had an impact on up to a million visitors to the exhibition, enhancing a safety culture among the public in Malaysia.





Reruai ST di Pameran HomeDec Expo 2023 untuk membantu memberikan penerangan mengenai keselamatan elektrik
The Commission's booth at the HomeDec Expo 2023 to provide explanations on electrical safety

Majlis Pelancaran RoboST

Bagi mempromosikan keselamatan elektrik dan gas kepada generasi muda, ST telah memperkenalkan komik Adiwira ST dan maskot RoboST sebagai adiwira keselamatan. Majlis pelancaran RoboST telah diadakan pada 8 Mei 2023, di mana komik Adiwira ST diserahkan kepada Kementerian Pendidikan Malaysia (KPM) untuk diedarkan ke sekolah-sekolah.

RoboST Launch Event

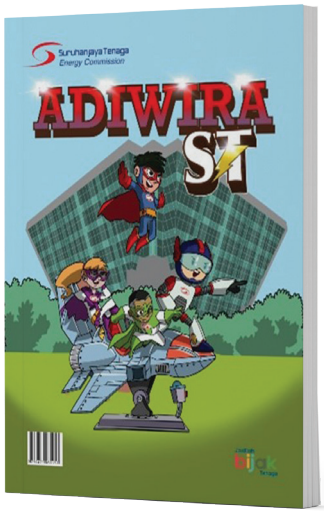
To promote electrical and gas safety among the younger generation, the Commission introduced the Adiwira ST comic and the RoboST mascot as safety hero. The RoboST launch event was held on 8 May 2023, where the Adiwira ST comic was handed over to the Ministry of Education Malaysia (KPM) for distribution to schools.

Selain itu, majlis yang dilancarkan oleh Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim, YB Nik Nazmi Nik Ahmad itu turut mempromosikan siri animasi Upin & Ipin berkenaan kempen keselamatan elektrik dan gas serta memperkenalkan Label ST-SIRIM yang baru.

Additionally, the event, launched by the Minister of Natural Resources, Environment and Climate Change, YB Nik Nazmi Nik Ahmad, also promoted the Upin & Ipin animation series on electrical and gas safety campaigns and introduced the new ST-SIRIM label.



Majlis Pelancaran RoboST
RoboST Launch Event



Komik Adiwira ST
Adiwira ST Comic

Mempertingkatkan Pematuhan Terhadap Peraturan

Improving Compliance with Regulations

Pelesenan Elektrik

Sehingga akhir 2023, sejumlah 3,644 lesen dikeluarkan bagi pepasangan awam dan pepasangan persendirian (bagi kapasiti 5 MW dan ke atas). Daripada jumlah tersebut, peratusan terbesar bagi keseluruhan kapasiti lesen adalah Lesen Penjana Bebas (IPP) manakala peratusan terkecil adalah bagi Lesen Persendirian (5 MW dan ke atas). Selain itu, Lesen Awam (NEM) merupakan penyumbang terbesar bagi keseluruhan bilangan lesen yang dikeluarkan.

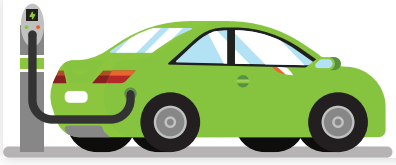
Electrical Licensing

Until the end of 2023, a total of 3,644 licences were issued for public and private installations (for capacities of 5 MW and above). Of this total, the largest percentage of overall licence capacity is for Independent Power Producer (IPP) licences, while the smallest percentage is for Private Licences (5 MW and above). Furthermore, Public Licences (NEM) contribute the most to the overall number of licences issued.

Jumlah Pengeluaran Lesen Mengikut Kategori, Sehingga 2023
Total Licences Issued by Category, Until 2023

Kategori Lesen *Licence Category*	Kapasiti *Capacity*		Bilangan Lesen *Number of licenses*	
	MW	%	Bilangan *Number*	%
Lesen Awam (Kojana) *Public Licences (Cogeneration)*	653.66	1.01	18	0.49
Lesen Awam (LSS) *Public Licences (LSS)*	2,744.15	4.24	75	2.06
Lesen Awam (NEDA) *Public Licences (NEDA)*	462.60	0.71	8	0.22
Lesen Awam (NEM) *Public Licences (NEM)*	1,181.20	1.82	2,043	56.06
Lesen Awam (Pengagihan) *Public Licences (Distribution)*	7,239.41	11.18	699	19.18
Lesen Awam Penjanaan Tenaga Boleh Baharu (TBB) *Public Licences for Renewable Energy (RE) Generation*	1,011.78	1.56	682	18.72
Lesen Awam (Utiliti) *Public Licences (Utilities)*	20,245.74	31.26	2	0.05
Lesen IPP *IPP Licences*	29,379.96	45.36	38	1.04
Lesen Persendirian (5 MW dan ke atas) *Private Licences (5 MW and above)*	276.88	0.43	32	0.88
Lesen Persendirian (Kojana) *Private Licences (Cogeneration)*	1,577.44	2.44	47	1.29
Jumlah *Total*	**64,772.82**	**100.00**	**3,644**	**100.00**

Jumlah Pengeluaran Lesen Awam (Pengagihan – EVCS), Sehingga 2023
Total Public Licence Issuance (Distribution – EVCS), Until 2023



Jumlah Lesen *Total Licences* **223**

Bilangan *Charge Point Operator* (CPO) *Number of Charge Point Operator (CPO)* **29**

Bilangan Pengecas AC *Number of AC Chargers* **523**

Bilangan Pengecas DC *Number of DC Chargers* **131**

Peningkatan pengeluaran lesen bagi 2023 disumbang oleh penambahan bilangan lesen terutama dari sektor TBB iaitu bagi Lesen Awam LSS, NEM3.0 dan Lesen Awam Pengagihan (EVCS). Peningkatan ini didorong oleh inisiatif kerajaan yang memperkenalkan program-program baharu bagi tujuan menyokong serta menggalakkan penglibatan semua pihak yang berkepentingan sejajar dengan usaha untuk mencapai negara neutral karbon menjelang 2050.

The increase in licence issuance in 2023 was contributed by an increase in the number of licences, especially from the RE sector, including Public LSS, RE, and distribution licences (including EVCS). This increase was driven by government initiatives in introducing new programmes to support and encourage the involvement of all stakeholders in efforts to achieve carbon neutrality by 2050.

Statistik Pengeluaran Lesen Pepasangan Awam dan Pepasangan Persendirian (Bagi Kapasiti 5 MW dan ke Atas), 2021–2023

Statistics of Issued Licences for Public Installations and Private Installations (for Capacities of 5 MW and Above), 2021–2023

Kategori Lesen *Licence Category*	Jumlah Lesen *Total Licenses*		
	2021	2022	2023
Lesen Awam (Kojana) *Public Licences (Cogeneration)*	2	2	2
Lesen Awam (LSS) *Public Licences (LSS)*	2	7	25
Lesen Awam (NEDA) *Public Licences (NEDA)*	2	2	1
Lesen Awam (NEM) *Public Licences (NEM)*	383	738	567
Lesen Awam (Pengagihan) *Public Licences (Distribution)*	39	54	266
Lesen Awam Penjanaan Tenaga Boleh Baharu (TBB) *Public Licences for Renewable Energy (RE) Generation*	21	79	93
Lesen IPP *IPP Licences*	1	4	0
Lesen Persendirian (5MW dan ke atas) *Private Licences (5 MW and above)*	4	7	1
Lesen Persendirian (Kojana) *Private Licences (Cogeneration)*	5	9	3
Jumlah *Total*	459	902	958

Nota:
TBB – Tenaga Boleh Baharu *(Feed-in-Tariff)*
LSS – Solar Berskala Besar
NEM – Pemeteran Tenaga Bersih
NEDA – *New Enhanced Dispatch Arrangement*
EVCS – *Electric Vehicle Charging System*

*Data daripada *Online Application System* (OAS)

Note:
RE – Renewable Energy (Feed-in-Tariff)
LSS – Large Scale Solar
NEM – Net Energy Metering
NEDA – New Enhanced Dispatch Arrangement
EVCS – Electric Vehicle Charging System

**Data from Online Application System (OAS)*

Pelesenan Gas Berpaip

Sehingga 31 Disember 2023, sebanyak 40 lesen berkaitan Akses Pihak Ketiga telah dikeluarkan oleh ST, dalam meningkatkan lagi kadar persaingan dalam sektor pasaran gas asli secara berpaip di Semenanjung dan Sabah.

Piped Gas Licensing

As of 31 December 2023, a total of 40 Third-Party Access licences have been issued by the Commission, further enhancing competition rates in the natural gas pipeline market sector in the Peninsula and Sabah.

Jumlah Lesen berkaitan Akses Pihak Ketiga, 2023

Total of Third-Party Access Licences, 2023

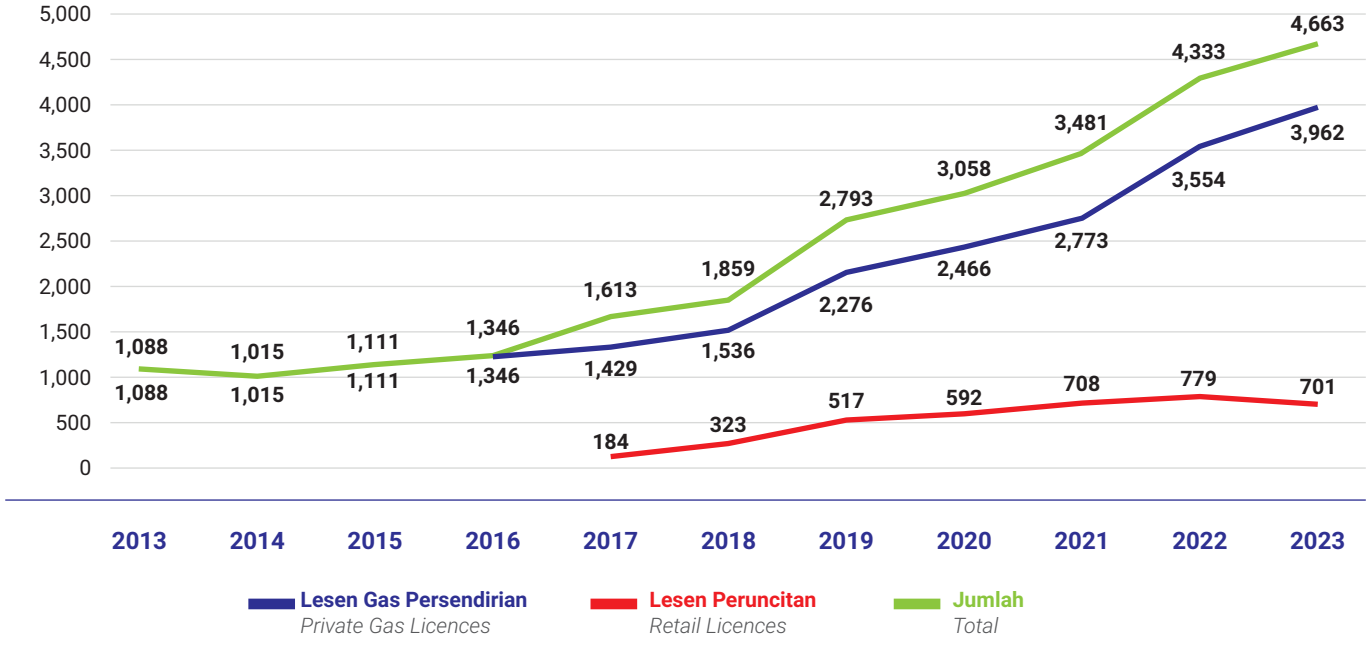
Kategori Lesen *Licence Category*	Jumlah *Total*
Lesen Pengimportan ke Terminal Penggasan Semula *Importation into Regasification Terminal Licence*	**17**
Lesen Penggasan Semula *Regasification Licence*	**2**
Lesen Pengangkutan *Transportation Licence*	**4**
Lesen Pengagihan *Distribution Licence*	**3**
Lesen Pengiriman *Shipping Licence*	**14**

ST juga telah mengeluarkan sejumlah 4,663 lesen gas persendirian dan lesen peruncitan sepertimana yang dikehendaki oleh Seksyen 11, Akta Bekalan Gas 1993. Ini merupakan pertambahan sebanyak 330 berbanding tahun sebelumnya, disebabkan oleh peningkatan kesedaran pengguna serta orang awam tentang keperluan pelesenan gas terutama bagi memastikan keselamatan bersama. ST juga terus berusaha meningkatkan kesedaran orang awam melalui sesi penerangan, kolaborasi dengan agensi-agensi yang berkaitan serta tindakan susulan seperti aktiviti penguatkuasaan dan perundangan.

The Commission has also issued a total of 4,663 private gas licences and retail licences as required by Section 11 of the Gas Supply Act 1993. This represented an increase of 330 compared to the previous year, attributed to the increased consumer and public awareness about the necessity of gas licensing, especially to ensure collective safety. The Commission continues to enhance public awareness through informational sessions, collaboration with relevant agencies, and follow-up actions such as enforcement activities and legislation.

Jumlah Lesen Gas Persendirian dan Lesen Peruncitan, 2013–2023

Total Private Gas Licences and Retail Licences, 2013–2023



Meningkatkan Bilangan Orang Kompeten Elektrik dan Gas

Enhancing the Number of Electrical and Gas Competent Persons

Perakuan Kekompetenan Elektrik

Pada 2023, sebanyak 7,058 Perakuan Kekompetenan telah dikeluarkan, di mana 508 (7%) Perakuan dikeluarkan melalui ST dan baki 6,550 (93%) dikeluarkan melalui institusi bertauliah di seluruh negara.

Electrical Certificates of Competency

In 2023, a total of 7,058 Certificates of Competency were issued, with 508 (7%) Certificates issued by the Commission and the remaining 6,550 (93%) issued by certified institutions throughout the country.

Statistik Pengeluaran Perakuan Kekompetenan, 2023

Statistics of Certificates of Competency Issued, 2023

Bil *No*	Kategori Utama Perakuan Kekompetenan *Main Category of Certificates of Competency*	Melalui ST *By the Commission*	Melalui Institusi Bertauliah *By Certified Institutions*
1	**Jurutera Perkhidmatan Elektrik (JPE)** *Electrical Services Engineer*	**10**	**-**
2	**Jurutera Elektrik Kompeten (JEK)** *Competent Electrical Engineer*	**50**	**-**
3	**Penyelia Elektrik (PE)** *Electrical Supervisor*	**6**	**-**
4	**Penjaga Jentera Elektrik (PJE)** *Electrical Chargeman*	**411**	**3,234**
5	**Pencantum Kabel (PK)** *Cable Jointer*	**14**	**61**
6	**Pendawai Elektrik (PW)** *Electrical Wireman*	**17**	**3,255**
	Jumlah *Total*	**508**	**6,550**
	Jumlah Keseluruhan *Total Number*	**7,058**	

Sehingga Disember 2023, sebanyak 126,210 Perakuan berstatus Aktif manakala 38,188 Perakuan berstatus Tidak Aktif. Perakuan berstatus Tidak Aktif adalah termasuk Perakuan yang lebih rendah bagi kategori yang sama dan pemegang Perakuan yang telah meninggal dunia.

As of December 2023, there were a total of 126,210 Certificates with Active status, while 38,188 Certificates were classified as Inactive. Inactive Certificates include those of lower categories within the same category and Certificates held by individuals who have passed away.

Bilangan Perakuan Aktif dan Tidak Aktif, Sehingga 2023

Number of Active and Inactive Certificates, Until 2023

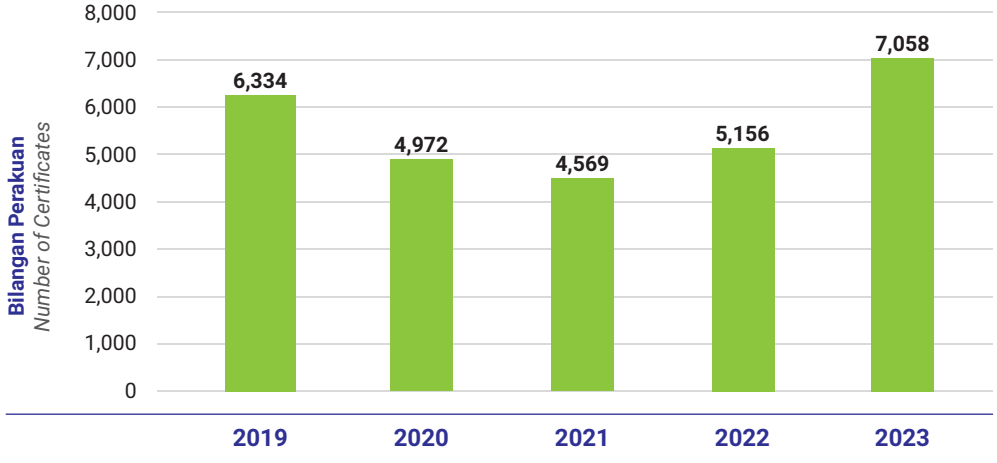
Kategori Utama Perakuan Kekompetenan *Main Category of Certificates of Competency*	Perakuan Aktif *Active Certificates*	Perakuan Tidak Aktif *Inactive Certificates*
Jurutera Perkhidmatan Elektrik (JPE) *Electrical Services Engineer*	**244**	**75**
Jurutera Elektrik Kompeten (JEK) *Competent Electrical Engineer*	**1,226**	**353**
Penyelia Elektrik (PE) *Electrical Supervisor*	**237**	**20**
Penjaga Jentera Elektrik (PJE) *Electrical Chargeman*	**51,343**	**19,669**
Pencantum Kabel (PK) *Cable Jointer*	**775**	**337**
Pendawai Elektrik (PW) *Electrical Wireman*	**72,385**	**17,734**
Jumlah Keseluruhan *Total Number*	**126,210**	**38,188**
Peratusan Keseluruhan *Total Percentage*	**76.77%**	**23.23%**

Pengeluaran Perakuan Kekompetenan pada 2023 meningkat sebanyak 36.9% berbanding tahun sebelumnya, disebabkan dua (2) sesi pengendalian peperiksaan teori dijalankan berbanding satu (1) sesi pada 2022.

The issuance of Certificates of Competency in 2023 increased by 36.9% compared to the previous year, attributed to the conduct of two (2) theory examination sessions compared to one (1) session in 2022.

Statistik Perbandingan Pengeluaran Perakuan Kekompetenan, 2019–2023

Comparison Statistics of Certificates of Competency Issuance, 2019–2023



Perakuan Kekompetenan Gas

Pada 2023, ST telah mengeluarkan sebanyak 41 Perakuan Kekompetenan Gas, menjadikan jumlah pemegang Perakuan Kekompetenan Gas sehingga akhir 2023 kepada 1,249 orang.

Gas Certificates of Competency

In 2023, the Commission issued a total of 41 Gas Certificates of Competency, bringing the total number of Gas Certificates of Competency holders to 1,249 individuals by the end of 2023.

Pemegang Perakuan Kekompetenan Gas, Sehingga 2023

Gas Certificates of Competency Holders, Until 2023

Kelas Kekompetenan *Competency Class*	Bilangan Perakuan Kekompetenan Yang Dikeluarkan *Number of Certificates Issued*	
	2023	Sehingga 2023 *Until 2023*
Jurutera Gas *Gas Engineer*	0	87
Penyelia Kejuruteraan Gas *Gas Engineering Supervisor*	7	320
Jurugegas Gas Kelas I *Class I Gas Fitter*	7	307
Jurugegas Gas Kelas II *Class II Gas Fitter*	6	215
Jurugegas Gas Kelas III *Class III Gas Fitter*	21	320
Jumlah *Total*	41	1,249

Peperiksaan Kekompetenan

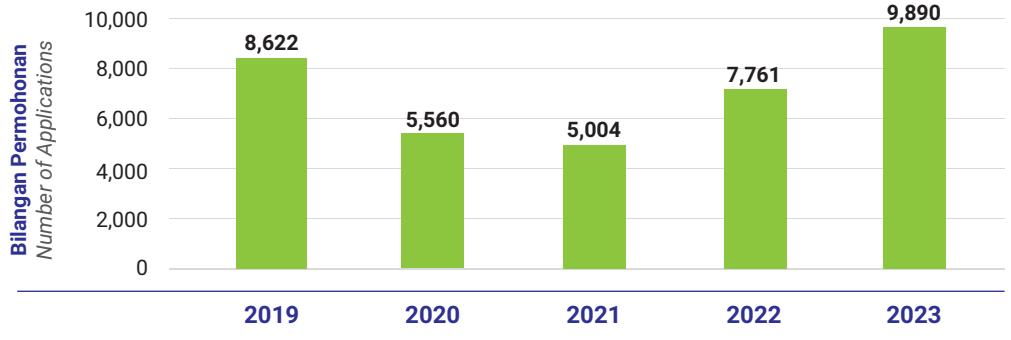
Permohonan baharu peperiksaan kekompetenan elektrik meningkat sebanyak 27.43% berbanding 2022. Peningkatan ini disebabkan oleh peningkatan pengendalian sembilan (9) kursus baharu oleh institusi bertauliah di Semenanjung dan Sabah.

Competency Examination

The number of new applications for electrical competency examinations increased by 27.43% compared to 2022. This increase is attributed to the handling of nine (9) new courses by accredited institutions in the Peninsula and Sabah.

Jumlah Permohonan Baharu Peperiksaan Kekompetenan Elektrik, 2019–2023

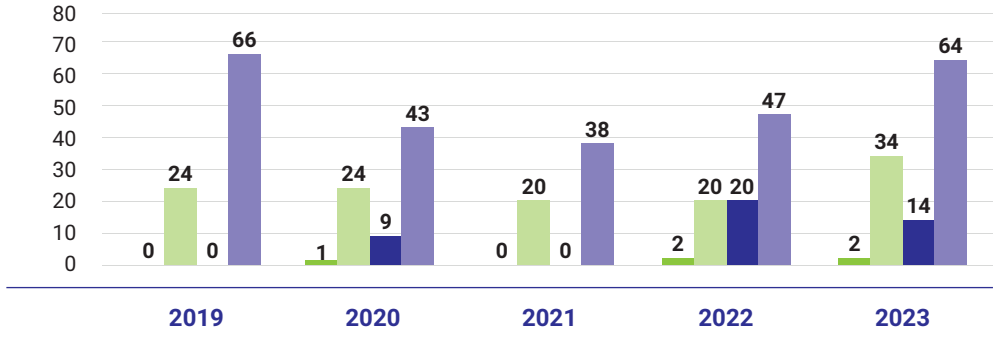
Total New Applications for Electrical Competency Examinations, 2019–2023



Bagi peperiksaan kekompetenan gas, peperiksaan bertulis telah diadakan sebanyak dua (2) kali dan dihadiri oleh 14 calon. Peperiksaan lisan pula dijalankan sebanyak 34 sesi dan dihadiri oleh 64 calon. Daripada jumlah ini, seramai 41 calon telah lulus peperiksaan lisan dan layak diberikan Perakuan Kekompetenan Gas.

For gas competency examinations, the written examination was conducted twice and attended by 14 candidates. The oral examination was conducted in 34 sessions and attended by 64 candidates. Of these, 41 candidates passed the oral examination and were eligible to receive Gas Certificates of Competency.

Sesi Peperiksaan yang Dijalankan dan Jumlah Calon yang Mengambil Peperiksaan, 2019–2023
Examination Sessions Conducted and Total Candidates Taking Exams, 2019–2023



Sesi Peperiksaan yang Dijalankan *Examination Sessions Conducted*	Jumlah *Total*
Peperiksaan bertulis *Written examination*	**5**
Peperiksaan lisan *Oral examination*	**122**

Jumlah Calon yang Mengambil Peperiksaan *Total Candidates Taking Exams*	Jumlah *Total*
Peperiksaan bertulis *Written examination*	**43**
Peperiksaan lisan *Oral examination*	**258**

Pentauliahan Institusi

Pada 2023, sebanyak 10 kategori kursus yang melibatkan sembilan (9) institusi bertauliah sedia ada telah mendapat kebenaran bagi mengendalikan kursus-kursus peperiksaan kekompetenan elektrik ST.

Bagi kekompetenan gas pula, tiada institusi baharu yang ditauliahkan pada 2023.

Institution Accreditation

In 2023, a total of 10 course categories involving nine (9) existing certified institutions were granted permission to conduct the Commission's electrical competency examination courses.

For gas competency, there were no new institutions accredited in 2023.

Institusi dan Kursus Pentauliahan Kekompetenan Elektrik, 2023
Institutions and Accredited Electrical Competency Courses, 2023

Bil *No*	Institusi *Institutions*	Kursus *Course*	Tarikh Tauliah *Accreditation Date*
1	**Institut VTAR, Kuala Lumpur**	**PW4 (FT/PT)**	**27 Februari 2023** *27 February 2023*
2	**ILP Pasir Gudang, Johor**	**PJ A0 (FT) - Kursus 16 Minggu**	**27 Februari 2023** *27 February 2023*
3	**ABM Wilayah Tengah, Kuala Lumpur**	**PW4 (FT/PT) – Kursus 2 tahun**	**9 Jun 2023** *9 June 2023*
		PJ A0 (FT/PT)	

Institusi dan Kursus Pentauliahan Kekompetenan Elektrik, 2023

Institutions and Accredited Electrical Competency Courses, 2023

Bil *No*	Institusi *Institutions*	Kursus *Course*	Tarikh Tauliah *Accreditation Date*
4	IKTBN Bukit Mertajam, Pulau Pinang	PJ A0 (FT/PT)	9 Jun 2023 *9 June 2023*
5	IKBN Kinarut, Sabah	PW4 (FT/PT)	9 Jun 2023 *9 June 2023*
6	GM Labuan, Wilayah Labuan	PW2 (FT/PT)	16 Oktober 2023 *16 October 2023*
7	IKM Seberang Prai Utara, Pulau Pinang	PJ A0 (FT) – Kursus 16 Minggu	16 Oktober 2023 *16 October 2023*
8	GM Batu Gajah, Perak	PW2 (FT/PT)	16 Oktober 2023 *16 October 2023*
9	GM Jerantut, Pahang	PW4 (FT/PT)	30 November 2023 *30 November 2023*

Nota/*Note*:
FT = *Full Time* | PT = *Part Time* | VR = Voltan Rendah/*Low-Voltage*

Pengauditan di Institusi Bertauliah

Sehingga Disember 2023, sebanyak 137 buah institusi telah ditauliah oleh ST bagi mengendalikan peperiksaan kekompetenan elektrik. Bagi 2023 sahaja, sebanyak 17 institusi telah diaudit dan kadar pematuhan oleh setiap institusi adalah 100% dengan isu-isu berbangkit daripada laporan audit telah diselesaikan pada Disember 2023.

Perkara-perkara yang diaudit adalah seperti program kursus yang sedang berjalan, kecukupan tenaga pengajar berkompeten, tempoh kursus, sesi pengambilan, semakan borang permohonan peperiksaan, peralatan ujian dan pembelajaran serta kandungan silibus.

Bagi institusi yang ditauliahkan untuk mengendalikan peperiksaan kekompetenan gas pula, sebanyak dua (2) audit dijalankan iaitu Institut Kemahiran MARA (IKM) Johor Bahru pada 14 Februari 2023 dan Universiti Teknologi Malaysia (UTM) Skudai pada 1 Ogos 2023.

Auditing at Certified Institutions

As of December 2023, a total of 137 institutions have been accredited by the Commission to conduct electrical competency examinations. In 2023 alone, 17 institutions were audited, each achieving a compliance rate of 100%, with any issues raised from the audit reports were resolved by December 2023.

Audited matters included ongoing course programmes, adequacy of competent teaching staff, course duration, intake sessions, examination application form reviews, testing and learning equipment, and syllabus content.

For institutions accredited to conduct gas competency examinations, two (2) audits were conducted at Institut Kemahiran MARA (IKM) Johor Bahru on 14 February 2023, and at Universiti Teknologi Malaysia (UTM) Skudai on 1 August 2023.



Audit pemantauan dan pematuhan institusi di Akademi Binaan Malaysia (ABM) Wilayah Tengah, Kuala Lumpur

Monitoring and Compliance Audit at Akademi Binaan Malaysia (ABM) Wilayah Tengah, Kuala Lumpur

Pendaftaran Orang Kompeten Gas

Pada 2023, terdapat seramai 526 orang kompeten gas yang berdaftar dengan ST, iaitu 42.11% daripada 1,249 jumlah keseluruhan orang kompeten gas. Ini merupakan peningkatan sebanyak 18.47% berbanding 444 orang pada tahun sebelumnya.

Registration of Gas Competent Person

In 2023, there were a total of 526 gas competent person registered with the Commission, accounting for 42.11% of the total 1,249 gas competent person. This represented an increase of 18.47% compared to 444 individuals in the previous year.

Pendaftaran Orang Kompeten Gas, 2019–2023
Registration of Gas Competent Person, 2019–2023

Kelas Kekompetenan *Institutions*	Bilangan Pendaftaran Orang Kompeten Gas *Number of Registered Gas Competent Person*				
	2019	2020	2021	2022	2023
Jurutera Gas *Gas Engineer*	25	24	29	28	31
Penyelia Kejuruteraan Gas *Gas Engineering Supervisor*	107	116	116	119	119
Jurugegas Gas Kelas I *Class I Gas Fitter*	144	152	150	157	158
Jurugegas Gas Kelas II *Class II Gas Fitter*	45	90	30	36	91
Jurugegas Gas Kelas III *Class III Gas Fitter*	87	112	109	104	127
Jumlah *Total*	408	494	434	444	526

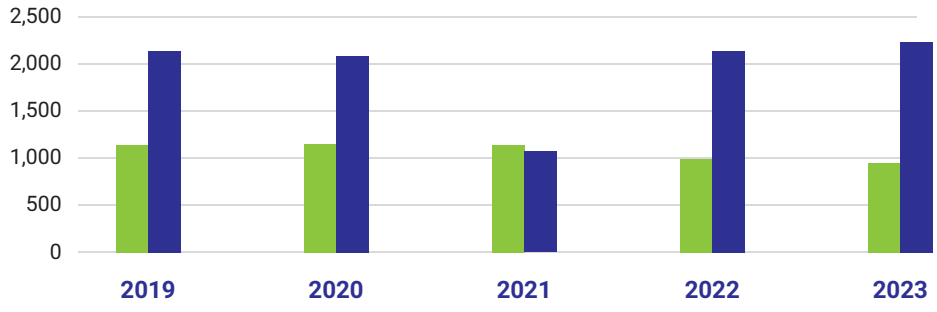
Pendaftaran Kontraktor Elektrik

Pada 2023, seramai 954 kontraktor elektrik baharu mendaftar dengan ST, manakala 2,358 lagi memperbaharui pendaftaran kontraktor elektrik mereka.

Registration of Electrical Contractors

In 2023, a total of 954 new electrical contractors registered with the Commission, while another 2,358 renewed their electrical contractor registrations.

Pendaftaran Kontraktor Elektrik, 2019–2023
Registrations of Electrical Contractors, 2019–2023



	2019	2020	2021	2022	2023
Pendaftaran Kontraktor Baharu *Registration of Electrical Contractors*	1,225	1,250	1,224	1,051	954
Pembaharuan Kontraktor *Contractor Renewals*	2,294	2,100	1,958	2,257	2,358

Pendaftaran Kontraktor Gas

Pada 2023, jumlah pendaftaran kontraktor gas ialah sebanyak 112, berbanding 121 pendaftaran pada 2022. Daripada jumlah ini, 103 merupakan pendaftaran bagi pembaharuan dan baki sembilan (9) merupakan permohonan baharu termasuk tiga (3) kontraktor yang bertukar kelas.

Registration of Gas Contractors

In 2023, the total number of gas contractor registrations was 112, compared to 121 registrations in 2022. Out of this total, 103 were renewal registrations, and the remaining nine (9) were new applications, including three (3) contractors who changed classes.

Pendaftaran Kontraktor Gas Mengikut Kelas, 2019-2023

Registration of Gas Contractors by Class, 2019-2023

Tahun *Year*	Kelas A *Class A*	Kelas B *Class B*	Kelas C *Class C*	Kelas D *Class D*	Jumlah *Total*
2019	49	32	17	5	103
2020	52	36	20	7	115
2021	55	31	21	8	115
2022	58	36	20	7	121
2023	58	32	17	5	112

Perakuan Kelulusan Kelengkapan Elektrik dan Peralatan Gas

Certificates of Approval for Electrical Equipment and Gas Appliances

Pengeluaran Perakuan Pendaftaran (PP)

Di bawah Peraturan 97C, Peraturan-peraturan Elektrik 1994, mana-mana syarikat yang mengilang atau mengimport kelengkapan elektrik hendaklah memohon Perakuan Pendaftaran (PP). Statistik menunjukkan pendaftaran bagi mengimport sama ada permohonan baharu dan permohonan pembaharuan adalah lebih tinggi berbanding mengilang iaitu masing-masing 82% dan 18%.

Perakuan Pendaftaran ini boleh dimohon secara dalam talian melalui sistem e-DIK (https://edik.st.gov.my/).

Issuance of Certificate of Registration (CoR)

Under Regulation 97C of the Electrical Regulations 1994, any company that manufactures or imports electrical equipment is required to apply for a Certificate of Registration (CoR). Statistics show that the registration for importation, both for new applications and renewals, is higher compared to manufacturing, with 82% and 18%, respectively.

This Certificate of Registration can be applied online through the e-DIK system (https://edik.st.gov.my/).

Jumlah Pengeluaran Perakuan Pendaftaran bagi Pengimport dan Pengilang, 2023
Total Issuance of Certificates of Registration for Importers and Manufacturers, 2023

Permohonan Baharu
New Application

Mengimport *Import*	**Mengilang** *Manufacturing*
266	37



Permohonan Pembaharuan
Renewal Application

Mengimport *Import*	**Mengilang** *Manufacturing*
612	151

Pengeluaran Perakuan Kelulusan (PK) dan Surat Pelepasan

Di bawah Peraturan 97(1), Peraturan-peraturan Elektrik 1994, Perakuan Kelulusan (PK) diperlukan untuk aktiviti mengilang, mengimport, mempamer, menjual atau mengiklan kelengkapan elektrik. Jenis-jenis kelengkapan elektrik yang dikawal selia oleh ST adalah:

i. apa-apa kelengkapan domestik
ii. apa-apa kelengkapan voltan rendah yang biasanya dijual secara langsung kepada orang awam, atau
iii. apa-apa kelengkapan voltan rendah yang tidak memerlukan kemahiran khusus dalam pengendaliannya.

PK diperlukan bagi memastikan kelengkapan elektrik yang berada di pasaran mematuhi standard keselamatan yang ditetapkan, sekali gus mengurangkan risiko kemalangan disebabkan oleh kelengkapan elektrik tersebut.

ST juga mengeluarkan Surat Pelepasan (RL) kepada pihak Kastam sebagai kelulusan pengecualian daripada PK untuk pengimportan kelengkapan elektrik yang dikawal selia oleh ST. Terdapat lapan (8) jenis surat pelepasan iaitu:

i. Tujuan Khas
ii. Konsert
iii. Kajian Kilang
iv. Kajian Kualiti
v. Pembaikan dan Eksport Semula
vi. Import Komponen untuk 100% Eksport
vii. Import Komponen untuk Pasaran Tempatan
viii. Transit

Sehingga kini, ST mengawal selia sebanyak 34 kategori kelengkapan elektrik. Bagi kelengkapan elektrik untuk tujuan pameran, ia tidak boleh dijual kepada orang awam dan perlu dikembalikan semula ke negara asal setelah pameran tamat.

Issuance of Certification of Approval (CoA) and Release Letter

Under Regulation 97(1) of the Electrical Regulations 1994, Certification of Approval (CoA) is required for activities related to manufacturing, importing, displaying (exhibiting), selling, or advertising electrical equipment. The types of electrical equipment regulated by the Commission are:

i. any domestic equipment
ii. any low-voltage equipment that is usually sold directly to the general public, or
iii. any low-voltage equipment which does not require special skills in its operation.

The CoA is required to ensure that electrical equipment on the market complies with established safety standards, thereby reducing the risk of accidents caused by such electrical equipment.

The Commission also issued a Release Letter (RL) to the Customs as approval for exemption from the CoA for the importation of electrical equipment regulated by the Commission. There are eight (8) types of RL which are:

iv. Special Purpose
v. Concert
vi. Factory Research
vii. Quality Research
viii. Repair and Re-Export
ix. Import of Components for 100% Export
x. Import of Components for the Local Market
xi. Transit

Presently, the Commission regulates 34 categories of electrical equipment. For electrical equipment for the purpose of exhibition, it cannot be sold to the public and needs to be returned to the origin country after the exhibition ends.

Jumlah PK dan RL bagi Kelengkapan Elektrik, 2019–2023
Total of CoA and RL for Electrical Equipment, 2019–2023

Tahun *Year*	PK *CoA*			Jumlah *Total*	Pembaharuan PK *Renewal of CoA*		Jumlah *Total*	RL
	Import *Import*	Kilang *Manufacture*	Pameran *Exhibition*		Import *Import*	Kilang *Manufacture*		
2019	8,176	1,316	8	9,500	4,382	1,262	5,644	2,845
2020	8,262	1,419	2	9,681	4,550	1,028	5,578	2,330
2021	8,789	1,176	0	9,965	4,941	1,162	6,103	2,621
2022	9,620	1,147	1	10,768	5,070	1,217	6,287	2,677
2023	9,169	1,205	0	10,374	5,529	1,064	6,593	3,255

Selepas mendapat PK, kelengkapan elektrik yang diimport perlu menjalani ujian konsainmen atau menyertai *Product Certificate Scheme* (PCS) oleh SIRIM. Kelengkapan yang lulus ujian konsainmen hendaklah dilekatkan dengan label keselamatanST-SIRIM.

After obtaining the CoA, imported electrical equipment needs to undergo consignment testing or participate in the Product Certification Scheme (PCS) conducted by SIRIM. Equipment that passes the consignment testing shall be affixed with the ST-SIRIM safety label.



Label keselamatan ST-SIRIM bermula Mac 2022
ST-SIRIM safety label effective March 2022

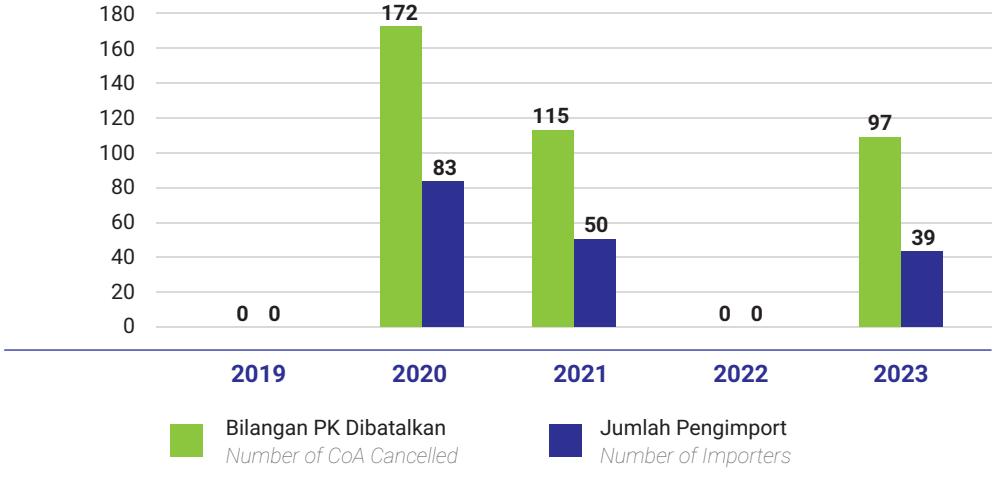
Pembatalan PK

Sehingga Disember 2023, sejumlah 22 kelompok pembatalan PK kerana gagal ujian konsainmen SIRIM telah dipersetujui ST, melibatkan 1,332 PK dan 452 syarikat pengimport.

Cancellation of CoA

As of December 2023, a total of 22 batches of CoA cancellations have been approved by the Commission, involving 1,332 CoAs and 452 importing companies.

Pembatalan PK, 2019–2023
Cancellation of CoA, 2019–2023



Antara sebab-sebab kegagalan ujian konsainmen SIRIM:

Among the reasons for failing the SIRIM Consignment tests were:

- Isi kandungan laporan ujian diubah oleh pemohon
  Content of the test report was changed by the applicant
- Sampel yang diperiksa dan diuji amat berlainan daripada kelengkapan rujukan dalam laporan ujian
  Samples that were inspected and tested were different from the reference equipment in the test report
- Kelengkapan elektrik daripada kelompok yang berlainan untuk PK yang sama, mempunyai rupa bentuk dan reka bentuk yang berlainan
  Electrical equipment from a different batch but for the same CoA, with a different shape and design
- Penandaan pada plat nama atau label produk tidak memenuhi keperluan syarat penandaan dan amaran
  The markings on the nameplate or product label do not fulfil the marking requirements and warnings
- Manual pengguna tidak memenuhi syarat penandaan dan amaran
  The user manual does not fulfil the requirement of markings and warnings
- Kapasiti dan kadaran pada plat nama berlainan daripada yang telah diluluskan
  Capacity and rating on the nameplate are different from what is approved
- Komponen kritikal berlainan daripada yang tersenarai dalam laporan ujian
  Critical components different from what is listed in the test report

Bagi kelengkapan elektrik yang gagal ujian konsainmen SIRIM, pengimport dikehendaki memberikan maklum balas kepada ST berkenaan tindakan yang diambil terhadap kelengkapan tersebut. Antara tindakan yang diambil oleh pengimport adalah memohon semula PK dan ujian konsainmen SIRIM menggunakan laporan ujian keselamatan yang baharu, menghantar pulang ke negara asal serta melupuskan kelengkapan elektrik tersebut.

For electrical equipment that failed the SIRIM consignment test, importers are required to provide feedback to the Commission on actions taken to address the failed equipment. Among actions taken by importers include re-applying for the CoA and SIRIM Consignment Test with a new safety test report, returning the equipment to its country of origin and disposing of the electrical equipment.



Pelupusan 100 unit pembersih tekanan tinggi yang bernilai RM24,000 di Seri Kembangan, Selangor

Disposal of 100 high-pressure cleaners valued at RM24,000 in Seri Kembangan, Selangor

PK Pemasang, Pengilang dan Pengimport & PK Gegasan Gas, Perkakas Gas dan Kelengkapan

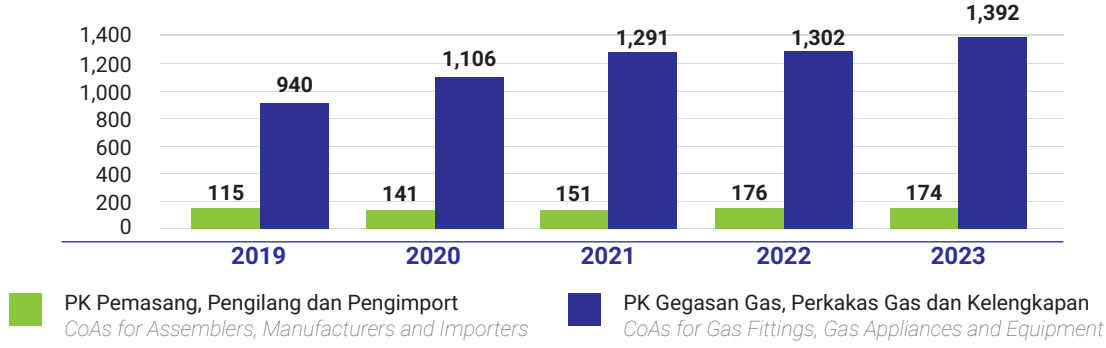
Bagi 2023, sebanyak 174 PK Pemasang, Pengilang dan Pengimport dikeluarkan. Bagi Gegasan Gas, Perkakas Gas dan Kelengkapan pula, sebanyak 1,392 PK dikeluarkan melibatkan pelbagai jenis dan model, peningkatan 6.9% berbanding 2022. Ini disebabkan oleh sektor perniagaan dan industri gas mula merancak selepas transisi pandemik pada 2022, serta kesedaran terhadap penggunaan peralatan dan kelengkapan gas yang telah diperakukan.

CoA for Assemblers, Manufacturers and Importers & CoA for Gas Fittings, Gas Appliances and Equipment

In 2023, a total of 174 CoAs for Assemblers, Manufacturers and Importers were issued. As for Gas Fittings, Gas Appliances and Equipment, a total of 1,392 CoAs were issued involving various types and models, an increase of 6.9% compared to 2022. This is due to the business and industrial gas sectors picking up momentum after the pandemic transition in 2022, as well as awareness of the use of certified gas appliances and equipment.

Pengeluaran PK Gas, 2019–2023

CoA Issued for Gas, 2019–2023



Kelulusan untuk Memasang (ATI) dan Kelulusan untuk Mengendali (ATO) Pepasangan Gas Berpaip

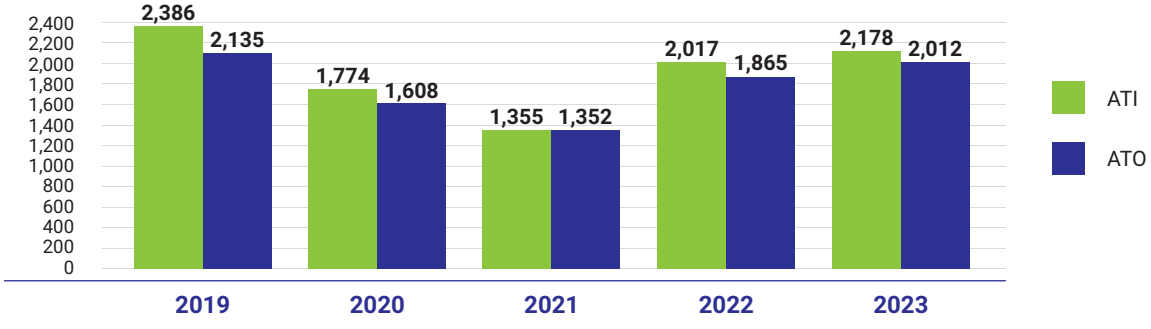
Bagi 2023, permohonan ATI yang diterima adalah sebanyak 2,178, manakala permohonan ATO yang diterima adalah sebanyak 2,012, peningkatan masing-masing sebanyak 8% dan 7.9% berbanding 2022. Ini menunjukkan perkembangan positif industri makanan dan minuman di Malaysia yang menggunakan gas sebagai bahan api.

Approval to Install (ATI) & Approval to Operate (ATO) for Piped Gas Installations

In 2023, the number of received ATI applications was 2,178, while the number of received ATO applications was 2,012, with increases of 8% and 7.9% respectively, compared to 2022. This indicated a positive development in the food and beverage industry in Malaysia, which relies on gas as a fuel source.

Kelulusan ATI dan ATO, 2019–2023

ATI and ATO Approvals, 2019–2023



Meningkatkan Aktiviti Penguatkuasaan

Enhancing Enforcement Activities

Penguatkuasaan

Dari segi pepasangan dan audit pengurusan keselamatan, sepanjang 2023, sebanyak 1,328 pemeriksaan dilaksanakan terhadap kontraktor elektrik, premis pengguna-pengguna industri kecil, komersial dan domestik termasuk kilang, hotel, pusat membeli-belah dan kediaman. Audit pengurusan keselamatan elektrik dan gas pula dilaksanakan terhadap pepasangan elektrik dan gas yang besar.

Daripada pemeriksaan tersebut, sebanyak 360 notis pematuhan dikeluarkan kepada pemilik pepasangan yang didapati melanggar peruntukan undang-undang.

Enforcement

In terms of installation and safety management audits, throughout 2023, a total of 1,328 inspections were conducted on electrical contractors, premises of small industries, commercial and domestic consumers, including factories, hotels, shopping centres and residences. Safety management audits for electrical and gas installations on the other hand were conducted on large-scale installations.

From these inspections, a total of 360 compliance notices were issued to installation owners found to be in violation of legal provisions.

Aktiviti Penguatkuasaan dan Audit Pengurusan Keselamatan, 2023
Enforcement Activities and Safety Management Audits, 2023

Bil *No*	**Aktiviti Pemeriksaan** *Inspection Activities*	**Bilangan Pemeriksaan** *Number of Inspections*	**Bilangan Surat Pematuhan Keselamatan Yang Dikeluarkan*** *Number of Safety Compliance Letters Issued**
1	**Pemeriksaan Pepasangan/Pelesenan Elektrik** *Installation Inspection/Electrical Licensing*	**478 Premis** *478 Premises*	**127**
2	**Pemeriksaan Pepasangan Gas (Keutamaan Kepada Dobi)** *Gas Installation Inspection (Priority to Launderettes)*	**201 Premis** *201 Premises*	**55**
3	**Pemeriksaan Pendaftaran Kontraktor** *Registered Contractor Inspection*	**182 Kontraktor** *182 Contractors*	**34**
4	**Pemeriksaan Kelengkapan Elektrik (Pengimport/Pengilang/Pengedar/Penjual)** *Electrical Appliances Inspection (Importers/Manufacturers/Distributors/Sellers)*	**247 Premis** *247 Premises*	**106**
5	**Pemeriksaan Pengurus Tenaga Elektrik** *Electrical Energy Manager Inspection*	**69 Premis** *69 Premises*	**3**
6	**Audit Program/Plan Pengurusan Keselamatan** *Audit Programmes/Safety Management Plans*	**151 Premis** *151 Premises*	**35**

*Nota: Bilangan Surat Pematuhan Keselamatan yang dikeluarkan adalah tertakluk kepada bilangan ketidakpatuhan yang dijumpai sewaktu pemeriksaan dilakukan dan tidak bergantung kepada bilangan premis yang diperiksa.

**Note: The number of Safety Compliance Letters issued is subject to the number of non-compliances found during inspections and not the number of premises inspected.*

Dari segi kelengkapan elektrik, ST lebih berfokus kepada penguatkuasaan sembilan (9) kelengkapan elektrik yang perlu mematuhi Piawaian Prestasi Tenaga Minimum (MEPS), di samping penguatkuasaan kelengkapan elektrik yang tidak mempunyai kelulusan ST serta tidak dilekatkan dengan label ST-SIRIM. Sebanyak 219 premis telah diperiksa dan daripada jumlah tersebut, 104 notis pematuhan telah dikeluarkan kepada pemilik premis yang didapati melanggar peruntukan undang-undang. ST turut bekerjasama dengan Kementerian Perdagangan Dalam Negeri dan Kos Sara Hidup (KPDN), Jabatan Kastam Diraja Malaysia, Energy Commission of Sabah (ECoS) dan SIRIM dalam membanteras penjualan kelengkapan elektrik yang tidak diluluskan.

ST juga bertindak berdasarkan aduan yang diterima berkaitan penjualan kelengkapan elektrik yang tidak diluluskan, selain mengarahkan pengendali platform beli-belah dalam talian untuk mengeluarkan kandungan yang tidak selaras dengan Akta Bekalan Elektrik 1990 (Akta 447) dan Peraturan-Peraturan Elektrik 1994.

Dari segi penguatkuasaan pelesenan pula, ST telah memeriksa sebanyak 118 premis, di mana sebanyak 29 notis pematuhan dikeluarkan. Operasi juga dijalankan ke atas 11 premis yang beroperasi tanpa lesen atau lesen tamat tempoh di mana sebanyak empat (4) kertas siasatan telah dibuka.

Selain itu, sebanyak 201 pemeriksaan gas berpaip dijalankan, dengan 55 notis pematuhan dikeluarkan terhadap premis yang melanggar peruntukan Akta Bekalan Gas 1993. Operasi juga telah dijalankan ke atas 12 premis yang beroperasi tanpa lesen atau lesen tamat tempoh di mana sebanyak empat (4) kertas siasatan telah dibuka.

Untuk 2023, ST menjalankan operasi penguatkuasaan yang telah mengenal pasti 197 premis yang disyaki melanggar peraturan dan undang-undang berkaitan. Berikutan operasi tersebut, ST telah membuka 31 kertas siasatan bagi semua kategori operasi yang dilakukan.

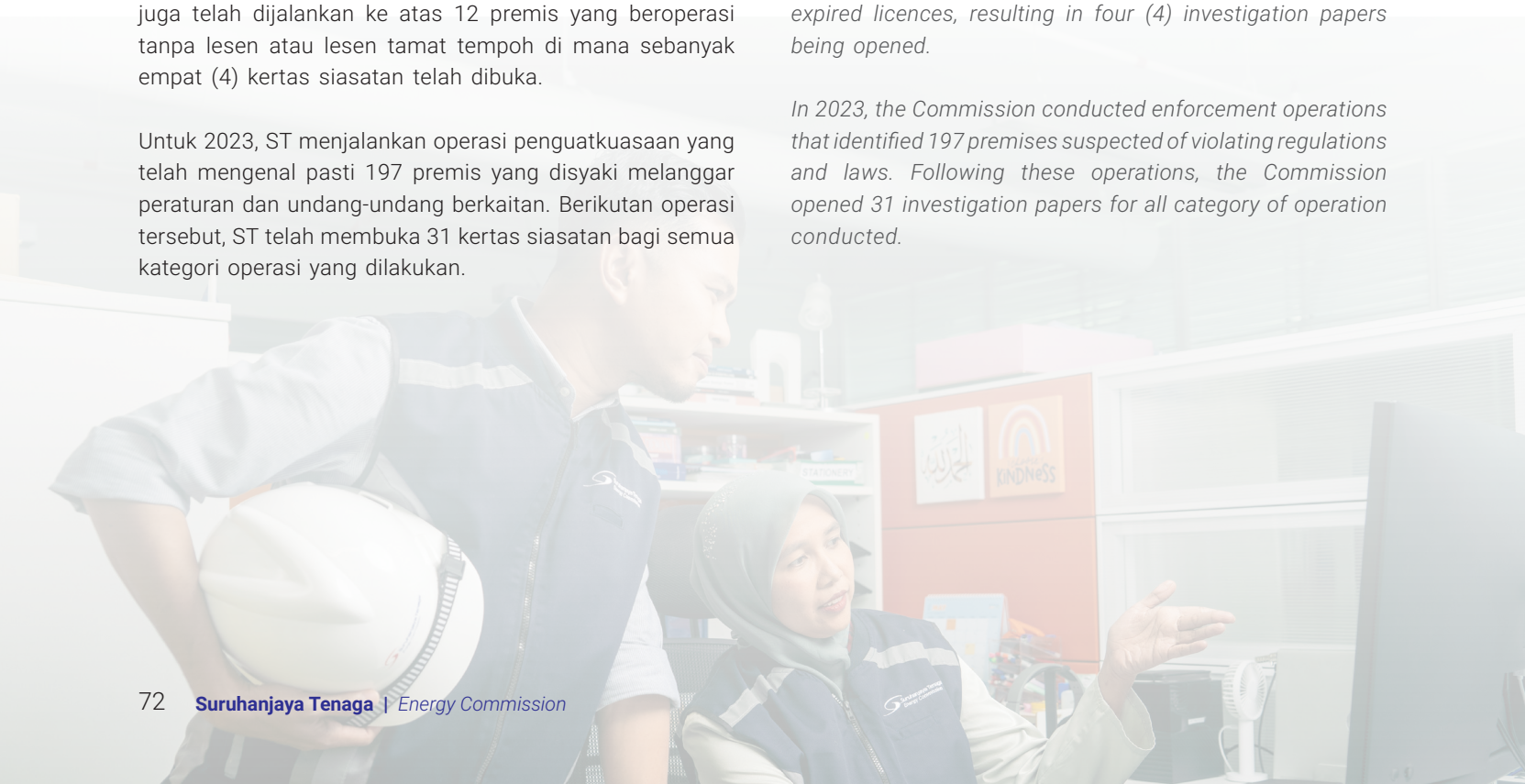
In terms of electrical equipment, the Commission focuses more on enforcing nine (9) electrical equipment items that must comply with Minimum Energy Performance Standards (MEPS), as well as electrical equipment without the Commission's approval and not affixed with the ST-SIRIM label. A total of 219 premises were inspected, and out of this number, 104 compliance notices were issued to premise owners found to violate legal provisions. The Commission also collaborates with the Ministry of Domestic Trade and Costs of Living (KPDN), the Royal Malaysian Customs Department, the Energy Commission of Sabah (ECoS), and SIRIM in combating the sale of unapproved electrical equipment.

The Commission also takes action based on complaints received regarding the sale of unapproved electrical equipment, in addition to directing online shopping platform operators to remove content that is not in line with the Electricity Supply Act 1990 (Act 447) and the Electricity Regulations 1994.

In terms of licensing enforcement, the Commission inspected a total of 118 premises, with 29 compliance notices issued. Operations were also conducted on 11 premises operating without a licence or with expired licences, resulting in four (4) investigation papers being opened.

Additionally, 201 inspections on piped gas were conducted, with 55 compliance notices issued to premises violating the provisions of the Gas Supply Act 1993. Operations were also conducted on 12 premises operating without a licence or with expired licences, resulting in four (4) investigation papers being opened.

In 2023, the Commission conducted enforcement operations that identified 197 premises suspected of violating regulations and laws. Following these operations, the Commission opened 31 investigation papers for all category of operation conducted.



Operasi Penguatkuasaan, 2023
Enforcement Operations, 2023

Operasi *Operation*	Bil *No*	Bilangan Kertas Siasatan Dibuka *Number of Investigation Papers Opened*
Penggunaan Elektrik Dengan Curang *Dishonest Use of Electricity*	22	21
Pepasangan Gas *Gas Installation*	9	4
Pepasangan Lesen (Persendirian, Awam, NEM) *Installation Licence (Private, Public, NEM)*	14	4
Kelengkapan Elektrik *Electrical Equipment*	16	0
Pepasangan Elektrik *Electrical Installation*	24	0
Kontraktor *Contractor*	106	1
Orang Kompeten *Competent Person*	6	1
Jumlah *Total*	197	31

Penyiasatan

Pada 2023, sebanyak 20 bilangan Mesyuarat Jawatankuasa Siasatan telah diadakan bagi menilai 94 kes yang dilaporkan. Daripada jumlah itu, sebanyak 34 kertas siasatan diluluskan untuk dibuka, 13 kes memerlukan siasatan lanjut dan 42 kes tidak mempunyai asas yang kukuh untuk diteruskan siasatan.

Jumlah kertas siasatan yang dibuka pada 2023 menurun sebanyak 52% berbanding 2022, disumbang oleh penurunan mendadak kertas siasatan bagi kategori Kes Lesen, daripada 61 kepada lima (5) kes pada 2023.

Secara keseluruhannya, sebanyak 72 kertas siasatan telah dibuka pada 2023, termasuk untuk kes-kes yang dilaporkan pada tahun-tahun sebelumnya.

Investigation

In 2023, a total of 20 Investigation Committee Meetings were held to assess 94 reported cases. Out of this total, 34 investigation papers were approved to be opened, 13 cases required further investigation, and 42 cases lacked a strong basis to continue the investigation.

The total number of investigation papers opened in 2023 decreased by 52% compared to 2022, mainly due to a sudden decrease in investigation papers for the Licences Case category, from 61 to five (5) cases in 2023.

Overall, a total of 72 investigation papers were opened in 2023, including cases reported in previous years.

Kategori Kertas Siasatan Dibuka, 2023

Categories of Investigation Papers Opened, 2023

Kategori *Category*	2022	2023
Kemalangan Elektrik Maut *Fatal Electrical Accidents*	23	15
Kemalangan Elektrik Tidak Maut *Non-Fatal Electrical Accidents*	31	17
Kemalangan Maut (Haiwan) *Fatal Accidents (Animals)*	8	2
Kemalangan Maut Bukan Elektrik *Non-Electrical Fatal Accident*	1	1
Kemalangan Tidak Maut Bukan Elektrik *Non-Fatal Non-Electrical Accidents*	2	0
Kes Kebakaran Elektrik *Electrical Fire Cases*	2	1
Gangguan Bekalan Elektrik *Electricity Supply Interruptions*	1	3
Aduan dari Unit Hal Ehwal Pengguna *Complaints from Consumer Affairs Unit*	0	1
Kemalangan Gas Maut *Fatal Gas Accidents*	0	0
Kemalangan Gas Tidak Maut *Non-Fatal Gas Accidents*	1	0
Kebocoran Gas *Gas Leakage*	1	0
Operasi Curi Elektrik *Electricity Theft Operations*	16	21
Operasi Kelengkapan Elektrik *Electrical Equipment Operations*	4	0
Operasi Pepasangan Elektrik *Electrical Installation Operations*	0	0
Operasi Orang Kompeten *Competent Person Operations*	0	1
Lesen (Awam/Persendirian/NEM) *Licences (Public/Private/NEM)*	61	5
Operasi Kontraktor *Contractor Operations*	0	1
Operasi Pepasangan Gas *Gas Installation Operations*	2	4
Jumlah *Total*	153	72

Pendakwaan dan Pengkompaunan

Untuk 2023, beberapa inisiatif diambil untuk meningkatkan tindakan perundangan ke atas kes ketidakpatuhan serta menambah baik proses pengeluaran kompaun dan semakan kertas siasatan. Ia termasuk:

- Sesi libat urus kertas siasatan bersama Jabatan Peguam Negara dan Jabatan Penguatkuasaan dan Operasi Kawasan
- Mengambil bahagian dalam Bengkel Penggubalan Akta Kecekapan dan Konservasi Tenaga
- Mengambil bahagian dalam Bengkel Pindaan Peraturan-Peraturan Elektrik 1994
- Pendedahan teknik pendakwaan kepada pegawai ST melalui kursus pendakwaan di Institut Latihan Kehakiman dan Perundangan (ILKAP)
- Sesi taklimat kertas siasatan oleh Timbalan Pendakwa Raya ST

Prosecution and Compound

For 2023, several initiatives were taken to enhance legal actions on cases of non-compliance, and improve the process of issuing compounds and reviewing investigation papers for non-compliance cases. These initiatives include:

- *Engagement session on investigation papers with the Attorney General's Chambers and the Department of Enforcement and Regional Operations*
- *Participation in the Workshop on Drafting the Energy Efficiency Conservation Act*
- *Participation in the Workshop on the Amendment of the Electricity Regulations 1994*
- *Exposure of prosecution techniques to the Commission's officers through prosecution courses at the Judicial and Legal Training Institute (ILKAP)*
- *Briefing sessions on investigation papers by the Commission's Deputy Public Prosecutor*

Jumlah Kertas Siasatan Dirujuk ke Jabatan Peguam Negara *Total Investigation Papers Referred to the Attorney General's Chamber*	**61**
Jumlah Kertas Siasatan Dirujuk ke Timbalan Pendakwa Raya ST *Total Investigation Papers Referred to the Commission's Deputy Public Prosecutor*	**342**
Jumlah Kes Pendakwaan *Total Prosecution Cases*	**5**
Jumlah Kompaun *Total Compounds*	**146**
Jumlah Kompaun Yang Telah Dibayar *Compound Paid*	**RM237,000.00**

Semakan semula prosedur pendakwaan telah dibuat untuk mempercepatkan proses mendapat arahan dan izin kompaun dan tuduh daripada Timbalan Pendakwa Raya. Hasilnya, pada 2023, bilangan kertas siasatan yang mendapat izin kompaun dan tuduh telah meningkat. Selain itu, keputusan kes dan kesalahan juga dipaparkan di laman web ST, dalam usaha meningkatkan tahap kepercayaan orang awam dan pemain industri kepada ST sebagai badan kawal selia sektor tenaga negara.

A review of the prosecution procedures has been conducted to expedite the process of obtaining directives and permits for compounds and charges from the Deputy Public Prosecutor. As a result, in 2023, the number of investigation papers receiving permits for compounds and charges has increased. Additionally, case outcomes and offences are also displayed on the Commission's website, aiming to enhance the level of public trust and industry players' confidence in the Commission as the regulator for the energy sector.

Sorotan Utama

Main Highlights

Rasionalisasi Proses Kelulusan bagi Pengeluaran Lesen Awam ST

ST telah memberi kelulusan untuk merasionalisasi proses kelulusan bagi empat (4) kategori pelesenan iaitu Lesen Awam (Penjanaan) [NEM GoMEn, NOVA dan *Solar SELCO Leasing*] serta permohonan Lesen Awam (Pengagihan) [EVCS] yang berkapasiti di bawah 5 MW kepada pengurusan ST mengikut kriteria kelulusan yang ditetapkan.

Rasionalisasi ini bertujuan untuk mempercepatkan tempoh kelulusan permohonan, serta meningkatkan kecekapan proses permohonan melalui pengurangan karenah birokrasi tanpa menjejaskan keutuhan proses permohonan pelesenan.

Melalui rasionalisasi ini, tempoh kelulusan bagi permohonan disasarkan dapat dikurangkan sehingga 30 hari bekerja berbanding 60 hari bekerja bagi proses kelulusan sedia ada.

Rationalisation of the Approval Process for the Issuance of the Commission's Public Licence

The Commission has approved the rationalisation of approval processes for four (4) licensing categories: Public Licence (Generation) (NEM GoMEn, NOVA, and Solar SELCO Leasing) as well as applications for Public Licence (Distribution) (EVCS) with a capacity below 5 MW, to be managed by the Commission's management according to the set approval criteria.

This rationalisation aims to expedite the approval period for applications and enhance the efficiency of the application process by reducing bureaucratic red tape without compromising the integrity of the licence application process.

Through this rationalisation, the approval period for applications is targeted to be reduced to up to 30 working days compared to the 60 working days for the existing approval process.

Penguatkuasaan Penggunaan Elektrik Secara Curang

Pada 27 Oktober 2022, ST telah menerima cadangan penurunan kuasa kepada Polis Diraja Malaysia (PDRM) bagi menyiasat kesalahan di bawah Seksyen 37(1) dan 37(3) Akta Bekalan Elektrik 1990. Cadangan penurunan kuasa ini telah diangkat kepada Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim dan diluluskan pada 14 Jun 2023.

Penurunan kuasa ini merupakan kolaborasi di antara ST dan PDRM yang bersifat *'complement each other'* bagi meningkatkan keberkesanan penguatkuasaan yang melibatkan aktiviti penggunaan elektrik dengan curang, yang seterusnya mengurangkan kehilangan tenaga dalam sistem pembekalan elektrik. Di samping itu, kerjasama ini dipercayai dapat mengekang sindiket perlombongan mata wang kripto serta aktiviti penggubahan wang haram. Penurunan kuasa ini juga dijangka dapat mempercepat dan meningkatkan bilangan pertuduhan di mahkamah serta dapat mensabitkan kesalahan dengan denda yang lebih tinggi di bawah Akta Bekalan Elektrik 1990 berbanding dengan Kanun Keseksaan.

Enforcement of the Dishonest Use of Electricity

On 27 October 2022, the Commission accepted the proposal to delegate power to the Royal Malaysia Police (RMP) to investigate offences under Section 37(1) and 37(3) of the Electricity Supply Act 1990. This proposal to delegate power was brought to the Minister of Natural Resources, Environment and Climate Change and was approved on 14 June 2023.

This delegation of power is a collaboration between the Commission and RMP, which complements each other to enhance the effectiveness of enforcement involving the dishonest use of electricity, thereby reducing energy losses in the electricity supply system. Additionally, this cooperation is believed to curb the cryptocurrency mining syndicates and illicit money laundering activities. This delegation of power is also expected to expedite and increase the number of charges in court and to impose higher fines under the Electricity Supply Act 1990 compared to the Penal Code.

Pada 21 hingga 23 November 2023, PDRM telah mengadakan Bengkel Pemurnian SOP Ops Letrik 2.0 bertujuan memperkemas prosedur standard pihak PDRM yang telah dibangunkan pada 2022, lanjutan daripada penurunan kuasa menyiasat kepada PDRM. Bengkel ini turut dihadiri oleh ST, ECoS, Tenaga Nasional Berhad (TNB), Sabah Electricty Sdn Bhd (SESB), Sarawak Enegry Berhad (SESB) dan National Anti-Financial Crime Centre (NFCC).

Di samping itu, sebanyak 370 operasi penggunaan elektrik secara curang telah dijalankan oleh PDRM bersama TNB dan SESB pada 2023. Daripada jumlah tersebut, 85 kes telah dibuat tangkapan dan 44 kes telah dituduh di mahkamah.

From 21 to 23 November 2023, RMP held the Ops Letrik 2.0 SOP Refinement Workshop aimed at strengthening the standard operating procedures developed by the RMP in 2022, following the delegation of investigation powers to RMP. This workshop was also attended by the Commission, ECoS, Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn Bhd (SESB), Sarawak Energy Berhad (SESB), and the National Anti-Financial Crime Centre (NFCC).

Aside from that, a total of 370 operations on dishonest use of electricity were conducted by RMP together with TNB and SESB in 2023. Out of this number, 85 cases resulted in arrests, and 44 cases were prosecuted in court.

Mesyuarat *Joint Regulatory Advisory Committee (JRAC) on Electrical and Electronic Equipment*

Mesyuarat JRAC yang ke-30 diadakan pada 7 Ogos 2023 di Washington, USA, dan dihadiri oleh 14 wakil anggota ekonomi dari Australia, Kanada, Chile, China, Hong Kong, Jepun, Korea, Malaysia, New Zealand, Papua New Guinea, Peru, Singapura, Taiwan dan Vietnam. Antara yang dibincangkan termasuk perkembangan terkini berkaitan akta, perundangan, peraturan dan kaedah proses kelulusan bagi kelengkapan elektrik dan elektronik.

Pada mesyuarat ini, Malaysia berkongsi tentang penambahan kategori kelengkapan elektrik di bawah skim MEPS kepada 10 kelengkapan iaitu peti sejuk, penyaman udara, lampu, televisyen, kipas angin, mesin basuh, ketuhar gelombang mikro, ketuhar elektrik, periuk nasi dan penyejuk beku. Selain itu, Malaysia juga menambah pengecas EV sebagai sub-kategori baru dalam senarai 34 kategori kelengkapan elektrik dan elektronik yang dikawal selia. Malaysia turut memperkenalkan label keselamatan kelengkapan elektrik dan elektronik terbaru yang ditambah baik dengan kod QR yang boleh diimbas dengan telefon pintar.

Topik lain yang dibincangkan termasuklah cabaran dalam mengawal selia kelengkapan elektrik yang dijual dalam talian, keselamatan produk yang menggunakan bateri serta pendidikan pengguna.

Joint Regulatory Advisory Committee (JRAC) on Electrical and Electronic Equipment Meeting

The 30th JRAC meeting was held on 7 August 2023 in Washington, USA, and was attended by 14 economic member representatives from Australia, Canada, Chile, China, Hong Kong, Japan, Korea, Malaysia, New Zealand, Papua New Guinea, Peru, Singapore, Taiwan and Vietnam. Among the topics discussed were recent developments related to acts, legislations, regulations, and approval processes for electrical and electronic equipment.

During this meeting, Malaysia shared about the addition of electrical equipment categories under the MEPS scheme to 10 equipments, that are refrigerators, air conditioners, lamps, televisions, fans, washing machines, microwave ovens, electric ovens, rice cookers and freezers. Additionally, Malaysia introduced EV chargers as a new sub-category in the list of 34 regulated electrical and electronic equipment categories. Malaysia also introduced an improved safety label for electrical and electronic equipment with a QR code that can be scanned with smartphones.

Other topics discussed included challenges in regulating electrical equipment sold online, product safety for battery-powered products and consumer education.



Delegasi pada Mesyuarat JRAC yang ke-30 yang diadakan di Seattle, Washington, USA
Delegation at the 30th JRAC Meeting held in Seattle, Washington, USA

Mesyuarat *Joint Sectoral Committee for Electrical and Electronic Equipment* (JSC EEE)

Mesyuarat JSC EEE yang ke-36 telah diadakan di Ha Long City, Vietnam pada 12-14 September 2023, dihadiri oleh Sekretariat ASEAN serta delegasi dari negara-negara ASEAN termasuk Malaysia, Brunei Darussalam, Kemboja, Indonesia, Filipina, Singapura, Lao PDR, Thailand dan Vietnam.

Antara yang dibincangkan termasuk pengemaskinian rejim kawal selia bagi kelengkapan elektrik dan elektronik berdasarkan maklum balas ahli-ahli Sekretariat ASEAN, pengemaskinian dan pengesahan draf prosedur penyenaraian badan penilaian pematuhan serta perkara-perkara berkaitan pelaksanaan perjanjian *ASEAN Harmonised EEE Regulatory Regime* (AHEEERR). Mesyuarat JSC EEE yang berikutnya akan diadakan secara virtual, dijangka pada 5-6 Mac 2024 dan akan dipengerusikan oleh Lao PDR.

Joint Sectoral Committee for Electrical and Electronic Equipment (JSC EEE) Meeting

The 36th JSC EEE meeting was held in Ha Long City, Vietnam, on 12-14 September 2023. It was attended by the ASEAN Secretariat and delegations from ASEAN countries, including Malaysia, Brunei Darussalam, Cambodia, Indonesia, the Philippines, Singapore, Lao PDR, Thailand and Vietnam.

Discussions revolved around updating the regulatory regime for electrical and electronic equipment based on feedback from ASEAN Secretariat, updating and approving draft procedures for compliance assessment bodies listing, and matters related to the implementation of the ASEAN Harmonised EEE Regulatory Regime (AHEEERR) agreement. The next JSC EEE meeting is expected to be held virtually on 5-6 March 2024, chaired by Lao PDR.



Mesyuarat Ke-36 JSC EEE yang diadakan di Ha Long City, Vietnam
The 36th JSC EEE Meeting held in Ha Long City, Vietnam

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Perancangan Pembangunan Kapasiti

Capacity Development Plan

Pada 2023, Kerajaan mengekalkan sasaran kapasiti tenaga boleh baharu (TBB) di Malaysia sebanyak 31% menjelang 2025, dan seterusnya 40% menjelang 2040. Secara amnya, penjanaan tenaga melalui TBB di Semenanjung menunjukkan peningkatan, di samping penjanaan tenaga daripada sumber bahan api arang batu dan gas. Sebanyak tiga (3) projek solar berskala besar (LSS) telah ditambah ke dalam sistem, dengan beberapa lagi dijadualkan beroperasi menjelang akhir 2024.

In 2023, the Government maintained the target for renewable energy (RE) capacity in Malaysia at 31% by 2025, and further aimed for 40% by 2040. Generally, electricity generation through RE in the Peninsula has shown an increase, apart from energy generated from coal and gas fuel sources. A total of three (3) large-scale solar (LSS) projects have been integrated into the system, with several more scheduled to start operation by the end of 2024.

Stesen-stesen Jana Kuasa di Semenanjung, 2023

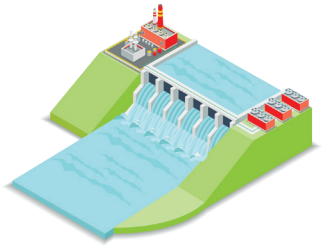
Power Plants in the Peninsula, 2023



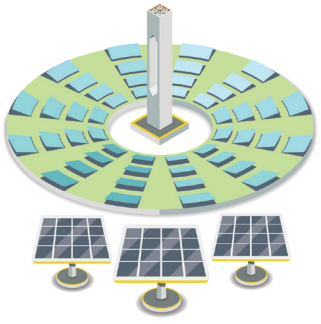
14 **Gas** *Gas*



8 **Arang Batu** *Coal*



7 **Hidro** *Hydro*



61 **LSS** *LSS*

90

Jumlah

Total

Pelan Pembangunan Penjanaan Semenanjung Malaysia (2023–2050)

Pada 24 November 2023, Pelan Pembangunan Penjanaan Semenanjung Malaysia (2023–2050) telah diluluskan oleh Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tarif (JPPPET), yang dipengerusikan oleh Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim.

The Peninsular Malaysia Generation Development Plan (2023–2050)

On 24 November 2023, the Peninsular Malaysia Generation Development Plan (2023–2050) was approved by the Planning and Implementation Committee for Electricity Supply and Tariff (JPPPET), chaired by the Minister of Natural Resources, Environment and Climate Change.

Pelan ini bertujuan memastikan bekalan yang berdaya harap dan terjamin dapat disediakan kepada pengguna pada harga yang berpatutan, di samping berupaya memenuhi aspirasi Kerajaan serta komitmen antarabangsa.

Pelan ini dibangunkan berdasarkan unjuran permintaan elektrik dan ekonomi negara di mana kriteria perancangan termasuk mengoptimumkan tahap margin rizab, mengurangkan *loss of load expectation* (LOLE) untuk memastikan penjanaan dan penghantaran adalah selaras dengan daya harap pembekalan serta mengurangkan skor *Herfindhal-Hirschman Index* (HHI) bagi memastikan kepelbagaian campuran bahan api dan keberterusan bekalan tenaga. HHI mengukur kepelbagaian campuran bahan api di mana semakin rendah jumlah, semakin tinggi kepelbagaian bahan api dan keberterusan bekalan tenaga.

Pelan ini juga mengambil kira polisi dan aspirasi Kerajaan seperti peningkatan kapasiti penjanaan TBB di Malaysia kepada sasaran 31% menjelang 2025 dan 40% menjelang tahun 2040, dan seterusnya sasaran 70% menjelang 2050 selaras dengan Pelan Hala Tuju Peralihan Tenaga Negara (NETR). Pengenalan teknologi penstoran tenaga juga ditekankan bagi memastikan kestabilan dan keselamatan grid. Pengurangan sebanyak 45% intensiti pelepasan gas rumah hijau (GHG) menjelang 2030 dan 60% menjelang 2035 juga termasuk dalam kriteria perancangan, selain penetapan sasaran sifar karbon bersih seawal 2050. Selain itu, ketersediaan bahan api, teknologi penjanaan, potensi sambung tara dan kemajuan projek-projek talian penghantaran sedia ada turut diambil kira.

Berdasarkan pertimbangan-pertimbangan tersebut, pelan ini berperanan menentukan campuran kapasiti, campuran bahan api dan margin rizab yang optimum bagi 27 tahun akan datang.

This plan aims to ensure that a reliable and secure supply can be provided to consumers at a reasonable price, in addition to being able to meet the Government's aspirations as well as international commitments.

The plan was developed based on the country's projected electricity demand and economy, where planning criteria include optimising reserve margin levels, reducing the loss of load expectation (LOLE) to ensure generation and transmission are aligned with expected supply capacity, and reducing the Herfindahl-Hirschman Index (HHI) score to ensure fuel mix diversity and energy supply security. HHI measures the diversity of fuel mix, where a lower value indicates higher fuel diversity and energy supply security.

The plan also took into account Government policies and aspirations to increase RE generation capacity in Malaysia to 31% by 2025 and 40% by 2040, and subsequently, 70% by 2050 in line with the National Energy Transition Roadmap (NETR). It also emphasises the introduction of energy storage technologies for grid stability and safety. Reduction targets of 45% in greenhouse gas (GHG) emissions intensity by 2030 and 60% by 2035 are also part of the planning criteria, alongside achieving net-zero carbon emissions as early as 2050. Besides that, fuel availability, generation technology, potential interconnections, and the progress of ongoing transmission line projects were also considered.

Based on these considerations, the plan plays a crucial role in determining the optimal mix of capacity, fuel mix and reserve margins for the next 27 years.

Campuran Kapasiti Terpasang

Kapasiti terpasang bagi TBB di Semenanjung dijangka bertambah daripada 23% pada 2023 kepada 31% menjelang 2025 dan 78% menjelang 2050.

Dalam tempoh 27 tahun akan datang, pengurangan ketara dijangka berlaku bagi penjanaan berasaskan bahan api fosil, daripada 77% pada 2023 kepada 13% pada 2050. Pengurangan terbesar adalah bagi arang batu, iaitu daripada 40% pada 2023 kepada 36% pada 2025 dan 0% menjelang 2050.

Installed Capacity Mix

The Peninsula's RE installed capacity is expected to increase from 23% in 2023 to 31% by 2025 and 78% by 2050.

Over the next 27 years, a significant reduction is anticipated in fossil fuel-based generation, from 77% in 2023 to 13% in 2050. The largest reduction will be in coal-based power generation, from 40% in 2023 to 36% by 2025 and phasing out completely by 2050.

Dalam tahun-tahun yang mendatang, penjanaan melalui sumber TBB dijangka mendominasi campuran kapasiti. Selain itu, penambahan potensi sambung tara telah diambil kira demi memenuhi kriteria perancangan HHI.

Bagi mencapai sasaran 78% kapasiti TBB di Semenanjung menjelang 2050, purata 2.5 GW kapasiti TBB perlu dibangunkan setiap tahun di Semenanjung bermula 2026. Keperluan kapasiti baharu ini merangkumi kapasiti tenaga solar sahaja.

Kestabilan sistem grid dijangka kekal terkawal dengan kemasukan teknologi penstoran tenaga seperti sistem storan tenaga bateri (BESS).

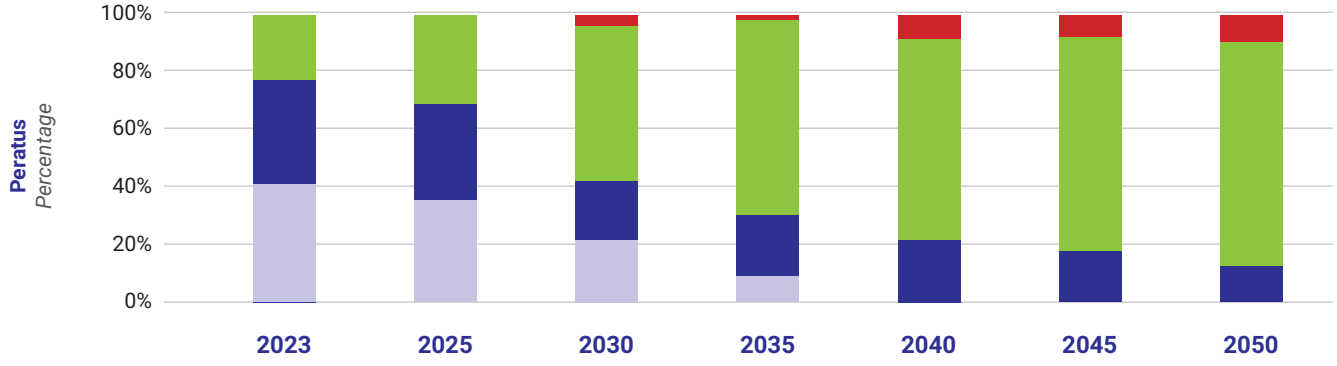
In the coming years, generation from RE sources is expected to dominate the capacity mix. Additionally, increase in interconnection potential have been considered to meet HHI planning criteria.

In order to achieve the 78% RE target in the Peninsula by 2050, an average of 2.5 GW of RE capacity needs to be developed annually starting from 2026. This required new capacity includes only solar energy capacity.

Grid system stability is expected to remain stable with the introduction of energy storage technologies such as battery energy storage systems (BESS).

Campuran Kapasiti Terpasang di Semenanjung, 2023–2050

Installed Capacity Mix in the Peninsula, 2023–2050



	2023	2025	2030	2035	2040	2045	2050
Arang Batu *Coal*	40%	36%	21%	8%	5%	0%	0%
Gas *Gas*	37%	33%	21%	23%	17%	18%	13%
TBB *RE*	23%	31%	55%	67%	70%	74%	78%
Sambung tara *Interconnection*	0%	0%	3%	2%	8%	8%	9%

Campuran Tenaga

Walaupun secara puratanya TBB mendominasi campuran kapasiti bagi tempoh sehingga 2050, dari segi campuran tenaga, arang batu mendahului penjanaan bahan api yang lain iaitu pada 55%, berbanding gas pada 31% dan 14% TBB pada 2025, disebabkan unjuran harganya yang lebih rendah.

Energy Mix

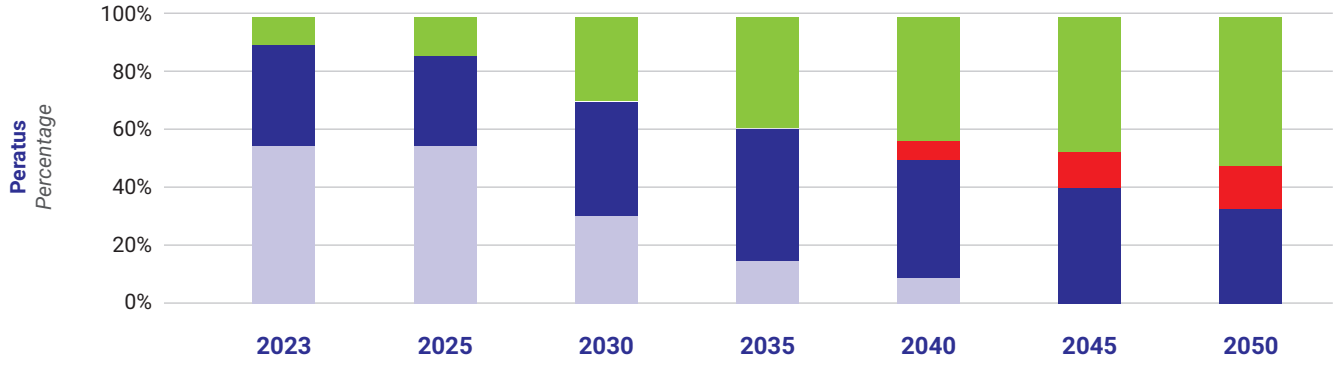
Although on average, RE will dominate the capacity mix until 2050, in terms of energy mix, coal will lead other fossil fuel generation at 55%, compared to gas at 31% and 14% RE by 2025 due to its lower cost projections.

Bagaimanapun, komposisi arang batu dalam campuran dijangka akan menunjukkan trend menurun dalam tempoh 20 tahun seterusnya, didorong oleh perancangan penamatan awal loji jana kuasa arang batu menjelang 2040. Pada 2050, TBB akan mendominasi campuran tenaga pada 52%, diikuti dengan gas pada 33%, dan sambung tara pada 15%.

However, the composition of coal in the mix is expected to decline over the next 20 years, driven by early retirement plans for coal-fired power plants by 2040. By 2050, RE will dominate the energy mix at 52%, followed by gas at 33%, and interconnections at 15%.

Campuran Tenaga di Semenanjung, 2023–2050

Energy Mix in the Peninsula, 2023–2050



	2023	2025	2030	2035	2040	2045	2050
Arang Batu *Coal*	55%	55%	31%	15%	9%	0%	0%
Gas *Gas*	35%	31%	39%	46%	42%	40%	33%
TBB *RE*	10%	14%	30%	39%	44%	48%	52%
Sambung tara *Interconnection*	0%	0%	0%	0%	5%	12%	15%

Margin Rizab

Jumlah kapasiti terpasang di Semenanjung berkurang sebanyak 590 MW menjadikan jumlah keseluruhan kapasiti terpasang di Semenanjung sebanyak 27,185 MW, walaupun dengan permulaan operasi projek LSS Idiwan Solar Sdn. Bhd. (30 MW) pada April 2023, JAKS Solar Nibong Tebal Sdn. Bhd. (50 MW) pada Ogos 2023 dan TNB Bukit Selambau Solar 2 Sdn. Bhd. (50 MW) pada Disember 2023. Ini disebabkan penamatan operasi loji jana kuasa Panglima Power Berhad (720 MW) pada 27 Februari 2023.

Dengan rekod permintaan maksimum sebanyak 19,716 MW, margin rizab pada 31 Disember 2023 ialah 33%. Kadar margin rizab diunjurkan berada dalam lingkungan 30% bermula dari 2031, bagi memastikan keberterusan bekalan elektrik untuk memenuhi permintaan elektrik yang pesat terutamanya daripada pangkalan data.

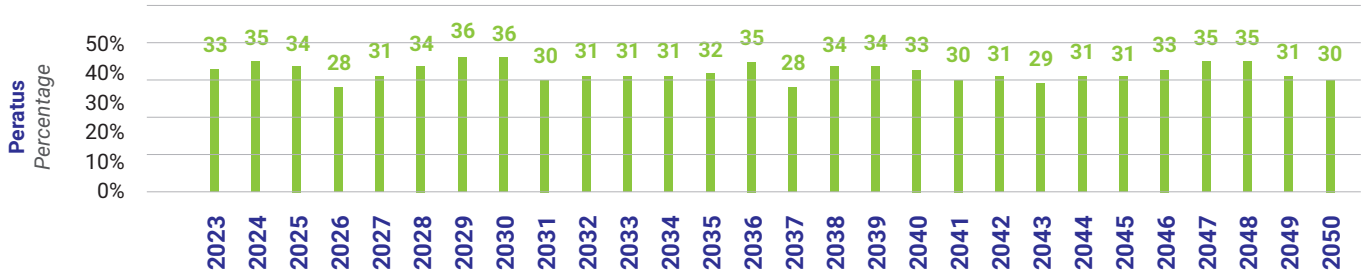
Reserve Margin

The total installed capacity in the Peninsula decreased by 590 MW, making the overall installed capacity 27,185 MW, despite the commissioning of the LSS Idiwan Solar Sdn. Bhd. project (30 MW) in April 2023, JAKS Solar Nibong Tebal Sdn. Bhd. (50 MW) in August 2023, and TNB Bukit Selambau Solar 2 Sdn. Bhd. (50 MW) in December 2023. This reduction was due to the closure of Panglima Power Berhad power plant (720 MW) on 27 February 2023.

With a record peak demand of 19,716 MW, the reserve margin as of 31 December 2023 was 33%. The reserve margin rate is projected to be around 30% from 2031 onwards, ensuring a secure supply of electricity to meet the rapid demand, especially from data centres.

Unjuran Margin Rizab, 2023–2050

Reserve Margin Projections, 2023–2050



Nota:
Margin rizab bagi 2023 adalah merujuk kepada permintaan puncak 19,716 MW yang direkodkan pada 11 Mei 2023 dan kapasiti terpasang sebanyak 27,185 MW termasuk kredit kapasiti 17% daripada 1,189 MW LSS pada rangkaian penghantaran.

Margin rizab pada 2023 ialah 7% lebih rendah iaitu sebanyak 33% berbanding paras margin rizab pada 2022. Penurunan margin rizab disebabkan oleh penamatan operasi loji jana kuasa Panglima Power Berhad (720 MW) dan juga kenaikan kepada permintaan maksimum yang didorong oleh peningkatan permintaan elektrik daripada kenderaan elektrik dan pangkalan data.

Di Sabah pula, margin rizab mencatat penurunan disebabkan gangguan yang tidak dirancang oleh Stesen Jana Kuasa Patau-Patau dan Stesen Jana Kuasa Tenom Pangi. Margin rizab sehingga hujung 2023 ialah 10%, lebih rendah berbanding 23% pada 2022. Selain prestasi stesen-stesen jana kuasa sedia ada yang tidak baik, kekangan kapasiti penjanaan daripada projek-projek yang mengalami kelewatan juga menyebabkan penurunan margin rizab.

Nota:
Margin rizab bagi 2023 adalah merujuk kepada permintaan puncak 1,090 MW yang direkodkan pada 15 November 2023.

Note:
The reserve margin for 2023 refers to the peak demand of 19,716 MW recorded on 11 May 2023, and the installed capacity of 27,185 MW, including a capacity credit of 17% from 1,189 MW of LSS on the transmission network.

The reserve margin in 2023 was 7% lower at 33% compared to the reserve margin level in 2022. The decrease in reserve margin was due to the closure of Panglima Power Berhad power plant (720 MW) and an increase in maximum demand driven by rising electricity demand from electric vehicles and data centres.

Meanwhile, in Sabah, the reserve margin recorded a decline due to unplanned disruptions at the Patau-Patau Power Station and Tenom Pangi Power Station. The reserve margin by the end of 2023 was 10%, down from 23% in 2022. Apart from the underperformance of existing power stations, capacity constraints from delayed projects also contributed to the decline in reserve margin.

Note:
The reserve margin for 2023 is based on a peak demand of 1,090 MW recorded on 15 November 2023.

Projek Pembangunan Pembekalan Tenaga Berimpak Tinggi

Selain projek-projek penjanaan, ST turut memantau rapat pelaksanaan projek-projek penghantaran baharu terutamanya projek berimpak tinggi.

High-Impact Energy Supply Development Projects

In addition to generation projects, the Commission also closely monitors the implementation of new transmission projects, especially high-impact projects.

Projek Talian Penghantaran di Semenanjung, 2023
Transmission Line Projects in the Peninsula, 2023

Bil *No*	Projek *Project*	Lokasi *Location*
1	500 kV OHL Ayer Tawar – Bentong South	Perak, Selangor & Pahang
2	500 kV OHL Bentong South - Lenggeng	Pahang, Selangor & Negeri Sembilan
3	500 kV OHL Lenggeng – Yong Peng East	Negeri Sembilan & Johor
4	275 kV OHL Supply to Penang Island	Pulau Pinang

Projek-projek penghantaran seperti yang disenaraikan merupakan sebahagian daripada sistem talian penghantaran 500 kV/275 kV dari utara ke selatan, yang merupakan tulang belakang bagi membolehkan penyaluran tenaga secara pukal ke semua kawasan di Semenanjung terutamanya kawasan beban tinggi seperti di Wilayah Tengah. Sebarang kelewatan terhadap projek-projek talian penghantaran tersebut akan menyebabkan kekangan terhadap evakuasi tenaga di antara wilayah.

Pada 4 September 2022, projek talian penghantaran 500 kV Lenggeng-Yong Peng East telah dimula tugas sepenuhnya dan telah mengurangkan kekangan teknikal bagi evakuasi tenaga antara Wilayah Selatan dan Wilayah Tengah. Seterusnya, projek-projek talian penghantaran lain sedang dilaksanakan dan dijangka akan dimula tugas secara berperingkat mulai penghujung 2024.

Transmission projects listed are part of the 500 kV/275 kV transmission line system from north to south, which forms the backbone in enabling bulk power distribution across all areas in the Peninsula, especially high-load areas like the Central Region. Any delays in these transmission projects would restrict the evacuation of power between regions.

On 4 September 2022, the 500 kV transmission line project from Lenggeng to Yong Peng East commenced full operation, alleviating technical constraints in power evacuation between the Southern and Central Regions. Subsequently, other transmission line projects are currently under implementation and expected to commence operations gradually starting from late 2024.

Pelaksanaan Akses Pihak Ketiga (TPA)

Implementation of the Third-Party Access (TPA)

Bagi memperkukuhkan pelaksanaan Aturan Akses, Mesyuarat *Access Arrangement Working Group* (AAWG) giat dijalankan. Sepanjang 2023, mesyuarat ini bersidang sebanyak tiga (3) kali untuk membincangkan penambahbaikan kepada dokumen *Access Arrangement* Terminal Pengegasan Semula Sungai Udang. Ia termasuk pelaksanaan konsep penempahan kapasiti dan penambahbaikan konsep *Use it or Lose it* (UIOLI) sedia ada, yang membuka peluang kepada shippers untuk berada dalam pasaran gas tanpa kompromi.

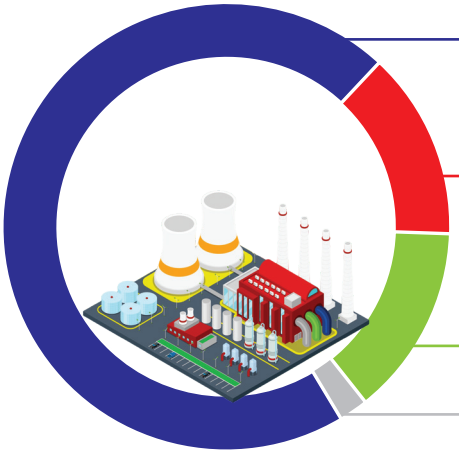
To strengthen the implementation of the Access Arrangement, the Access Arrangement Working Group (AAWG) conducted active meetings throughout 2023, convening three (3) times to discuss enhancements to the Sungai Udang Regasification Terminal Access Arrangement document. This includes implementing the capacity booking concept and improving the existing Use it or Lose it (UIOLI) concept, which provides shippers with market access opportunities without compromise.

Selain itu, satu lagi inisiatif yang mendapat sokongan pemain pasaran ialah *Integrated Open Season* (IOS), yang dilaksanakan untuk menilai permintaan pasaran dengan menilai keperluan kapasiti baharu dan kemungkinan pengembangan sama ada di terminal pengegasan semula, saluran penghantaran atau saluran pengiriman. Pelaksanaan IOS ini juga merupakan satu inisiatif yang terdapat dalam pelan tindakan NETR, di mana Petronas Gas Berhad (PGB) dan Gas Malaysia Distribution (GMD) dilantik sebagai perancang utama.

Additionally, another initiative supported by market players is the Integrated Open Season (IOS), aimed at assessing market demand by evaluating the need for new capacity and potential expansions either at the regasification terminal, transmission pipelines, or delivery pipelines. The implementation of IOS is also part of the NETR action plan, with Petronas Gas Berhad (PGB) and Gas Malaysia Distribution (GMD) appointed as lead planners.

Jumlah Bekalan Gas Asli di Semenanjung, 2023

Total Natural Gas Supply in the Peninsula, 2023



Sumber Bekalan *Source of Supply*	Jumlah (MMSCF) *Total (MMSCF)*	Jumlah Kargo LNG *Total of LNG Cargo*
Gas Processing Plant Kerteh	562,089.83	-
TTM-JDA	108,434.52	-
RGT Pengerang	110,017.68	42
RGT Sungai Udang	16,057.31	8
Jumlah *Total*	**796,599.34**	**50**

Sorotan Utama

Main Highlights

Mesyuarat JPPPET

Pada 24 November 2023, Kabinet telah meluluskan Pelan Pembangunan Penjanaan Semenanjung Malaysia yang telah diperakui oleh JPPPET bagi 2023. Pelan tersebut dibangunkan dengan memenuhi kriteria-kriteria perancangan yang ditetapkan serta bertujuan untuk mengimbangi tiga (3) elemen dalam Trilema Tenaga yang merangkumi jaminan, kemampuan dan kelestarian bekalan elektrik. Semakan terhadap Pelan Pembangunan Penjanaan Semenanjung Malaysia (2023–2050) telah dilaksanakan dengan mengambil kira situasi semasa ekonomi negara, terutamanya dengan kemasukan pelaburan pusat data.

JPPPET Meeting

On 24 November 2023, the Cabinet approved the Peninsular Malaysia Generation Development Plan endorsed by JPPPET for 2023. The plan was developed to meet specified planning criteria and aims to balance the three elements of the Energy Trilemma: security, affordability and sustainability of electricity supply. A review of the Peninsular Malaysia Generation Development Plan (2023–2050) was conducted considering the current economic situation, particularly with the influx of data centre investments.

Pelan ini juga adalah selaras dengan pelancaran NETR Fasa 1 pada Julai 2023 dan NETR Fasa 2 pada Ogos 2023, yang disokong oleh objektif bagi mengemudi peralihan sektor tenaga ke arah mencapai sasaran pelepasan GHG sifar bersih seawal 2050. NETR menumpukan enam (6) pemacu utama peralihan tenaga iaitu kecekapan tenaga (EE), TBB, hidrogen, biotenaga, mobiliti hijau dan pemerangkapan, pengangkutan dan penyimpanan karbon (CCUS). Lanjutan itu, pelan pembangunan penjanaan yang diluluskan lebih menumpukan kepada pembangunan TBB terutamanya sasaran solar yang lebih tinggi.

Pelan ini turut menekankan bahawa kajian lanjut diperlukan dengan mengambil kira landskap tenaga masa hadapan seperti kesesuaian jenis teknologi BESS, potensi sambung tara dan teknologi baharu seperti teknologi hidrogen dan reaktor kecil bermodul (SMR).

The plan is also aligned with the launch of NETR Phase 1 in July 2023 and NETR Phase 2 in August 2023, supported by objectives to drive the energy sector transition towards achieving net-zero GHG emissions by 2050. NETR focuses on six key drivers of energy transition: energy efficiency (EE), RE, hydrogen, bioenergy, green mobility, and carbon capture, utilisation and storage (CCUS). Therefore, the approved generation development plan emphasises the development of RE, particularly higher targets for solar energy.

The plan underscores the need for further studies considering future energy landscapes, such as the suitability of BESS technologies, potential interconnections, and new technologies like hydrogen technology and small modular reactors (SMR).

Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP)

LTMS-PIP telah memulakan penghantaran tenaga dari Lao PDR ke Singapura pada 23 Jun 2022, dengan kapasiti perdagangan tenaga sehingga 100 MW dan tempoh projek selama dua (2) tahun. Tenaga elektrik ini disalurkan dari Lao PDR ke Singapura melalui sistem talian penghantaran sedia ada di Thailand dan Malaysia. Sepanjang 2023, sebanyak 270 GWj tenaga elektrik telah disalurkan dari Lao PDR ke Singapura melalui talian penghantaran Semenanjung.

ST turut membantu dari segi pelaksanaan, pemantauan dan pelaporan projek LTMS-PIP, daripada aspek-aspek teknikal, komersial dan perundangan kawal selia, termasuk mempengerusikan mesyuarat *Commercial Task Force* yang diadakan pada 30 Mei 2023 di Singapura.

Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP)

LTMS-PIP has initiated the power transmission from Lao PDR to Singapore on 23 June 2022, with a trading capacity of up to 100 MW and a project duration of two (2) years. This electricity is transmitted from Lao PDR to Singapore through the existing transmission systems in Thailand and Malaysia. Throughout 2023, a total of 270 GWh of electricity has been transmitted from Lao PDR to Singapore via the Peninsula transmission line.

The Commission also assisted in the implementation, monitoring and reporting of the LTMS-PIP project, covering technical, commercial and regulatory oversight aspects, including chairing the Commercial Task Force meeting held on 30 May 2023 in Singapore.

3

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Permintaan Elektrik

Semenanjung

Pada 2023, permintaan puncak sistem grid di Semenanjung mencatat rekod tertinggi sebanyak 19,716 MW pada 11 Mei 2023, peningkatan 2.8 peratus berbanding 19,183 MW pada tahun sebelumnya. Secara keseluruhan, permintaan puncak sistem grid menunjukkan peningkatan yang tinggi pada pertengahan 2023 berikutan fenomena El Nino yang melanda negara. Bacaan permintaan puncak bulanan kemudiannya menunjukkan penurunan dari Oktober sehingga Disember 2023 berikutan faktor peralihan Monsun Timur Laut.

Electricity Demand

The Peninsula

In 2023, the peak demand of the grid system in the Peninsula recorded its highest-ever level at 19,716 MW on 11 May 2023, marking a 2.8 percent increase compared to 19,183 MW the previous year. Overall, the peak grid system demand showed significant growth in mid-2023 due to the El Nino phenomenon affecting the country. Monthly peak demand readings then showed a decline from October to December 2023 due to the transition of the Northeast Monsoon.

Permintaan Puncak Di Semenanjung, 2021–2023

Peak Demand in the Peninsula, 2021–2023



2021	2022	2023
18,585 MW	**19,183 MW**	**19,716 MW**
13 Oktober 2021 *13 October 2021*	24 Mei 2022 *24 May 2022*	11 Mei 2023 *11 May 2023*

Jumlah penjanaan elektrik di Semenanjung pada 2023 mencatatkan peningkatan sebanyak 2.29% kepada 133,613 GWj, berbanding 130,625 GWj pada 2022. Peningkatan ini disebabkan oleh peningkatan aktiviti sosioekonomi termasuk pemulihan sektor industri yang semakin berkembang, selain faktor peningkatan suhu harian.

In 2023, the total electricity generation in the Peninsula increased by 2.29% to 133,613 GWh, compared to 130,625 GWh in 2022. This increase was driven by rising socio-economic activities, including the recovery of the expanding industrial sector, alongside factors such as increasing daily temperatures.

Sabah

Di Sabah pula, permintaan puncak dicatatkan pada 1,090.7 MW bagi 2023, peningkatan sebanyak 5.6% berbanding 2022. Jumlah bekalan tahunan yang direkodkan bagi 2023 pula ialah 7,286.9 GWj, peningkatan sebanyak 5.4% berbanding 2022. Ini merupakan kesan daripada peningkatan aktiviti ekonomi dan sosial serta permintaan bekalan secara *step-load* daripada pengguna berskala besar.

Sabah

In Sabah, the peak demand recorded for 2023 was 1,090.7 MW, marking a 5.6% increase from 2022. The annual supply recorded for 2023 was 7,286.9 GWh, reflecting a 5.4% increase from 2022. This is a result of increased economic and social activities, as well as stepload demand for supply from large-scale users.

Permintaan Puncak di Sabah dan Labuan, 2021–2023

Peak Demand in Sabah and Labuan, 2021–2023



2021	2022	2023
1,002.8 MW	**1,032.1 MW**	**1,090.7 MW**
28 Mei 2021 *28 May 2021*	11 Ogos 2022 *11 August 2022*	15 November 2023 *15 November 2023*

Kapasiti Penjanaan

Semenanjung

Jumlah kapasiti terpasang daripada penjanaan stesen jana kuasa di Semenanjung pada 2023 ialah 27,185 MW, dengan campuran kapasiti yang terdiri daripada arang batu (57.1%), gas (36.5%), hidro (4.6%), solar (1.6%), dan lain-lain (0.2%). Jumlah tenaga yang dijana dibekalkan kepada pengguna industri (36%), pengguna komersial (35%), pengguna domestik (27%), dan 2% yang selebihnya dibekalkan kepada aktiviti perlombongan, pertanian dan lampu awam.

Generation Capacity

The Peninsula

The total installed capacity from the power stations generation in the Peninsula in 2023 was 27,185 MW, with a capacity mix consisting of coal (57.1%), gas (36.5%), hydro (4.6%), solar (1.6%) and others (0.2%). The generated power is supplied to industrial users (36%), commercial users (35%), domestic users (27%) and the remaining 2% is supplied to mining activities, agriculture and public lighting.

Kapasiti Terpasang di Semenanjung, 2022–2023

Installed Capacity in the Peninsula, 2022–2023

	2022	2023
Kapasiti Terpasang *Installed Capacity*	**Arang batu (12,180 MW)** *Coal (12,180 MW)*	**Arang batu (12,180 MW)** *Coal (12,180 MW)*
	Gas (12,000 MW) *Gas (12,000 MW)*	**Gas (11,280 MW)** *Gas (11,280 MW)*
	Hidro (2,240 MW) *Hydro (2,240 MW)*	**Hidro (2,240 MW)** *Hydro (2,240 MW)*
	LSS (1,060 MW) *LSS (1,060 MW)*	**LSS (1,189 MW)** *LSS (1,189 MW)*
	Hidro mini (295 MW) *Mini hydro (295 MW)*	**Hidro mini (295 MW)** *Mini hydro (295 MW)*
	Jumlah: 27,775 MW *Total: 27,775 MW*	**Jumlah: 27,185 MW** *Total: 27,185 MW*
Margin Rizab *Reserve Margin*	**40%**	**33%**
Permintaan Maksimum *Peak Demand*	**19,183 MW**	**19,716 MW**
Penjanaan Tenaga *Energy Generation*	**398.523 GWj** *398.523 GWh*	**420.212 GWj** *420.212 GWh*
Tarikh *Date*	**24 Mei 2022** *24 May 2022*	**11 Mei 2023** *11 May 2023*
Jumlah Tenaga *Total Energy*	**130,625 GWj** *130,625 GWh*	**133,613 GWj** *133,613 GWh*

Jumlah kapasiti terpasang di Semenanjung berkurangan dengan penamatan operasi stesen jana kuasa Panglima Power Berhad (720 MW) pada 27 Februari 2023, walaupun sistem grid menerima penambahan kapasiti dengan permulaan operasi projek Solar Berskala Besar (LSS) Idiwan Solar Sdn. Bhd. (30 MW) pada April 2023, JAKS Solar Nibong Tebal Sdn. Bhd. (50 MW) pada Ogos 2023 dan TNB Bukit Selambau Solar 2 Sdn. Bhd. (50 MW) pada Disember 2023.

The installed capacity in the Peninsula decreased due to the closure of Panglima Power Berhad power generation station (720 MW) on 27 February 2023, despite the grid system received additional capacity with the commencement of operations of Large Scale Solar (LSS) projects such as Idiwan Solar Sdn. Bhd. (30 MW) in April 2023, JAKS Solar Nibong Tebal Sdn. Bhd. (50 MW) in August 2023, and TNB Bukit Selambau Solar 2 Sdn. Bhd. (50 MW) in December 2023.

Sabah

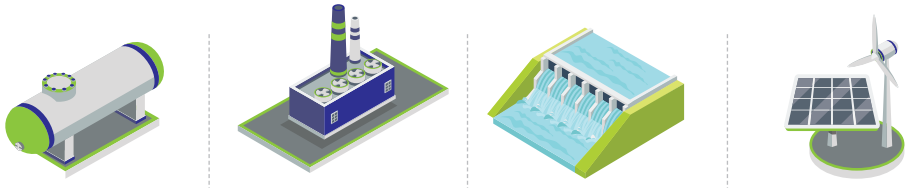
Kapasiti penjanaan elektrik di Sabah terdiri daripada stesen jana kuasa gas, diesel, hidro dan tenaga boleh baharu (TBB) seperti solar, biojisim dan biogas. Pada 2023, kapasiti boleh harap di Sabah ialah sebanyak 1,177 MW, menurun 7% berbanding 1,268 MW pada 2022. Penurunan ini disebabkan oleh perubahan bagi kapasiti yang diisytiharkan di stesen-stesen jana kuasa Tenom Pangi, Tawau, Sandakan, Patau-Patau dan Serudong, disebabkan faktor henti tugas yang lama dan usia loji.

Sabah

Electricity generation capacity in Sabah consists of power stations using gas, diesel, hydro and renewable energy (RE) sources like solar, biomass and biogas. In 2023, the dependable capacity in Sabah was 1,177 MW, a decrease of 7% compared to 1,268 MW in 2022. This decrease is due to changes in declared capacities at power stations such as Tenom Pangi, Tawau, Sandakan, Patau-Patau and Serudong, attributed to prolonged outages and aging facilities.

Kapasiti Boleh Harap di Sabah, 2022–2023

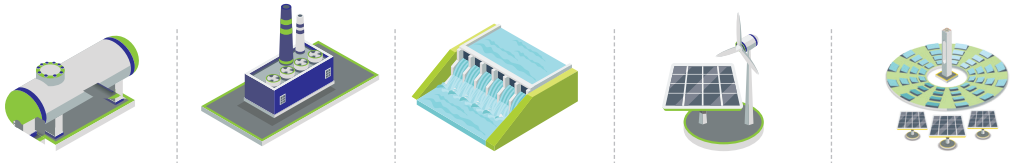
Dependable Capacity in Sabah, 2022–2023



	Gas *Gas*	**Diesel** *Diesel*	**Hidro** *Hydro*	**TBB** *RE*	**Jumlah** *Total*
2022	**961.38 MW**	**193.98 MW**	**86.36 MW**	**26.37 MW**	**1,268.10 MW**
2023	**936.76 MW**	**194.7 MW**	**19.48 MW**	**26.37 MW**	**1,177.30 MW**

Kapasiti Terpasang di Sabah, 2022–2023

Installed Capacity in Sabah, 2022–2023



	Gas *Gas*	**Diesel** *Diesel*	**Hidro** *Hydro*	**TBB** *RE*	**LSS** *LSS*	**Jumlah** *Total*
2022	**1,124.64 MW**	**243.20 MW**	**98.40 MW**	**35.30 MW**	**50.00 MW**	**1,551.40 MW**
2023	**1,124.64 MW**	**257.00 MW**	**98.40 MW**	**35.30 MW**	**50.00 MW**	**1,565.30 MW**

Di Sabah, Mesyuarat JPPPET Bil.1/2023 telah diadakan pada 12 Jun 2023 dan dipengerusikan bersama oleh Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim dan Ketua Menteri Sabah. Bagi menangani isu kecukupan bekalan, mesyuarat bersetuju untuk melaksanakan beberapa program kapasiti penjanaan jangka pendek bagi meningkatkan kapasiti penjanaan dengan segera. Dalam hal ini, ST telah mengarahkan SESB untuk melaksanakan beberapa inisiatif termasuk pelaksanaan sewaan kapasiti jangka pendek 100 MW.

Lanjutan daripada keputusan untuk menyerahkan kuasa kawal selia elektrik di Sabah kepada Kerajaan Negeri, mesyuarat juga berbincang dan memutuskan inisiatif-inisiatif yang boleh dilaksanakan pasca penyerahan kawal selia pada 2024.

Bagi pembekalan elektrik di Labuan pula, beberapa sesi sumbang saran yang turut dihadiri oleh agensi-agensi berkaitan diadakan sepanjang 2023 bagi mendapatkan pandangan dan cadangan penyelesaian jangka pendek dan jangka panjang, meliputi perkara-perkara berkaitan dasar, rangka kerja kawal selia, tarif dan pelan pembangunan penjanaan. Pelan pembangunan penjanaan bagi Labuan telah dibentangkan dalam mesyuarat JPPPET Bil. 1/2023 pada 24 November 2023. Selari dengan pengumuman yang dibuat oleh Perdana Menteri, kerja-kerja berkaitan pelaksanaan loji jana kuasa baharu sedang dilakukan bagi memastikan loji baharu tersebut dapat beroperasi mulai 2028.

In Sabah, the JPPPET Meeting No. 1/2023 was held on 12 June 2023, jointly chaired by the Minister of Natural Resources, Environment and Climate Change and the Chief Minister of Sabah. To address supply adequacy issues, the meeting agreed to implement several short-term generation capacity programmes to immediately increase generation capacity. In this regard, the Commission directed SESB to implement several initiatives, including a 100 MW short-term capacity rental.

Following the decision to transfer electricity regulatory authority in Sabah to the State Government, the meeting also discussed and decided on initiatives that can be implemented post-transfer of regulatory authority in 2024.

Regarding electricity supply in Labuan, several brainstorming sessions attended by relevant agencies were held throughout 2023 to gather views and proposals for short-term and long-term solutions, covering policy matters, regulatory frameworks, tariffs and generation development plans. The generation development plan for Labuan was presented at the JPPPET Meeting No. 1/2023 on 24 November 2023. In line with the announcement made by the Prime Minister, works on new power plants is underway to ensure these facilities are operational from 2028 onwards.

Campuran Penjanaan

Tahun 2023 menyaksikan peningkatan penggunaan bahan api arang batu bagi penjanaan elektrik berbanding 2022. Antara faktor yang menyumbang kepada perubahan campuran penjanaan ini ialah penurunan harga pasaran arang batu bermula Disember 2022. Selain itu, terdapat juga pengurangan penggunaan gas asli dalam penjanaan berikutan penamatan tempoh Perjanjian Pembelian Tenaga (PPA) bagi Stesen Jana Kuasa Panglima (720 MW) pada 28 Februari 2023.

Generation Mix

The year 2023 saw an increase in the use of coal for electricity generation compared to 2022. Factors contributing to this change in generation mix include a decline in coal market prices starting December 2022. Additionally, there was a reduction in natural gas usage in generation following the expiration of the Power Purchase Agreement (PPA) period for Panglima Power Plant (720 MW) on 28 February 2023.

Campuran Penjanaan bagi Semenanjung, 2021–2023

Generation Mix for the Peninsula, 2021–2023

Tahun *Year*	Arang Batu *Coal*	Gas Asli *Natural Gas*	Hidro* *Hydro*	Lain-lain *Others*
2021	59.1%	34.2%	5.5%	1.2%
2022	55.5%	37.1%	5.2%	2.2%
2023	57.1%	36.5%	4.7%	1.7%

*Data ini merangkumi bahagian sistem grid Semenanjung sahaja.

** This data includes only the Peninsula grid system.*

Bagi Sabah dan Labuan pula, trend campuran penjanaan tidak banyak berubah berbanding tahun sebelumnya. Penjanaan berasaskan gas asli berada pada tahap 84%, manakala penjanaan melalui diesel, hidro dan lain-lain masing-masing ialah 11%, 3% dan 2%. Kekurangan penjanaan bermula Mei 2023 menyebabkan banyak penjana berasaskan diesel digunakan, sekali gus meningkatkan penggunaan diesel. Di samping itu, penjanaan berasaskan hidro berkurangan disebabkan henti tugas tidak berjadual berpanjangan Stesen Janakuasa Tenom Pangi, disebabkan kejadian tanah runtuh sejak Oktober 2022.

For Sabah and Labuan, the generation mix trend has not changed significantly compared to the previous year. Natural gas-based generation remains at 84%, while generation through diesel, hydro and others accounts for 11%, 3%, and 2% respectively. Shortages in generation starting May 2023 led to increased use of diesel-based generators, thereby increasing diesel consumption. Additionally, hydro-based generation decreased due to prolonged unscheduled outages at the Tenom Pangi Power Station, caused by a landslide incident since October 2022.

Campuran Penjanaan bagi Sabah dan Labuan, 2021–2023
Generation Mix for Sabah and Labuan, 2021–2023

Tahun *Year*	Gas Asli *Natural Gas*	Diesel *Diesel*	Hidro *Hydro*	Lain-lain *Others*
2021	**85%**	**6%**	**6%**	**3%**
2022	**82%**	**9%**	**7%**	**2%**
2023	**84%**	**11%**	**3%**	**2%**

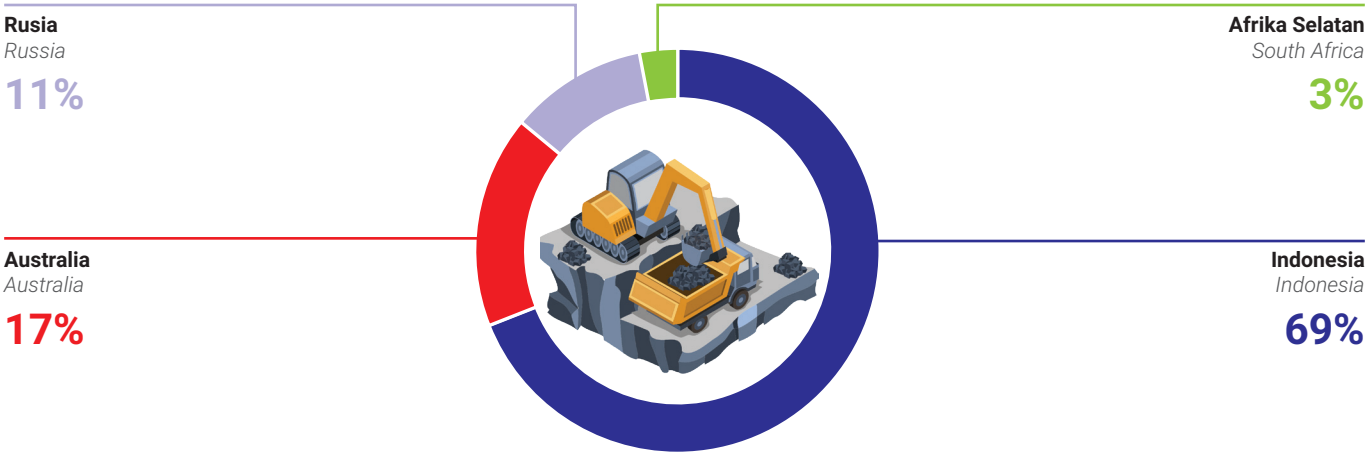
Arang Batu

Sebanyak 33.3 juta metrik tan arang batu telah diimport ke stesen-stesen jana kuasa arang batu di Semenanjung. Daripada jumlah tersebut, 69% ialah arang batu subbitumen manakala 31% ialah arang batu bitumen.

Coal

A total of 33.3 million metric tons of coal has been imported to coal-fired power stations in the Peninsula. Out of this total, 69% is sub-bituminous coal, while 31% is bituminous coal.

Sumber Arang Batu yang Diimport, 2023
Sources of Imported Coal, 2023



Gas Asli

Jumlah penggunaan bekalan gas asli oleh sektor tenaga mencatatkan purata 880 mmscfd bagi Semenanjung, penurunan berbanding 890 mmscfd pada 2022. Bagi Sabah pula, penggunaan gas asli oleh sektor tenaga mencatatkan purata 130 mmscfd, tidak jauh berbeza dengan kadar penggunaan tahun-tahun sebelumnya.

Beberapa siri Mesyuarat Jawatankuasa terus dijalankan sepanjang 2023 sebagai platform perbincangan yang menyeluruh dan holistik bersama pemegang taruh industri tenaga. Agenda mesyuarat berfokus untuk menangani dengan lebih strategik isu-isu bekalan bahan api bagi memastikan daya harap pembekalan tenaga adalah sentiasa terjamin.

Natural Gas

The total natural gas supply consumption by the energy sector averaged 880 mmscfd for the Peninsula, a decrease from 890 mmscfd in 2022. In Sabah, natural gas consumption by the energy sector averaged 130 mmscfd, which remained relatively consistent compared to previous years.

Throughout 2023, several series of Committee Meetings were conducted as comprehensive and holistic discussion platforms involving stakeholders in the energy industry. The meeting agenda focused on strategically addressing fuel supply issues to ensure reliable and secure energy supply.

Mesyuarat Jawatankuasa Pembekalan Gas dan Arang Batu, 2023

Gas and Coal Supply Committee Meeting, 2023

Mesyuarat *Meeting*	**Tarikh** *Date*	**Perbincangan** *Discussion*	**Penglibatan** *Participants*
Mesyuarat Jawatankuasa Pembekalan Gas Bagi Semenanjung Malaysia *Peninsular Malaysia Gas Supply Committee Meeting*	31 Januari 2023 *31 January 2023* 1 Ogos 2023 *1 August 2023*	Prestasi pembekalan gas, kadar penggunaan gas oleh sektor tenaga, operasi sistem grid serta perancangan pembekalan dan penggunaan gas bagi 2023 dan juga isu-isu lain. *Gas supply performance, energy sector usage rate, grid system operations, gas supply and usage plan for 2023, and other related issues.*	Unit Perancang Ekonomi (EPU), Kementerian Sumber Asli, Alam Sekitar & Perubahan Iklim (NRECC), Petronas Energy & Gas Trading Sdn. Bhd. (PEGT), Petronas Gas Bhd. (PGB), Grid System Operator (GSO), Single Buyer (SB) dan Gas Malaysia Berhad (GMB). *Economic Planning Unit (EPU), Ministry of Natural Resources, Environment & Climate Change (NRECC), Petronas Energy & Gas Trading Sdn. Bhd. (PEGT), Petronas Gas Bhd. (PGB), Grid System Operator (GSO), Single Buyer (SB), and Gas Malaysia Berhad (GMB).*
Mesyuarat Jawatankuasa Pembekalan Gas Bagi Sabah dan Wilayah Persekutuan Labuan *Sabah and Federal Territory of Labuan Gas Supply Committee Meeting*	7 Februari 2023 *7 February 2023*	Prestasi pembekalan gas, kadar penggunaan gas oleh sektor tenaga, operasi sistem grid serta perancangan pembekalan dan penggunaan gas bagi 2023. *Gas supply performance, energy sector usage rate, grid system operations, gas supply and usage plan for 2023.*	NRECC, Petronas, GSO dan SB. *NRECC, Petronas, GSO and SB.*
Mesyuarat Jawatankuasa Pembekalan Arang Batu *Coal Supply Committee Meeting*	13 Februari 2023 *13 February 2023* 7 Ogos 2023 *7 August 2023*	Situasi pembekalan arang batu dan isu-isu berkaitan serta prestasi sistem grid. *Coal supply situation, related issues and grid system performance.*	EPU, NRECC, GSO, SB, TNB Fuel Services Sdn. Bhd. (TNBF), TNB Power Generation Sdn. Bhd. (Genco) dan stesen-stesen jana kuasa arang batu. *EPU, NRECC, GSO, SB, TNB Fuel Services Sdn. Bhd. (TNBF), TNB Power Generation Sdn. Bhd. (Genco) and coal-fired power stations.*

Tenaga Boleh Baharu (TBB)

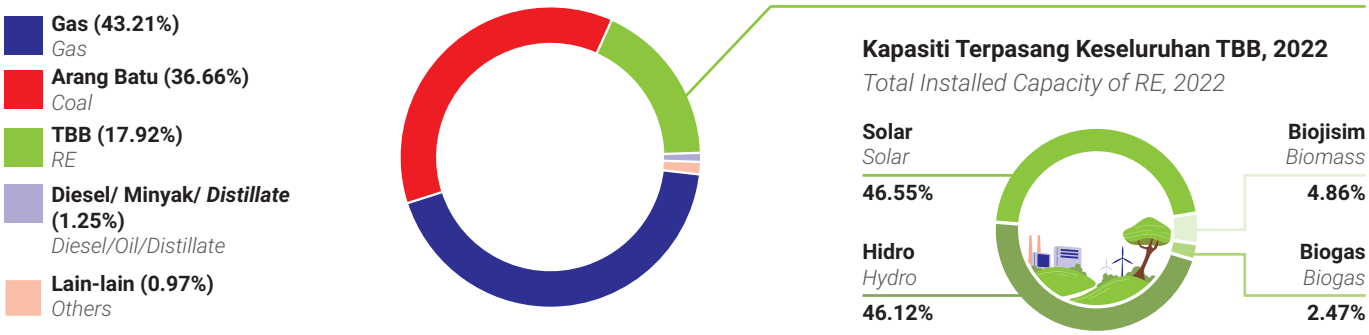
Sumber TBB di Malaysia dalam sektor penjanaan elektrik terdiri daripada tenaga hidro, solar, biojisim dan biogas. Kapasiti terpasang TBB bagi Semenanjung dan Sabah pada 2022 mencatatkan peningkatan sebanyak 20.6% berbanding tahun sebelumnya. Kapasiti terpasang TBB ini merupakan 17.92% daripada kapasiti terpasang keseluruhan (termasuk tenaga fosil) sebanyak 33,222.82 MW pada 2022.

Renewable Energy (RE)

RE sources in Malaysia's electricity generation sector consist of hydro, solar, biomass and biogas. Installed RE capacity for the Peninsula and Sabah in 2022 recorded an increase of 20.6% compared to the previous year. This installed RE capacity represents 17.92% of the total installed capacity (including fossil fuels) of 33,222.82 MW in 2022.

Kapasiti Terpasang Semenanjung dan Sabah, 2022

Installed Capacity of the Peninsula and Sabah, 2022



Jika dibandingkan dengan tahun sebelumnya, solar mencatat peningkatan ketara sebanyak 63.4% (2022: 2,781.82 MW, 2021: 1,702.73 MW). Begitu juga dengan biogas dengan peningkatan sebanyak 16.9% diikuti hidro dengan peningkatan sebanyak 0.4%. Biojisim bagaimanapun mencatatkan penurunan sebanyak 23.2% (2022: 290.17 MW, 2021: 378.07 MW).

Di Semenanjung, kapasiti terpasang TBB meningkat sebanyak 22.3% kepada 5,618.59 MW pada 2022, berbanding 4,595.78 MW pada tahun sebelumnya. Ia merupakan 18.0% daripada kapasiti keseluruhan (termasuk tenaga fosil) sebanyak 31,218.88 MW. Kapasiti terpasang ini didominasi oleh solar dengan 47.6%, diikuti hidro (47.2%), biojisim (2.9%) dan biogas (2.3.%). Jika dibandingkan dengan tahun sebelumnya, terdapat peningkatan ketara untuk solar sebanyak 68.5%, diikuti dengan biogas (11.9%) dan hidro (0.3%) manakala biojisim pula menurun sebanyak 34.4%.

Di Sabah pula, kapasiti terpasang TBB menurun sebanyak 6.5% kepada 334.45 MW pada 2022, berbanding 357.78 MW pada tahun sebelumnya. Ia merupakan 16.7% daripada kapasiti keseluruhan (termasuk tenaga fosil) sebanyak 2,003.93 MW. Daripada segi pecahan tenaga, biojisim mendominasi dengan 35.8% diikuti dengan hidro (28.7%), solar (30.2%) dan biogas (5.3%). Jika dibandingkan dengan 2021, biogas mencatatkan peningkatan sebanyak 67.9% diikuti dengan hidro (3.2%). Bagaimanapun, solar mencatatkan penurunan sebanyak 6.8% diikuti biojisim (2.3%).

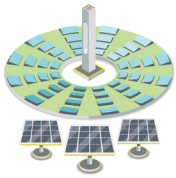
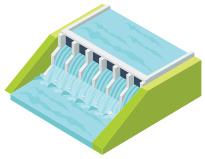
Compared to the previous year, solar energy saw a significant increase of 63.4% (2022: 2,781.82 MW, 2021: 1,702.73 MW). Similarly, biogas increased by 16.9%, followed by hydro with an increase of 0.4%. However, biomass recorded a decrease of 23.2% (2022: 290.17 MW, 2021: 378.07 MW).

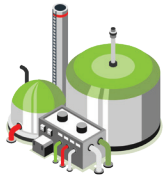
In the Peninsula, installed RE capacity increased by 22.3% to 5,618.59 MW in 2022, compared to 4,595.78 MW the previous year. This represents 18.0% of the total installed capacity (including fossil fuels) of 31,218.88 MW. Solar dominates this installed capacity with 47.6%, followed by hydro (47.2%), biomass (2.9%), and biogas (2.3%). Compared to the previous year, solar saw a significant increase of 68.5%, followed by biogas (11.9%) and hydro (0.3%), while biomass decreased by 34.4%.

In Sabah, installed RE capacity decreased by 6.5% to 334.45 MW in 2022, compared to 357.78 MW the previous year. This represents 16.7% of the total installed capacity (including fossil fuels) of 2,003.93 MW. In terms of energy breakdown, biomass dominates with 35.8%, followed by hydro (28.7%), solar (30.2%) and biogas (5.3%). Compared to 2021, biogas recorded an increase of 67.9%, followed by hydro (3.2%). However, solar saw a decrease of 6.8%, followed by biomass (2.3%).

Kapasiti Terpasang TBB di Semenanjung dan Sabah, 2022

Installed Capacity of RE in the Peninsula and Sabah, 2022

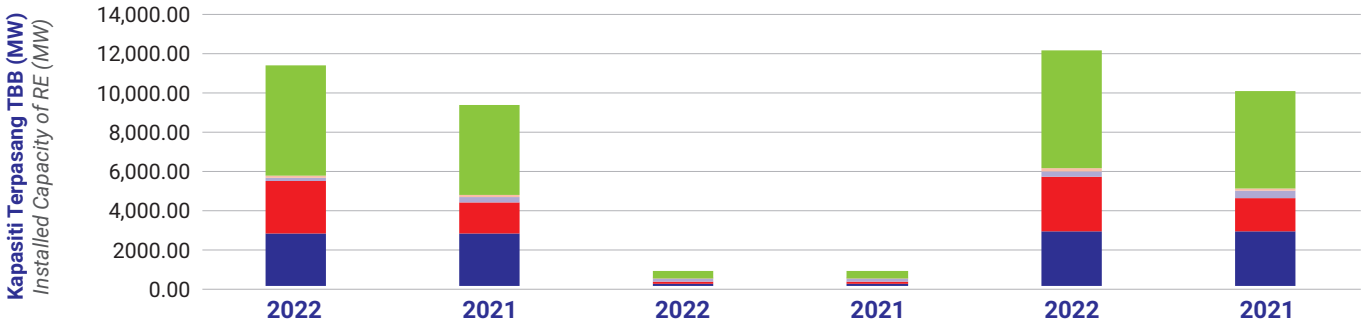





	Solar *Solar*	**Hidro** *Hydro*	**Biojisim** *Biomass*	**Biogas** *Biogas*	**Jumlah Kapasiti TBB** *Total RE Capacity*
Semenanjung	**47.60%**	**47.20%**	**2.90%**	**2.30%**	**5,618.59 MW**
Sabah	**30.20%**	**28.70%**	**35.80%**	**5.30%**	**357.64 MW**

Kapasiti Terpasang TBB di Semenanjung dan Sabah, 2021–2022

Installed Capacity of RE in the Peninsula and Sabah, 2021–2022



	Semenanjung *The Peninsula*		**Sabah** *Sabah*		**Semenanjung & Sabah** *The Peninsula & Sabah*	
Jumlah *Total*	**5,618.59**	**4,595.78**	**357.64**	**357.78**	**5,976.23**	**4,953.56**
Biogas *Biogas*	**129.02**	**115.26**	**18.79**	**11.19**	**147.80**	**126.45**
Biojisim *Biomass*	**161.98**	**246.92**	**128.19**	**131.15**	**290.17**	**378.07**
Solar *Solar*	**2,673.91**	**1,586.90**	**107.90**	**115.84**	**2,781.82**	**1,702.73**
Hidro *Hydro*	**2,653.68**	**2,646.72**	**102.76**	**99.60**	**2,756.44**	**2,746.32**

***Demand Forecasting Committee* (DFC) 2023**

DFC merupakan platform bagi mendapatkan input dan nasihat daripada pihak-pihak berkepentingan serta berkepakaran berhubung unjuran permintaan elektrik, teknologi dan polisi terkini, serta pertumbuhan ekonomi. Hasil unjuran permintaan elektrik yang diluluskan oleh DFC akan diguna pakai dalam membangunkan Pelan Pembangunan Penjanaan di Semenanjung dan Sabah untuk kelulusan JPPPET di peringkat Kementerian yang seterusnya.

Demand Forecasting Committee (DFC) 2023

The DFC serves as a platform to gather input and advice from stakeholders and experts on electricity demand projections, the latest technology and policy developments as well as economic growth. The electricity demand forecasts approved by DFC will be used to develop Generation Development Plans for the Peninsula and Sabah which will be tabled in JPPPET at the Ministry level for approval.

Mesyuarat DFC Bil. 1/2023 bagi Sabah dan Bil. 2/2023 bagi Semenanjung, masing-masing diadakan pada 13 April 2023 dan 31 Julai 2023. Mesyuarat tersebut dipengerusikan oleh ST dan disertai wakil-wakil daripada Kementerian Kewangan, Kementerian Ekonomi, NRECC, Kementerian Perdagangan Antarabangsa dan Industri (MITI), Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA), Unit Perancangan Ekonomi Negeri Sabah, Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn. Bhd. (SESB), Sarawak Energy Berhad (SEB), SB Semenanjung & Sabah, GSO Semenanjung, Persatuan Pekilang-Pekilang Malaysia dan Gabungan Persatuan-Persatuan Pengguna Malaysia (FOMCA).

Dalam mesyuarat berkenaan, semakan terhadap input dan andaian, serta penambahbaikan terhadap kaedah unjuran permintaan elektrik telah dijalankan. Penambahbaikan tersebut ialah perincian unjuran permintaan mengikut negeri dan wilayah serta pembangunan senario Perancangan Sistem Bersepadu (ISP).

Bagi Semenanjung, lima (5) senario ISP telah dibangunkan dan tiga (3) daripadanya telah diputuskan oleh mesyuarat untuk digunakan bagi menjalankan analisis Pelan Pembangunan Penjanaan iaitu *Balance Transition, Rapid Shift dan Significant Shift*.

Untuk 2023, andaian unjuran yang ketara perbezaannya berbanding tahun sebelumnya ialah permintaan kenderaan elektrik (EV), penjanaan daripada TBB, sistem storan tenaga, permintaan yang tinggi dari pusat data, eksport dan pelabur besar baru bagi Sabah. Andaian-andaian ini masih baru diunjurkan (kecuali TBB) berdasarkan polisi dan data historikal yang terhad. Sehubungan itu, andaian ini masih perlu dikaji lagi kemajuannya untuk menambah baik unjuran pada tahun-tahun akan datang.

Secara kesimpulannya, hasil Kajian Unjuran Permintaan Elektrik Semenanjung Malaysia (2023-2050) dan Sabah (2023-2042) adalah lebih tinggi berbanding JPPPET 2022, disebabkan pertambahan permintaan baharu yang besar (pusat data, eksport dan pelabur baru) serta peningkatan EV. Hasil kajian yang diluluskan ini dapat membantu dalam merancang pembekalan dan permintaan elektrik dengan lebih baik dan digunakan dalam analisis kajian untuk Mesyuarat JPPPET seterusnya.

DFC Meetings No. 1/2023 for Sabah and No. 2/2023 for the Peninsula were held on 13 April 2023 and 31 July 2023, respectively. These meetings were chaired by the Commission and attended by representatives from the Ministry of Finance, Ministry of Economy, NRECC, Ministry of International Trade and Industry (MITI), Sustainable Energy Development Authority (SEDA), Sabah State Economic Planning Unit, Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn. Bhd. (SESB), Sarawak Energy Berhad (SEB), the Peninsula's & Sabah's SB, the Peninsula's GSO, Federation of Malaysian Manufacturers and Federation of Malaysian Consumers Associations (FOMCA).

During these meetings, reviews of inputs, assumptions and improvements to the electricity demand forecasting methods were conducted. These improvements include detailed demand forecasts by state and region, and the development of Integrated System Planning (ISP) scenarios.

For the Peninsula, five (5) ISP scenarios were developed, which three (3) of them were decided upon in the meeting to be used for Generation Development Plan analysis, that are Balance Transition, Rapid Shift and Significant Shift.

For 2023, assumptions that vary significantly compared to previous years are electric vehicle (EV) demand, generation from RE, energy storage systems, high demand from data centres, exports, and new large investors for Sabah. These assumptions are newly forecasted (except RE) based on policies and limited historical data available. Therefore, these assumptions need further refinement to improve forecasts in the coming years.

In conclusion, the findings of the Peninsula's (2023-2050) and Sabah's (2023-2042) Electricity Demand Forecast Study are higher compared to JPPPET 2022, due to significant increase in new demands (data centres, exports and new investors) and EV growth. The approved findings will aid in better planning for electricity supply and demand and will be used in analysis for upcoming JPPPET meetings.

Pembekalan Gas Asli Melalui Talian Paip

Gas Supply via Pipelines

Pembekalan Gas Asli Mengikut Sektor

Pada 2023, jumlah penggunaan gas asli di Semenanjung oleh Petronas Energy and Gas Trading Sdn. Bhd. (PEGT) ialah sebanyak 821,679,520.08 MMBtu, manakala jumlah penggunaan oleh Gas Malaysia Energy and Services Sdn. Bhd. (GMES) ialah sebanyak 148,664,939.74 MMBtu.

Bagi penggunaan gas asli oleh PEGT, 99.86% ialah penggunaan dalam sektor industri, dan 0.14% daripada sektor komersial. Bagi penggunaan gas asli oleh GMES pula, 99.36% ialah penggunaan dalam sektor industri, 0.63% daripada sektor komersial dan 0.01% daripada sektor domestik.

Penggunaan gas asli di Labuan pula ialah sebanyak 3,024.02 MMBtu, di mana keseluruhan penggunaan gas asli adalah sektor industri.

Natural Gas Supply by Sector

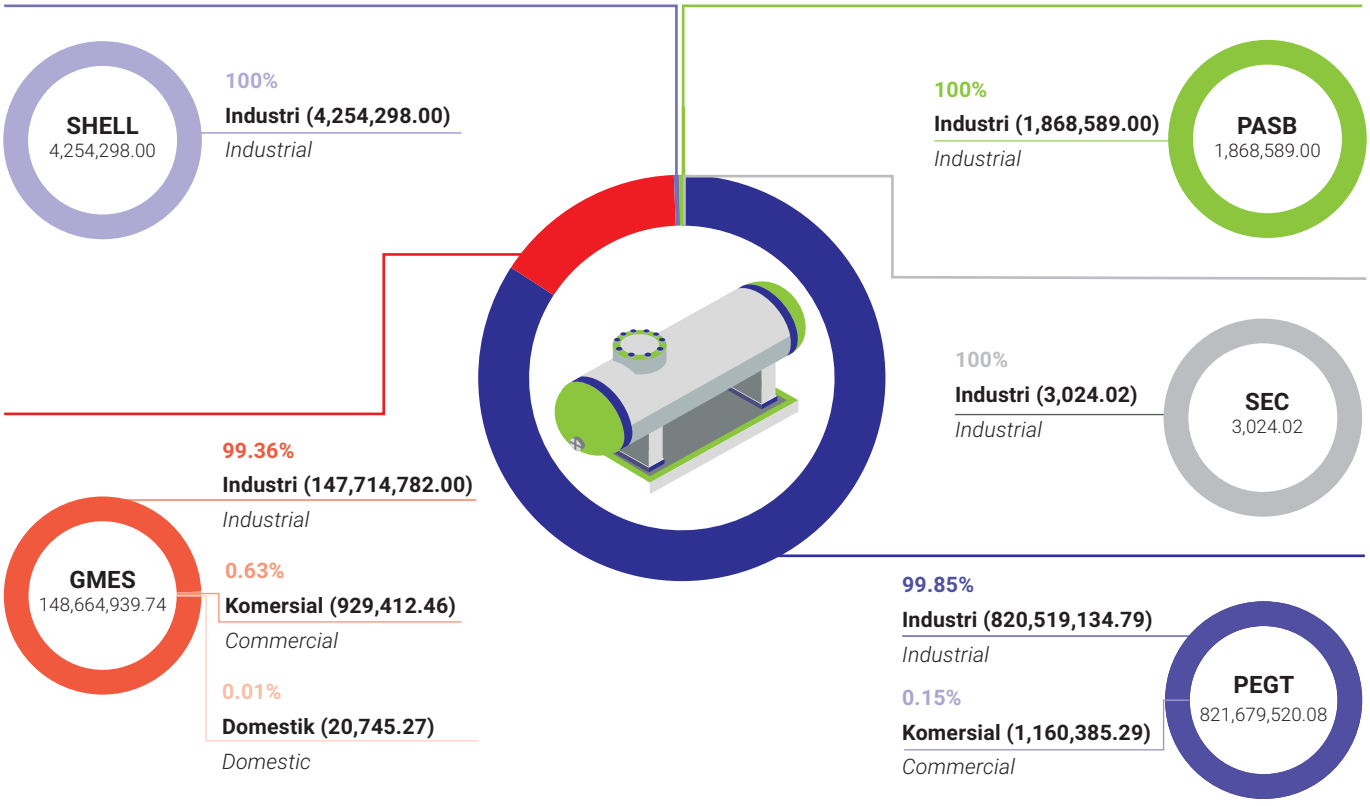
In 2023, the natural gas consumption in the Peninsula by Petronas Energy and Gas Trading Sdn. Bhd. (PEGT) amounted to 821,679,520.08 MMBtu, while the consumption by Gas Malaysia Energy and Services Sdn. Bhd. (GMES) was 148,664,939.74 MMBtu.

For natural gas usage by PEGT, 99.86% of the usage was in the industrial sector and 0.14% in the commercial sector. As for GMES, 99.36% was used in the industrial sector, 0.63% in the commercial sector, and 0.01% in the domestic sector.

In Labuan, the natural gas consumption was 3,024.02 MMBtu, where it was used in the industrial sector.

Pembekalan Gas Asli di Semenanjung dan Labuan, 2023 (MMBtu)

Natural Gas Supply in the Peninsula and Labuan, 2023 (MMBtu)



Pembekalan Gas Asli Mengikut Sub-Industri

Penggunaan bukan tenaga bagi PEGT adalah hanya dalam sub-industri kimia, elektrik dan elektronik, dan lain-lain sub industri di mana penggunaan masing-masing ialah 150,389,781.31 MMBtu, 90,057,980.54 MMBtu dan 154,550,707.13 MMBtu. Ini menjadikan jumlah penggunaan gas asli bagi bukan tenaga oleh PEGT ialah sebanyak 420,681,198.09 MMBtu. Penggunaan bagi tenaga pula ialah 328,387,219.43 MMBtu manakala bagi eksport ialah 72,611,102.57 MMBtu.

GMES pula menggunakan secara keseluruhan 147,714,782.00 MMBtu bagi sektor bukan tenaga, di mana penggunaan tertinggi adalah di bawah sub-industri makanan, minuman & tembakau dengan 40,466,660.00 MMBtu.

Penggunaan gas asli di Labuan bagi SEC tertumpu kepada kategori bukan tenaga iaitu pertanian dengan 3,024.02 MMBtu.

Natural Gas Supply by Sub-Industry

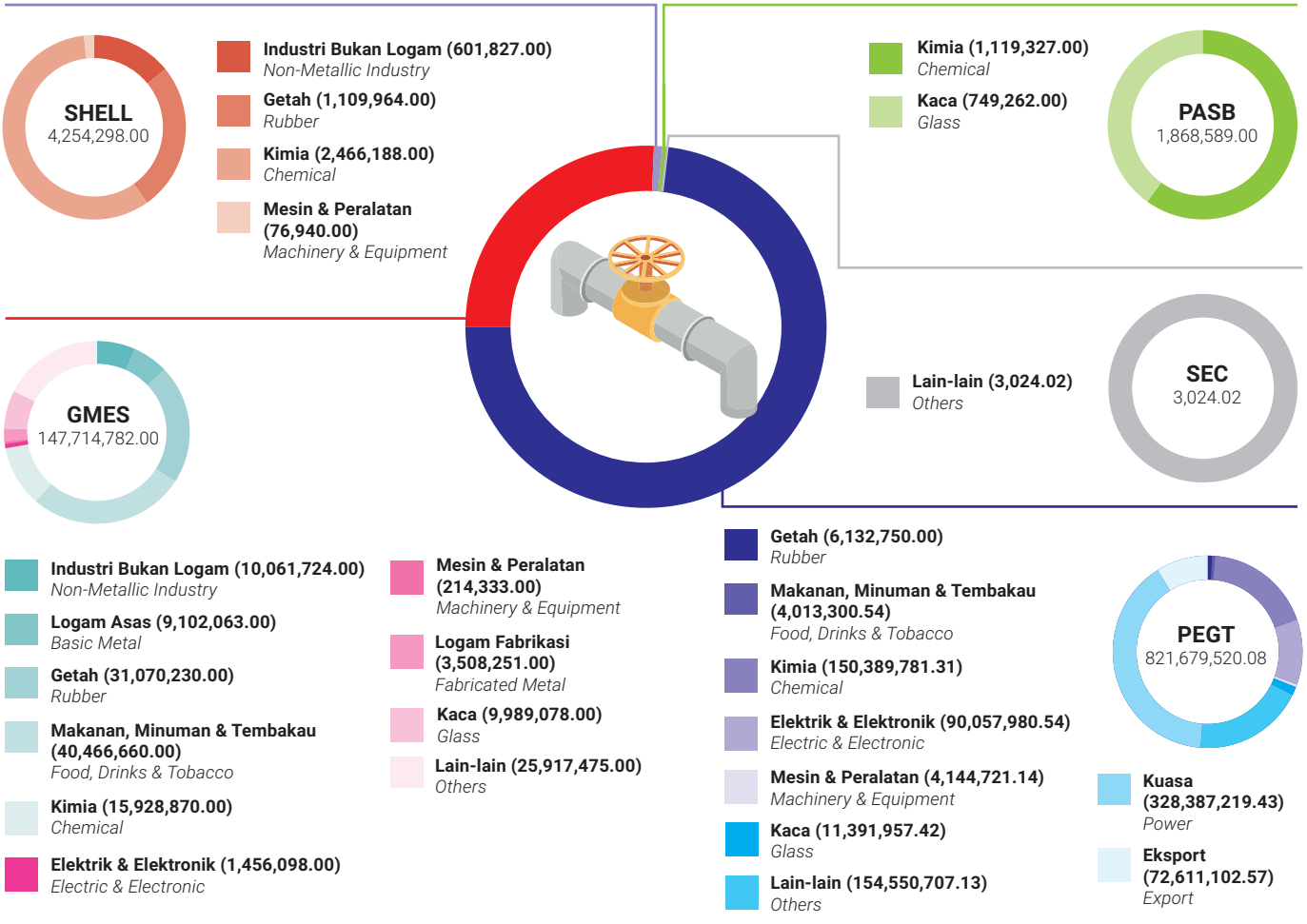
The non-energy supply by PEGT is only within the chemical, electrical and electronics, and other sub-industries, with respective usages of 150,389,781.31 MMBtu, 90,057,980.54 MMBtu, and 154,550,707.13 MMBtu. This totals to 420,681,198.09 MMBtu for non-power natural gas usage by PEGT. Energy usage amounts to 328,387,219.43 MMBtu, while exports amount to 72,611,102.57 MMBtu.

Meanwhile, GMES utilises a total of 147,714,782.00 MMBtu for non-power sectors, with the highest usage in the food, beverage & tobacco sub-industry amounting to 40,466,660.00 MMBtu.

In Labuan, SEC focuses its natural gas usage on the non-power category, particularly agriculture with 3,024.02 MMBtu.

Pembekalan Gas Asli Mengikut Sub-Industri bagi Bukan Tenaga, Tenaga dan Eksport di Semenanjung dan Labuan, 2023 (MMBtu)

Natural Gas Supply by Sub-Industry for Non-Energy, Energy and Export in the Peninsula and Labuan, 2023 (MMBtu)



Pengguna Gas Asli Mengikut Sektor

Bagi PEGT, sejumlah 49 pengguna gas asli adalah daripada sektor industri dan satu (1) pengguna daripada sektor komersial.

Bagi GMES pula, sebahagian besar pengguna mereka adalah daripada sektor domestik dengan 9,753 pengguna. Sektor industri dan sektor komersial GMES pula masing-masing mencatatkan bilangan pengguna sebanyak 1,042 dan 879 pengguna. Secara keseluruhan, pengguna gas asli GMES adalah 11,674 pengguna.

Di Labuan, pengguna gas asli SEC adalah sebanyak satu (1) pengguna, iaitu pengguna daripada sektor industri.

Natural Gas Consumer by Sector

For PEGT, a total of 49 natural gas consumers are from the industrial sector, and one (1) consumer is from the commercial sector.

For GMES, the majority of their consumers are from the domestic sector, totaling 9,753 consumers. The industrial sector and commercial sector of GMES each have 1,042 and 879 consumers, respectively. In total, GMES has 11,674 natural gas consumers.

In Labuan, SEC has one (1) natural gas consumer, who is from the industrial sector.

Pengguna Gas Asli Mengikut Sektor di Semenanjung, Sabah dan Labuan, 2023

Natural Gas Consumers by Sector in the Peninsula, Sabah and Labuan, 2023

Syarikat *Company*	Pengguna Mengikut Sektor *Consumer by Sector*			
	Industri *Industrial*	Komersial *Commercial*	Domestik *Domestic*	Jumlah *Total*
PEGT	49	1	-	50
GMES	1,042	879	9,753	11,674
SEC	1	-	-	1
SHELL	5	-	-	5
PASB	2	-	-	2

Talian Paip Gas Asli

Di Semenanjung dan Labuan, panjang talian paip jenis polietilena secara keseluruhannya ialah 584.32 km manakala bagi jenis keluli ialah 4,432.95 km. Di Semenanjung, kebanyakan paip ialah jenis keluli dan talian paip tersebut ialah milik PGB, Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTMM) dan juga Gas Malaysia Distribution Sdn. Bhd. (GMD). Panjang talian paip PGB ialah 2,260 km, panjang paip TTMM pula ialah 8.2 km manakala 2163.95 km ialah milik GMD. Selain itu, hanya 584.32 km talian paip jenis polietilena terdapat di Semenanjung, yang merupakan milik GMD.

Talian paip pengagihan di Labuan ialah milik SEC. Panjang talian paip jenis keluli bagi SEC adalah sepanjang 0.8 km.

Natural Gas Pipelines

In the Peninsula and Labuan, the total length of polyethylene pipelines is 584.32 km, while steel pipelines measure 4,432.95 km. In the Peninsula, most of the pipelines are steel, owned by PGB, Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTMM), and Gas Malaysia Distribution Sdn. Bhd. (GMD). PGB's pipeline length is 2,260 km, TTMM's pipeline is 8.2 km, and GMD owns 2,163.95 km of pipelines. Additionally, there are 584.32 km of polyethylene pipelines in the Peninsula, which belong to GMD.

In Labuan, the distribution pipelines are owned by SEC. The length of steel pipelines owned by SEC is 0.8 km.

Talian Paip Gas Asli di Semenanjung dan Labuan, 2023
Natural Gas Pipelines in the Peninsula and Labuan, 2023

Syarikat *Company*	Talian Paip (km) *Pipeline(km)*			
	Semenanjung (km) *The Peninsula (km)*		Labuan (km) *Labuan (km)*	
	Polietilena *Polyethylene*	Keluli *Steel*	Polietilena *Polyethylene*	Keluli *Steel*
PGB	-	2,260	-	-
TTMM	-	8.20	-	-
GMD	584.32	2163.95	-	-
SEC	-	-	-	0.80
Jumlah *Total*	584.32	4,432.15	-	0.80

Prestasi Sistem Penghantaran

Transmission System Performance

Semenanjung
Di Semenanjung, sistem penghantaran dibina, dikendali dan disenggara oleh syarikat utiliti nasional TNB, di mana prestasi sistem berkenaan dipantau oleh ST dan diukur menggunakan *Delivery Points Unreliability Index* (DePUI).

Bagi tempoh 2020 sehingga 2023, sistem penghantaran TNB di Semenanjung menunjukkan kemerosotan. Bacaan DePUI atau sistem minit pada 2023 meningkat sebanyak 0.311 minit, daripada 0.172 minit pada 2022 kepada 0.483 minit pada 2023. Trend peningkatan juga dicatat jika bacaan 2023 dibandingkan dengan 2019, iaitu peningkatan sebanyak 0.212 minit daripada 0.271 minit yang dicatat pada 2019.

Secara keseluruhannya, prestasi DePUI bagi grid nasional 2023 masih berada di tahap yang baik dan tidak melebihi sasaran yang ditetapkan iaitu dua (2) minit.

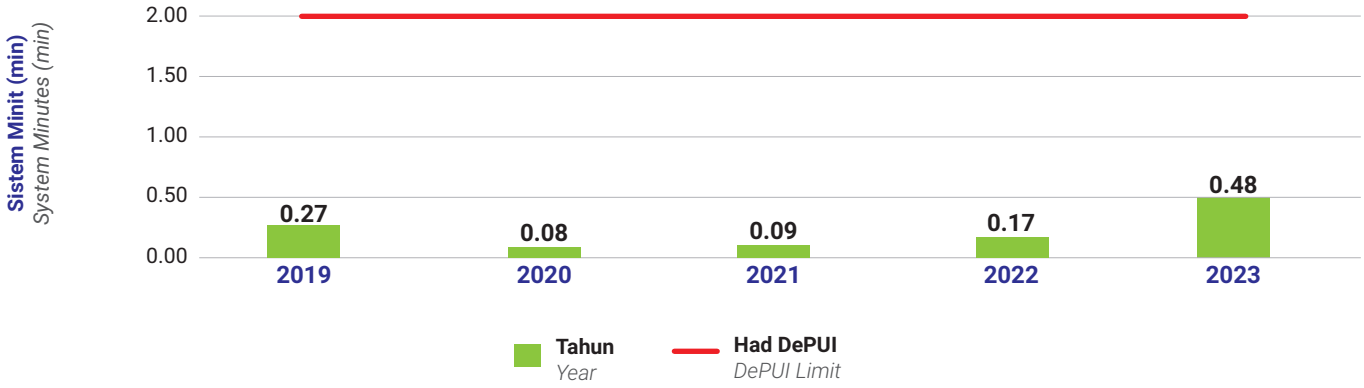
The Peninsula
In the Peninsula, the transmission system is built, operated and maintained by the national utility company TNB, with its performance monitored by the Commission and measured using the Delivery Points Unreliability Index (DePUI).

From 2020 to 2023, TNB's transmission system in the Peninsula has shown a decline. The DePUI reading or system minutes for 2023 increased by 0.311 minutes, from 0.172 minutes in 2022 to 0.483 minutes in 2023. An increasing trend is also noted when comparing the 2023 reading to that of 2019, showing an increase of 0.212 minutes from the 0.271 minutes recorded in 2019.

Overall, the DePUI performance for the national grid in 2023 remains at a satisfactory level and does not exceed the set target of two (2) minutes.

Prestasi DePUI di Semenanjung (TNB), 2019–2023

DePUI Performance in the Peninsula (TNB), 2019–2023



Terdapat sembilan (9) insiden pelantikan yang melibatkan kehilangan beban direkodkan sepanjang 2023. Kesemua insiden kehilangan beban ini telah dipulihkan oleh GSO dalam tempoh yang ditetapkan.

Tiada insiden lucutan beban (UFLS) dan juga *wide area system loss* (WASL) direkodkan pada 2023 yang melibatkan kehilangan beban melebihi 197.16 MW atau 10% permintaan maksimum (19,716 MW).

There were nine (9) load shedding incidents involving loss of load recorded throughout 2023. All these load shedding incidents were restored by GSO within the specified timeframe.

No under frequency load shedding (UFLS) incidents or wide area system loss (WASL) exceeding 197.16 MW or 10% of maximum demand (19,716 MW) were recorded in 2023.

Sabah dan Labuan

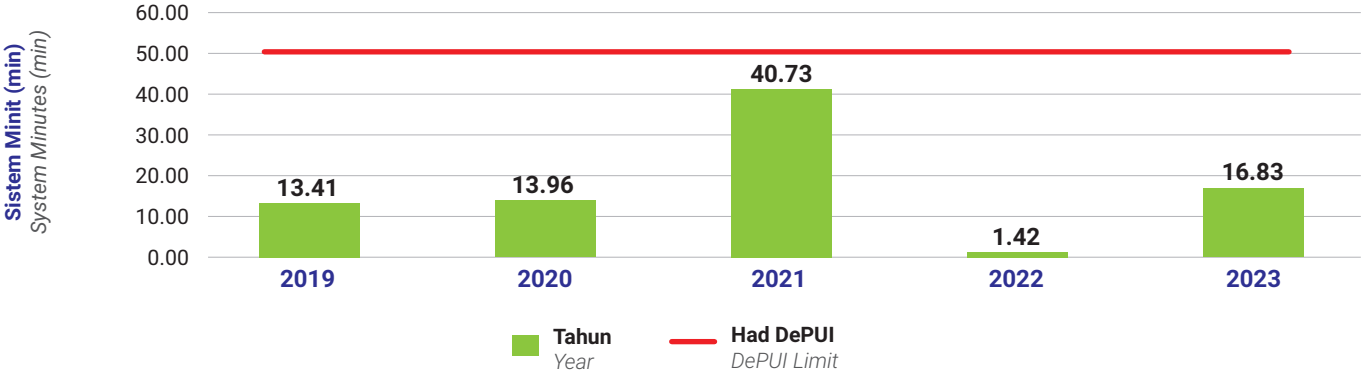
Di Sabah dan Labuan, sistem penghantaran dimiliki, dioperasi dan disenggara oleh SESB. Dalam tempoh lima (5) tahun terakhir, prestasi bahagian penghantaran pada 2023 menunjukkan prestasi baik dengan penurunan DePUI daripada 42.97 minit pada 2018 kepada 16.83 minit pada 2023. Penurunan DePUI ini disebabkan hanya terdapat tiga (3) insiden lucutan beban grid 132 kV yang tidak melibatkan kehilangan beban yang besar. Secara keseluruhannya, prestasi sistem minit bagi grid Sabah dan Labuan pada 2023 berada di tahap yang baik dan dalam sasaran yang ditetapkan ST iaitu 50 minit.

Sabah and Labuan

In Sabah and Labuan, the transmission system is owned, operated and maintained by SESB. Over the past five (5) years, the transmission division's performance in 2023 has shown improvement with a decrease in DePUI from 42.97 minutes in 2018 to 16.83 minutes in 2023. This decrease in DePUI is attributed to only three (3) incidents of 132 kV grid load shedding that did not involve significant load losses. Overall, the system minutes performance for the Sabah and Labuan grid in 2023 remains good and within the Commission's set target of 50 minutes.

Prestasi DePUI di Sabah dan Labuan (SESB), 2019–2023

DePUI Performance in Sabah and Labuan (SESB), 2019–2023

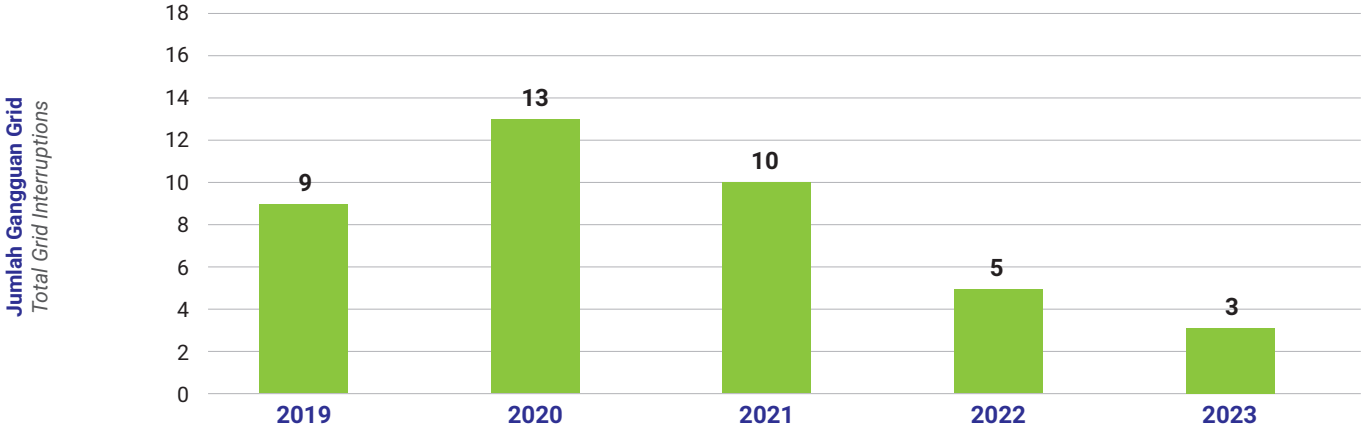


Terdapat penurunan bilangan insiden lucutan beban, daripada lima (5) insiden pada 2022 kepada tiga (3) insiden pada 2023. Insiden-insiden ini yang disebabkan oleh gangguan di bahagian penghantaran menyebabkan kehilangan beban 201.12 MW, penurunan sebanyak 27% pada 2023 berbanding 273.9 MW pada 2022.

There was a decrease in the number of load shedding incidents, from five (5) incidents in 2022 to three (3) incidents in 2023. These incidents, caused by disruptions in the transmission division, resulted in a loss of load amounting to 201.12 MW, a decrease of 27% in 2023 compared to 273.9 MW in 2022.

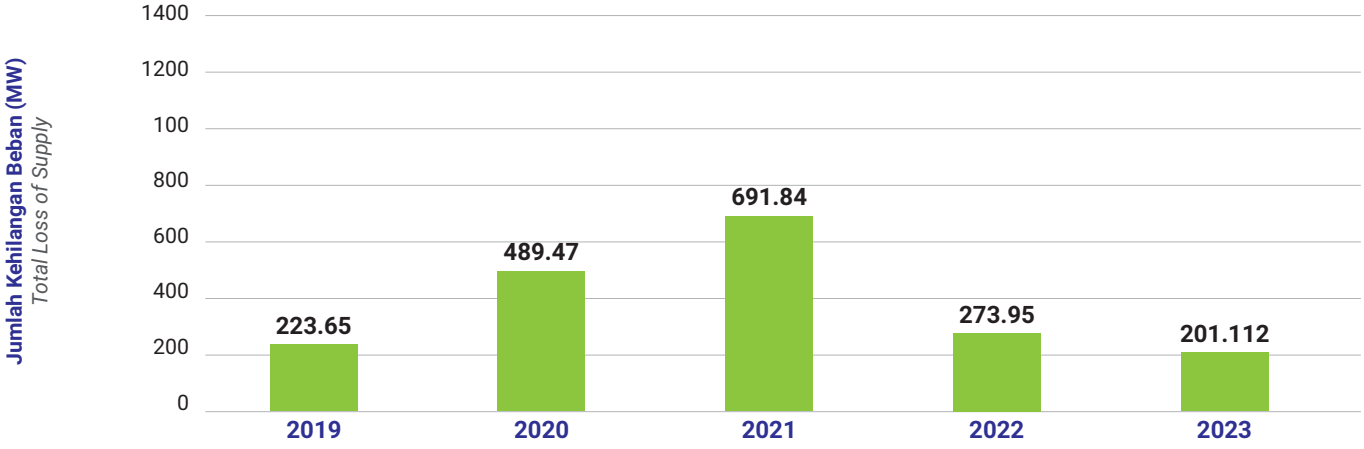
Insiden Kehilangan Beban Berpunca daripada Gangguan Bahagian Penghantaran di Sabah dan Labuan, 2019–2023

Load Loss Incidents Due to Transmission System Interruptions in Sabah and Labuan, 2019–2023



Kehilangan Beban Disebabkan Gangguan Bahagian Penghantaran di Sabah dan Labuan, 2019–2023

Load Loss Due to Transmission System Interruptions in Sabah and Labuan, 2019–2023



Tiada WASL direkodkan untuk 2023 yang melibatkan kehilangan beban melebihi 327.21 MW atau 30% permintaan maksimum (1,090.7 MW).

No WASL incidents were recorded for 2023 involving load loss exceeding 327.21 MW or 30% of maximum demand (1,090.7 MW).

Selain itu, bagi memantau dan mempertingkatkan lagi prestasi sistem penghantaran, Mesyuarat Jawatankuasa Kod Grid juga dijalankan dengan objektif untuk menilai dan meneliti keboleharapan dan kestabilan sistem grid di Semenanjung dan Labuan.

Additionally, to monitor and further improve the performance of the transmission system, Grid Code Committee meetings were also conducted with the objective of evaluating and examining the reliability and stability of the grid system in the Peninsula and Labuan.

Mesyuarat Jawatankuasa Kod Grid, 2023
Grid Code Committee Meeting, 2023

Mesyuarat *Meeting*	Tarikh *Date*	Perbincangan *Discussion*	Penglibatan *Participants*
Mesyuarat Jawatankuasa Kod Grid Semenanjung Malaysia *Peninsular Malaysia Grid Code Committee Meeting*	16 Mac 2023 *16 March 2023* 10 Julai 2023 *10 July 2023* 11 Disember 2023 *11 December 2023*	Perkara-perkara yang berkait dengan daya harap dan sekuriti sistem grid berpandukan Kod Grid Semenanjung Malaysia. *Matters related to the reliability and security of the grid system based on the Peninsular Malaysia Grid Code.*	GSO, SB, TNB Genco, Penjana Bebas, Pakar Teknikal Bebas dan industri bekalan elektrik. *GSO, SB, TNB Genco, Independent Power Producers, Independent Technical Experts and the electricity supply industry.*
Mesyuarat Jawatankuasa Kod Grid Sabah dan Wilayah Persekutuan Labuan *Sabah and Federal Territory of Labuan Grid Code Committee Meeting*	21 Mac 2023 *21 March 2023* 15 Ogos 2023 *15 August 2023* 27 November 2023 *27 November 2023*	Perkara-perkara yang berkait dengan daya harap dan sekuriti sistem grid berpandukan Kod Grid Sabah dan Wilayah Persekutuan Labuan. *Matters related to the reliability and security of the grid system based on the Sabah and Federal Territory of Labuan Grid Code.*	GSO, SB, Petronas, Penjana Bebas dan industri bekalan elektrik. *GSO, SB, Petronas, Independent Power Producers and the electricity supply industry.*

Prestasi Sistem Pengagihan

Distribution System Performance

SAIDI, SAIFI dan CAIDI Elektrik

Semenanjung

Bagi 2023, pencapaian *System Average Interruption Duration Index* (SAIDI) di Semenanjung ialah 46.10 minit/pelanggan/tahun, yang merupakan catatan di bawah sasaran yang ditetapkan bagi tahun itu iaitu 48 minit/pelanggan/tahun.

Pencapaian baik ini dapat dicapai melalui pemantauan SAIDI bagi 15 bandar raya terutama bandar raya yang mencatatkan bacaan SAIDI yang tinggi. Penekanan turut diberi kepada pelan tindak mitigasi TNB dan projek penambahbaikan sistem seperti pemasangan *Supervisory Control and Data Acquisition* (SCADA), yang membolehkan pemantauan masa nyata dan pemulihan semula bekalan bagi kejadian gangguan bekalan elektrik. Selain itu, projek berimpak tinggi turut dipantau dalam memastikan pelaksanaan projek-projek yang akan memberi impak kepada sistem pembekalan elektrik di Semenanjung.

Dalam pada itu, pemantauan bagi TOP20 *Worst Performing Feeder* (WPF) dan TOP 20 *SAIDI Worst Performing Feeder* (SWPF) turut dilaksanakan pada 2023 bagi memantau penyuap yang bermasalah dan kerap mengalami kerosakan.

SAIDI, SAIFI and CAIDI Electric

The Peninsula

For 2023, the System Average Interruption Duration Index (SAIDI) achievement in the Peninsula was 46.10 minutes/customer/year, which is below the set target for the year of 48 minutes/customer/year.

This positive achievement was made possible through the monitoring of SAIDI across 15 cities, especially those with high SAIDI readings. Emphasis was also placed on TNB's mitigation action plan and system improvement projects such as the installation of Supervisory Control and Data Acquisition (SCADA), enabling real-time monitoring and swift restoration of electricity supply during disruptions. Additionally, high-impact projects were monitored to ensure their successful implementation for enhancing the electricity supply system in the Peninsula.

Furthermore, monitoring for the TOP20 Worst Performing Feeder (WPF) and TOP 20 SAIDI-Worst Performing Feeder (SWPF) was conducted in 2023 to track problematic feeders prone to frequent faults.

Secara keseluruhannya, pencapaian prestasi SAIDI terkumpul Semenanjung masih menunjukkan prestasi baik dengan catatan SAIDI sebanyak 46.10 minit/pelanggan/tahun bagi 2023 berbanding 45.25 minit/pelanggan/tahun bagi 2022, walaupun terdapat peningkatan sebanyak 0.76%.

Prestasi *System Average Interruption Frequency Index* (SAIFI) dan *Customer Average Interruption Duration Index* (CAIDI) di Semenanjung masih lagi menunjukkan prestasi yang baik, hasil usaha bersama untuk memastikan sistem pengagihan elektrik di Semenanjung sentiasa berada dalam keadaan terkawal.

Sabah

Pada 2023, pencapaian SAIDI di Sabah ialah 266.35 minit/pelanggan/tahun, melepasi sasaran yang ditetapkan iaitu 250 minit/pelanggan/tahun.

Untuk meningkatkan prestasi sistem pengagihan di Sabah, khususnya di kawasan yang menyumbang kepada SAIDI yang tinggi seperti di Ranau, inisiatif pemantauan yang komprehensif terhadap 10 projek berimpak tinggi dilaksanakan bagi mengenal pasti faktor-faktor yang menyumbang kepada SAIDI. Projek-projek yang terlibat dalam penurunan SAIDI ini diselia dan dipantau secara terperinci bagi memastikan projek-projek tersebut dapat disiapkan dalam masa yang dirancang, dan boleh memberi impak yang tinggi kepada tahap pembekalan tenaga elektrik di Ranau.

Laporan terhadap projek berimpak tinggi ini dilaporkan oleh SESB setiap bulan dan perbincangan bagi melihat kemajuan projek ini dilakukan setiap suku tahun. Melalui inisiatif ini, SAIDI kawasan Ranau dapat diturunkan sebanyak 58% kepada 913 minit/pelanggan/tahun, berbanding 2,175 minit/pelanggan/tahun pada 2022.

Secara keseluruhannya, pencapaian SAIDI Sabah pada 2023 mencatatkan sedikit penurunan iaitu 266.35 minit/pelanggan/tahun, berbanding 286.22 minit/pelanggan/tahun pada 2022.

Kadar SAIFI pula meningkat kepada 12.61 gangguan/pelanggan/tahun berbanding 11.07 gangguan/pelanggan/tahun pada 2022. Pelbagai inisiatif giat dijalankan bagi meningkatkan prestasi pembekalan tenaga elektrik di Sabah namun masalah utama gangguan bekalan adalah disebabkan oleh catuan bekalan susulan kekurangan rizab margin penjanaan. Kadar CAIDI pula dicatatkan pada 23.16 minit berikutan penutupan bekalan bagi kerja-kerja menaik taraf sistem bekalan.

Overall, the cumulative SAIDI performance in the Peninsula continues to demonstrate good performance with a SAIDI record of 46.10 minutes/customer/year for 2023, compared to 45.25 minutes/customer/year in 2022, despite a slight increase of 0.76%.

The performance of the System Average Interruption Frequency Index (SAIFI) and Customer Average Interruption Duration Index (CAIDI) in the Peninsula continues to show strong performance, reflecting collaborative efforts to ensure the electrical distribution system in the Peninsula remains under control.

Sabah

In 2023, the SAIDI achievement in Sabah was 266.35 minutes/customer/year, surpassing the set target of 250 minutes/customer/year.

To enhance the distribution system performance in Sabah, particularly in areas contributing to high SAIDI like Ranau, comprehensive monitoring initiatives were carried out for 10 high-impact projects. These initiatives aimed to identify factors contributing to SAIDI. The projects involved in reducing SAIDI were closely supervised and monitored to ensure timely completion and significant impact on the electricity supply level in Ranau.

Reports on these high-impact projects are submitted monthly by SESB, with discussions on project progress conducted quarterly. Through these efforts, the SAIDI in Ranau was reduced by 58% to 913 minutes/customer/year, compared to 2,175 minutes/customer/year in 2022.

Overall, Sabah's SAIDI achievement in 2023 saw a slight decrease to 266.35 minutes/customer/year, compared to 286.22 minutes/customer/year in 2022.

The SAIFI rate increased to 12.61 interruptions/customer/year from 11.07 interruptions/customer/year in 2022. Various initiatives were vigorously pursued to improve the electricity supply performance in Sabah, though the main disruption issue stemmed from supply interruptions due to insufficient generation reserve margin. The CAIDI rate was recorded at 23.16 minutes following supply shutdowns for system upgrade works.

SAIDI Sistem Bekalan Gas Berpaip untuk Sektor Bukan Tenaga

Semenanjung

Daya harap talian paip pengagihan gas asli di Semenanjung terus dipantau berdasarkan pencapaian SAIDI oleh GMD dan SEC. Bagi 2023, bacaan SAIDI di Semenanjung dan Labuan ialah 0 minit/pelanggan.

Piped Gas Supply System SAIDI in the Non-Energy Sector

The Peninsula

The reliability of the natural gas distribution pipeline system in the Peninsula is continuously monitored based on SAIDI performance by GMD and SEC. For 2023, the SAIDI reading for the Peninsula and Labuan was 0 minutes/customer.

Prestasi Kualiti Kuasa

Power Quality Performance

Kejadian Junaman Voltan bagi TNB

Sebanyak 1,166 kejadian junaman voltan direkodkan oleh *Power Quality Management System* (PQMS) TNB di Semenanjung bagi 2023, berbanding 752 kejadian pada 2022. Nilai $SARFI_{70}$ bagi TNB pula mencatatkan peningkatan sebanyak 136 kepada 418, berbanding 282 pada 2022.

Selangor mencatatkan rekod $SARFI_{70}$ tertinggi iaitu pada nilai 74, diikuti Johor (69) dan Terengganu (54).

Bilangan aduan tertinggi yang direkodkan adalah di Pulau Pinang iaitu 460 aduan dengan 100 kejadian junaman voltan melibatkan 107 pengguna. Bagaimanapun, bilangan kejadian junaman voltan tertinggi direkodkan di Selangor dengan 222 kejadian, melibatkan 50 pengguna.

Kejadian Junaman Voltan bagi NUR Power Sdn. Bhd. (NUR)

Sebanyak 37 kejadian junaman voltan direkodkan di Kulim Hi-Tech Park (KHTP) bagi 2023, berbanding 32 kejadian pada 2022. Bilangan pengguna yang terlibat turut meningkat, daripada sembilan (9) pengguna melalui lima (5) kejadian pada 2020 kepada 37 pengguna melalui dua (2) kejadian pada 2023.

Terdapat tiga (3) insiden junaman voltan yang disebabkan oleh NUR sendiri, di mana satu (1) insiden menyebabkan pengguna terjejas, manakala dua (2) insiden lagi tidak menyebabkan pengguna terjejas.

Voltage Sag Incidents by TNB

A total of 1,166 voltage sag incidents were recorded by TNB's Power Quality Management System (PQMS) in the Peninsula for 2023, compared to 752 incidents in 2022. The $SARFI_{70}$ value for TNB also increased by 136 to 418, compared to 282 in 2022.

Selangor recorded the highest $SARFI_{70}$ record at a value of 74, followed by Johor (69) and Terengganu (54).

The highest number of complaints recorded was in Penang, with 460 complaints involving 100 voltage sag incidents affecting 107 customers. However, the highest number of voltage sag incidents was recorded in Selangor with 222 incidents, involving 50 customers.

Voltage Sag Incidents by NUR Power Sdn. Bhd. (NUR)

A total of 37 voltage sag incidents were recorded at Kulim Hi-Tech Park (KHTP) in 2023, compared to 32 incidents in 2022. The number of affected customers also increased, from nine (9) customers in five (5) incidents in 2020 to 37 customers in two (2) incidents in 2023.

There were three (3) voltage sag incidents caused by NUR itself, with one (1) incident affected the consumer, while the other two (2) incidents did not affect the consumer.

Pematuhan Terhadap Tahap Perkhidmatan yang Dijamin (GSL) dan Tahap Perkhidmatan Minimum (MSL) bagi Sektor Bekalan Elektrik

Compliance of the Guaranteed Service Levels (GSL) and Minimum Service Levels (MSL) for the Electricity Supply Sector

GSL dan MSL bagi TNB

GSL adalah tahap prestasi yang ditetapkan oleh ST bagi mengawal selia kualiti bekalan elektrik pemegang lesen, di mana sekiranya pemegang lesen gagal mematuhinya, penalti dalam bentuk rebat akan diberikan kepada pengguna. MSL pula adalah tahap prestasi minimum yang ditetapkan bagi mengukur kecekapan pemegang lesen dalam memberikan perkhidmatan kepada pengguna.

Bagi 2023, pencapaian GSL TNB adalah:

- Catatan GSL sebanyak 99.84%, lebih tinggi berbanding 99.73% pada 2022.
- GSL 1 & GSL 3 mencatatkan 100% pencapaian, di mana setiap permohonan dapat diselesaikan di dalam waktu yang ditetapkan.
- GSL 2 mencatatkan pencapaian 95.93% , GSL 4 sebanyak 99.87% dan GSL 5 sebanyak 99.99%.

Pencapaian keseluruhan MSL pula meningkat daripada 97.79% pada 2022 kepada 99.63% pada 2023. Kesemua MSL mencatatkan nilai melebihi 90% pencapaian.

Jumlah keseluruhan rebat penalti yang dibayar oleh TNB kepada pengguna adalah sebanyak RM35,268.29. Terdapat henti tugas tidak dirancang besar di bawah GSL 2 yang melibatkan 3,249 pengguna dan telah diberi rebat secara automatik dengan jumlah keseluruhan rebat RM29,583.69. Sebanyak 855 permohonan yang diterima berkaitan GSL dan daripada jumlah tersebut, 122 diluluskan dan bayaran telah dibuat ke akaun pengguna.

ST dan TNB juga telah menjalankan ulang kaji terhadap GSL dan MSL dengan menambah baik dan mengadakan penambahan penunjuk baru di dalam penunjuk perkhidmatan sedia ada TNB.

GSL and MSL for TNB

GSL refers to the performance level set by the Commission to regulate the quality of electricity supply licensees, where failure to comply results in penalties in the form of rebates to consumers. MSL, on the other hand, is the minimum performance level set to measure the efficiency of licensees in providing services to consumers.

For 2023, TNB's GSL achievements are as follows

- *GSL achievement recorded at 99.84%, higher than 99.73% in 2022.*
- *GSL 1 & GSL 3 achieved 100% performance, where each application was processed within the specified time.*
- *GSL 2 achieved 95.93%, GSL 4 achieved 99.87%, and GSL 5 achieved 99.99%.*

The overall MSL achievement increased from 97.79% in 2022 to 99.63% in 2023. All MSL recorded values exceeding 90% achievement.

The total amount of penalty rebates paid by TNB to consumers amounted to RM35,268.29. There was a major unplanned outage under GSL 2 involving 3,249 consumers, who have been given rebate automatically, with a total rebate of RM29,583.69. A total of 855 GSL-related applications were received, out of which 122 were approved and payments were made to consumers' accounts.

The Commission and TNB also conducted a review of GSL and MSL, enhancing and introducing new indicators in TNB's existing service indicators.

GSL dan MSL bagi SESB

Bagi meningkatkan prestasi perkhidmatan SESB kepada pengguna, GSL dan MSL ini telah digubal dan dibangunkan, di mana ST telah mengeluarkan Arahan berhubung GSL dan MSL SESB ini pada 2022.

Untuk 2023, tahap pencapaian GSL dan MSL SESB di Sabah adalah:

- Catatan GSL sebanyak 94.51%.
- Catatan MSL sebanyak 87.47%.

Tiada sebarang tuntutan yang diterima SESB dilaporkan bagi 2023. Kerjasama bersama pihak ST dan SESB juga dilaksanakan dalam memudah cara pengguna bagi membuat tuntutan permohonan rebat GSL.

GSL and MSL for SESB

To enhance SESB's service performance to consumers, GSL and MSL frameworks were developed, with the Commission issuing Directive on SESB's GSL and MSL in 2022.

For 2023, the achievement level of GSL and MSL for SESB in Sabah are:

- *GSL recorded at 94.51%.*
- *MSL recorded at 87.47%.*

No claims were reported to SESB for 2023. Collaboration between the Commission and SESB also facilitated the consumers claims process for GSL rebates.

GSL dan MSL bagi NUR

Bagi meningkatkan prestasi perkhidmatan NUR kepada pengguna, GSL dan MSL telah digubal dan dibangunkan, di mana ST telah mengeluarkan Arahan berhubung Penguatkuasaan GSL dan MSL NUR. ini pada Julai 2023. Tujuan Arahan ini dikeluarkan adalah bagi menetapkan tahap prestasi yang hendaklah dipatuhi oleh NUR berhubung kewajipan NUR untuk membekalkan elektrik kepada pengguna di KHTP, Kedah.

Penguatkuasaan GSL dan MSL NUR dilaksanakan bermula 2024 dan akan dipantau oleh ST.

GSL and MSL for NUR

To improve NUR's service performance to users, GSL and MSL frameworks were established, with the Commission issuing Directive on the Enforcement of NUR's GSL and MSL in July 2023. The purpose of these Guidelines is to set performance standards for NUR concerning its obligation to supply electricity to consumers in KHTP, Kedah.

Enforcement of NUR's GSL and MSL will commence in 2024 and will be monitored by the Commission.

Kajian Indeks Kepuasan Pelanggan TNB (CSI TNB)

TNB Customer Satisfaction Index (CSI-TNB) Survey

Objektif Kajian Indeks Kepuasan Pelanggan TNB (CSI-TNB) adalah bagi mencapai dan mengekalkan kualiti khidmat pelanggan yang terbaik, khususnya bagi:

- Mendapatkan tahap kepuasan pelanggan merentasi semua segmen.
- Mengenal pasti jurang antara jangkaan pelanggan dan perkhidmatan yang diberikan bagi menambah baik kualiti perkhidmatan.
- Menghasilkan pelan tindakan strategik bagi memenuhi keperluan pelanggan.

The objective of the TNB Customer Satisfaction Index (CSI-TNB) Study is to achieve and maintain the best quality of customer service, particularly in:

- *Attaining customer satisfaction levels across all segments.*
- *Identifying gaps between customer expectations and the services provided to improve service quality.*
- *Developing strategic action plans to meet customer needs.*

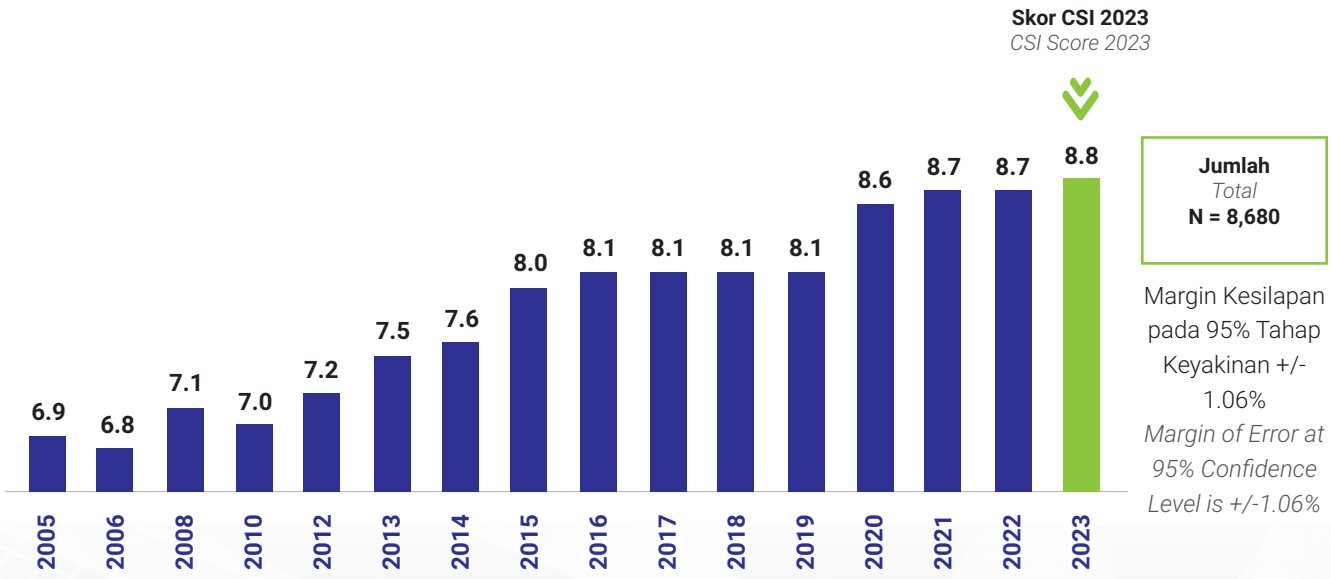
Pada 2023, TNB telah memulakan kajian lapangan CSI-TNB dari Ogos hingga November 2023 bagi seluruh Semenanjung. Sebanyak 8,680 responden telah dipilih dan ditemu ramah secara bersemuka bagi mendapatkan data yang tepat.

Secara keseluruhan, hasil kajian CSI-TNB telah merekodkan skor sebanyak 8.8, peningkatan berbanding 8.7 yang direkodkan pada 2022.

In 2023, TNB initiated the CSI-TNB field study from August to November 2023 across the entire Peninsula. A total of 8,680 respondents were selected and interviewed face-to-face to obtain accurate data.

Overall, the CSI-TNB study recorded a score of 8.8, an improvement compared to the 8.7 recorded in 2022.

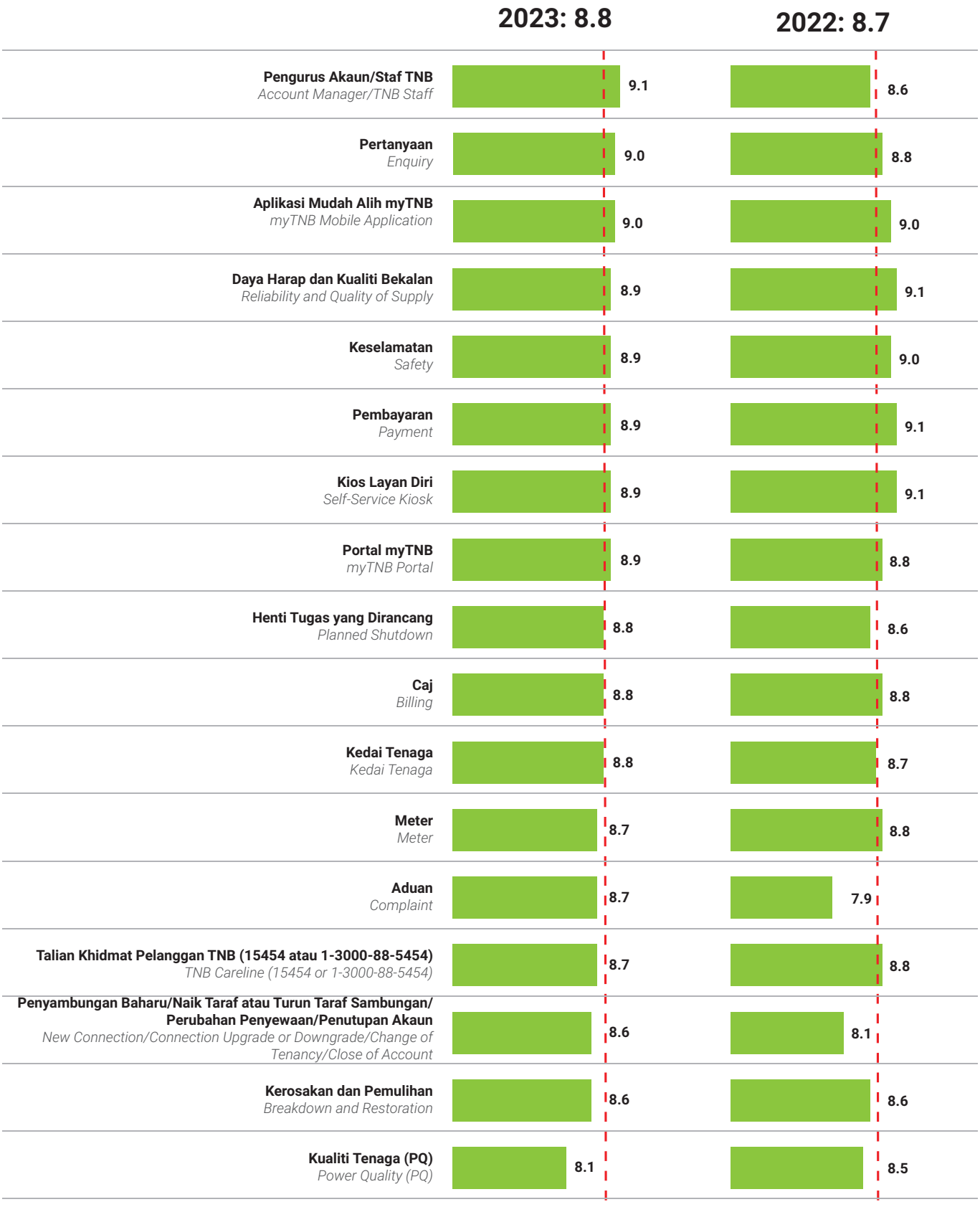
Skor CSI-TNB, 2005–2023
CSI-TNB Score, 2005–2023





Elemen yang Diambil Kira Dalam Pengiraan Skor CSI-TNB, 2022–2023

Elements Considered in the CSI-TNB Score Calculation, 2022–2023



Sorotan Utama

Main Highlights

Kajian Pindaan Kod Grid Semenanjung Malaysia

Sebagai langkah mendepani cabaran masa hadapan, Kajian Pindaan Kod Grid Semenanjung Malaysia (GCPM) dilaksanakan bermula Februari 2022 sehingga Jun 2023, bertujuan untuk menambah baik Kod Grid sedia ada dengan mengambil kira struktur industri pembekalan elektrik semasa. Melalui kajian ini juga, istilah dan terma di dalam Kod Grid diselaraskan dan diharmonikan dengan membuat perbandingan piawaian antarabangsa bagi mencerminkan amalan industri yang terkini. Kemas kini mengenai penyelarasan perancangan penjanaan dan sistem penghantaran turut dilakukan bagi memastikan pembangunan sistem grid yang optimum.

Selain itu, Kod Grid yang baharu akan bersedia dengan pengaplikasian teknologi dan model perniagaan baharu seperti sistem penstoran tenaga dan *demand response*. Kajian ini turut mengambil kira penstrukturan semula Kod Grid bagi memudahkan proses pindaan di masa akan datang. Hasil daripada kajian akan diangkat untuk kelulusan Kementerian sebelum dikuatkuasakan.

Jawatankuasa Pemandu (GCR-SC) yang diketuai oleh Ketua Pegawai Eksekutif ST dan dianggotai oleh wakil NRECC, TNB Grid, GSO dan SB telah ditubuhkan untuk memantau dan menentukan hala tuju keseluruhan kajian serta meneliti hasil dapatan pihak konsultan dan Kumpulan Kerja. Kumpulan Kerja (GCR-WG) terdiri daripada wakil ST, GSO, SB, TNB Grid, stesen-stesen jana kuasa (konvensional dan solar) dan pakar teknikal ST, yang bertanggungjawab memantau, memberi input dan cadangan kepada pihak konsultan sepanjang kajian dijalankan.

Pasukan Petugas Khas bagi Operasi Sistem Grid Sabah dan Labuan

Kekurangan purata 40 MW penjanaan di Sabah pada Mei 2023 disebabkan oleh henti tugas tidak berjadual beberapa buah stesen jana kuasa besar yang telah mengurangkan *operating reserve grid* ke tahap kritikal, sekali gus menjejaskan kestabilan sistem grid di Sabah dan Labuan. Ini termasuk Stesen Jana Kuasa Hidro Tenom Pangi yang berkapasiti 66 MW. Senario ini diburukkan lagi dengan penambahan permintaan tenaga yang tinggi disebabkan peningkatan aktiviti ekonomi dan cuaca yang panas. Disebabkan itu, *demand control* dan *load shedding* perlu dilakukan pada waktu puncak bagi mengelakkan ketidakstabilan grid secara keseluruhan.

Study on the Amendment of the Grid Code for Peninsular Malaysia

To address future challenges, the Amendment of the Grid Code for Peninsular Malaysia (GCPM) Study was conducted from February 2022 to June 2023. Its aim was to enhance the existing Grid Code by taking into account the current structure of the electricity supply industry. The study also harmonised and aligned terms and terminology within the Grid Code to international standards, reflecting contemporary industry practices. Updates were made to align generation and transmission system planning to ensure optimal grid system development.

Additionally, the new Grid Code will incorporate new technologies and business models such as energy storage systems and demand response. The study also considered restructuring the Grid Code to streamline future amendment processes. The findings from the study will be submitted for the Ministry's approval before implementation.

The Steering Committee (GCR-SC), led by the Commission's CEO and comprising representatives from NRECC, TNB Grid, GSO and SB, was established to oversee and determine the overall direction of the study. They reviewed the consultant's findings alongside the Working Group (GCR-WG), which includes representatives from the Commission, GSO, SB, TNB Grid, power generation stations (conventional and solar), and technical experts from the Commission. The Working Group was responsible for monitoring, providing input, and making recommendations to the consultants throughout the study period.

Special Task Force for Sabah and Labuan Grid System Operations

The shortage of the 40 MW average generation in Sabah in May 2023 was due to the unscheduled shutdown of several large power stations, which reduced the grid's operating reserve to critical levels, thereby affecting the grid stability in Sabah and Labuan. This included the Tenom Pangi Hydro Power Station with a capacity of 66 MW. This situation was exacerbated by high energy demand due to increased economic activities and hot weather conditions. Consequently, demand control and load shedding were necessary during peak hours to prevent overall grid instability.

Sehubungan itu, ST telah menubuhkan Pasukan Petugas Khas bagi memantau dan mengkoordinasi aktiviti pembekalan elektrik di Sabah, termasuk kecukupan bahan api dan penyelenggaraan stesen-stesen jana kuasa. Pasukan Petugas Khas ini dipengerusikan oleh Ketua Pegawai Eksekutif ST dan dianggotai oleh wakil-wakil pengurusan dari ST, SESB, Petronas, SEC, ECOS dan stesen-stesen jana kuasa di Sabah. Sebanyak 28 mesyuarat diadakan bagi mengkoordinasi aktiviti dan tindakan bagi memastikan grid Sabah dalam keadaan berdaya harap. Antara syor Pasukan Petugas Khas yang dilaksanakan ST ialah perolehan segera penjanaan berjumlah 100 MW kepada pihak SESB.

In response, the Commission has established a Special Task Force to monitor and coordinate electricity supply activities in Sabah, including fuel adequacy and maintenance of power stations. This Special Task Force is chaired by the Commission's CEO and comprised of the Commission's management,, SESB, Petronas, SEC, ECoS, and power stations in Sabah. A total of 28 meetings were held to coordinate activities and measures to ensure the reliability of the Sabah grid. One of the recommendations implemented by the Special Task Force was the immediate acquisition of 100 MW of generation capacity for SESB.

Pulau Tenaga Hijau

Sehingga akhir 2023, pelaksanaan projek Pulau Tenaga Hijau berjalan seperti yang dirancang dengan penyiapan pembinaan struktur *Building-Integrated Photovoltaics* (BIPV) yang pertama. BIPV merupakan sumber penjanaan kuasa bersih dan mampan yang menjadi asas dalam sasaran karbon sifar bersih di Pulau Perhentian dan Redang menjelang 2050.

Sejajar dengan Tarikh Operasi Komersial (COD) yang ditetapkan, BIPV ini telah dapat menghasilkan tenaga bersih ke dalam grid di Pulau Perhentian pada 30 November 2023. Kemajuan ini menandakan potensi maksimum sebanyak 120 kWac tenaga elektrik yang boleh disuntik masuk ke dalam grid Pulau Perhentian kelak.

Lebih menarik, BIPV ini dijangka dapat mengurangkan penggunaan sumber bahan api diesel di pulau tersebut sebanyak 6% setiap tahun.

Selain itu, antara pencapaian penting untuk 2023 ialah pemasangan meter pintar di Pulau Perhentian (321 unit) dan Pulau Redang (526 unit). Lampu jalan *High Pressure Sodium Vapour* (HPSV) sedia ada ditukar sepenuhnya kepada Diod Pancaran Cahaya (LED) yang lebih cekap tenaga di kedua-dua pulau. Sebanyak 52 unit lampu jalan yang digantikan di Pulau Perhentian akan menghasilkan penjimatan sebanyak 13,286 kWj setiap tahun, manakala sebanyak 128 unit lampu jalan di Pulau Redang digantikan, menghasilkan penjimatan sebanyak 32,448 kWj setiap tahun.

Kedua-dua pulau ini juga telah dilengkapi sepenuhnya dengan Sistem Maklumat Geospatial (GIS). Pelaksanaan GIS menyeluruh membolehkan keterlihatan, pemetaan geospasial dan analisis data untuk aset-aset pembekalan tenaga yang lengkap di pulau-pulau tersebut.

Green Energy Island

As of the end of 2023, the implementation of the Green Energy Island project progressed as planned, with the construction of the first Building-Integrated Photovoltaics (BIPV) structures completed. BIPV serves as a clean and sustainable power generation source, forming the foundation for achieving net-zero carbon goals on Perhentian and Redang Islands by 2050.

Aligned with the set Commercial Operation Date (COD) timeline, the BIPV successfully started generating clean energy into the grid on Perhentian Island on 30 November 2023. This development signifies a maximum potential of 120 kWac of electric power that can be injected into the Perhentian Island grid in the future.

Moreover, the BIPV is expected to reduce diesel fuel usage on this island by 6% annually.

Another significant achievement for 2023 includes the installation of smart meters on Pulau Perhentian (321 unit) and Pulau Redang (526 unit). Existing High Pressure Sodium Vapour (HPSV) street lights have been fully replaced with more energy-efficient Light Emitting Diode (LED) lights on both islands. Replacing 52 unit street lights on Pulau Perhentian will result in savings of 13,286 kWh per year, while replacing 128 unit street lights on Pulau Redang will save 32,448 kWh per year.

Both islands have also been fully equipped with a Geospatial Information System (GIS). The comprehensive GIS implementation enables visibility, geospatial mapping and data analysis for the islands' entire energy supply assets.

Pemasangan meter pintar, pelaksanaan GIS dan pemasangan lampu jalan LED adalah di bawah skop Teknologi Grid Pintar, yang merupakan langkah awal penting menuju kepada kemampuan grid pintar penuh di pulau-pulau tersebut. Dengan melaksanakan skop-skop penting ini, ia dapat meluaskan kemampuan lestari yang sama yang telah dialami di Lembah Klang kepada komuniti-komuniti pulau ini.

The installation of smart meters, GIS implementation and LED street light installation fall under the scope of Smart Grid Technology, marking a crucial initial step towards full smart grid capabilities on these islands. By implementing these key scopes, it extends the same sustainable capabilities experienced in the Klang Valley to these island communities.







4

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Pemantauan Kos dan Harga Bekalan Arang Batu

Monitoring the Cost and Price of Coal Supply

Harga arang batu ke stesen-stesen jana kuasa di Semenanjung ditetapkan melalui mekanisme *Applicable Coal Price (ACP)*, yang melibatkan proses penjadualan, penghantaran, perolehan arang batu, dan pembayaran kos tenaga.

Penetapan harga arang batu di bawah ACP dipantau secara bulanan atau suku tahunan dan diisytiharkan oleh Single Buyer (SB) kepada stesen-stesen jana kuasa. Mesyuarat ACP dipengerusikan oleh Ketua Pegawai Eksekutif ST dan dianggotai oleh wakil-wakil dari ST, Kementerian Sumber Asli, Alam Sekitar dan Perubahan Iklim (NRECC), Tenaga Nasional Berhad (TNB), SB, dan TNB Fuel Services Sdn. Bhd. (TNBF).

Mekanisme penetapan ACP adalah berdasarkan jumlah anggaran harga *Free on Board* (FOB), kos penghantaran, caj-caj pelabuhan dan insurans untuk arang batu, dan ditetapkan secara bulanan.

Pelarasan antara harga ACP yang ditetapkan dan harga sebenar pembelian arang batu dinamakan sebagai *Fuel Price Adjustment* (FPA), dan dilepaskan kepada pengguna melalui mekanisme Pelepasan Kos Tidak Berimbang (ICPT).

The price of coal to power stations in the Peninsula is determined through the Applicable Coal Price (ACP) mechanism, which involves scheduling, delivery, procurement of coal, and payment of energy costs.

The determination of coal prices under ACP is monitored monthly or quarterly and declared by the Single Buyer (SB) to power stations. The ACP meetings are chaired by the Commission's Chief Executive Officer and attended by representatives from the Commission, the Ministry of Natural Resources, Environment and Climate Change (NRECC), Tenaga Nasional Berhad (TNB), SB, and TNB Fuel Services Sdn. Bhd. (TNBF).

The ACP determination mechanism is based on the estimated Free on Board (FOB) price, transportation costs, port charges and insurance for coal, and is determined monthly.

The adjustment between the determined ACP price and the actual purchase price of coal is termed Fuel Price Adjustment (FPA), and is passed on to consumers through the Imbalance Cost Pass-Through (ICPT) mechanism.



Faktor Mempengaruhi Penetapan Harga ACP, 2023

Factors Influencing ACP Price Setting, 2023

Suku Pertama / *First Quarter*

Penurunan harga arang batu pada awal tahun akibat pengurangan pembelian besar-besaran oleh China dan India, dan harga domestik yang rendah di China.
Decrease in coal prices at the beginning of the year due to reduced large-scale purchases by China and India, and low domestic prices in China.

Musim hujan di Afrika Selatan yang mengganggu eksport arang batu.
Rainy season in South Africa disrupting coal exports.

Pengurangan bekalan arang batu dari Indonesia dan Australia disebabkan faktor cuaca.
Reduction in coal supplies from Indonesia and Australia due to weather factors.

Permintaan global untuk arang batu jenis bitumen menurun akibat stok tinggi di Amsterdam, Belanda.
Global demand for bituminous coal declined due to high stocks in Amsterdam, Netherlands.

Harga gas rendah menyebabkan permintaan arang batu yang lebih rendah.
Low gas prices lead to lower coal demand.

Pengurangan permintaan dari European Union (EU) disebabkan peningkatan penggunaan tenaga boleh baharu (TBB).
Reduced demand from the European Union (EU) due to increased use of renewable energy (RE).

China meningkatkan import arang batu akibat bekalan domestik yang tidak menentu.
China increasing coal imports due to uncertain domestic supplies.

Kenaikan kos pengangkutan arang batu.
Increase in coal transportation costs.

Stok tinggi di pelabuhan Amsterdam-Rotterdam-Antwerp (ARA).
High stocks at the Amsterdam-Rotterdam-Antwerp (ARA) port.

Penurunan permintaan dari Jepun dan kestabilan pasaran arang batu global.
Decreased demand from Japan and stability in the global coal market.

Suku Kedua / *Second Quarter*

Pemulihan bekalan arang batu dari Indonesia dan Australia.
Recovery of coal supplies from Indonesia and Australia.

Pembelian besar-besaran oleh India dan Pakistan dari Rusia.
Bulk purchases by India and Pakistan from Russia.

Pengurangan pembelian oleh China dan India akibat bekalan domestik mencukupi.
Reduction in purchases by China and India due to sufficient domestic supplies.

Pengurangan pengeluaran tenaga hidroelektrik di China akibat musim panas.
Reduction in hydroelectric power generation in China due to the summer season.

Harga pasaran arang batu yang rendah dan dijangka kekal sebagai paras terendah.
Low market prices for coal, and are expected to remain at their lowest levels.

Permintaan tinggi dari China, India dan Bangladesh untuk musim sejuk.
High demand from China, India and Bangladesh for the winter season.

Penyimpanan arang batu di China untuk *Golden Week Holiday* pada Oktober.
Stockpiling of coal in China for the Golden Week Holiday in October.

Gangguan operasi oleh pembekal arang batu dari Indonesia.
Operational disruptions by coal suppliers from Indonesia.

Permintaan tinggi dari China dan India menjelang musim sejuk.
High demand from China and India ahead of the winter season.

Kenaikan harga arang batu domestik di China akibat kemalangan di lombong.
Increase in domestic coal prices in China due to accidents in mines.

Pengurangan permintaan dari China dan India menjelang perayaan Dussehra dan cuaca tidak menentu di Indonesia.
Reduction in demand from China and India ahead of the Dussehra celebration and uncertain weather in Indonesia.

Suku Ketiga / *Third Quarter*

Suku Keempat / *Fourth Quarter*

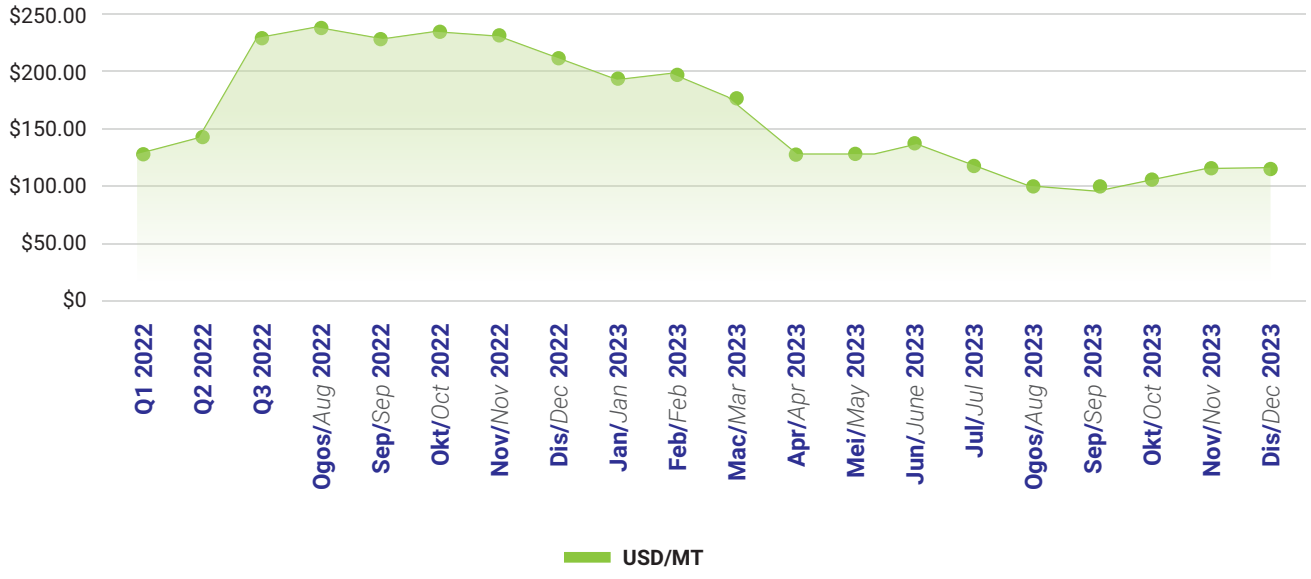
Purata *Applicable Coal Price*, 2023

Average Applicable Coal Price, 2023

Bulan *Month*	Harga ACP (USD/MT) *ACP Price (USD/MT)*
Januari *January*	**196.51**
Februari *February*	**201.62**
Mac *March*	**177.75**
April *April*	**134.44**
Mei *May*	**133.10**
Jun *June*	**139.82**
Julai *July*	**124.67**
Ogos *August*	**106.87**
September *September*	**103.78**
Oktober *October*	**113.40**
November *November*	**121.20**
Disember *December*	**121.56**

Pergerakan ACP, 2022–2023

Movement of ACP, 2022–2023



Pelaksanaan *New Enhanced Dispatch Arrangement* (NEDA)

Implementation of New Enhanced Dispatch Arrangement (NEDA)

NEDA merupakan inisiatif yang dilancarkan sejak 2017, bertujuan memberi manfaat kepada negara dengan kos penjanaan yang lebih kompetitif serta meningkatkan kecekapan kos penjanaan melalui persaingan jangka pendek. Ia juga menggalakkan penggunaan teknologi yang cekap, seperti penglibatan loji jana kuasa kojana dalam pasaran elektrik, serta memberi peluang untuk penjana tanpa Perjanjian Pembelian Tenaga (PPA) untuk beroperasi sebagai *Merchant Plant* dan menawarkan tenaga kepada SB. Ia juga dapat meningkatkan opsyen perniagaan untuk penjana PPA yang telah tamat tempoh dan penjana lain dengan memaksimumkan penggunaan fasiliti sedia ada secara cekap dan kos efektif untuk faedah industri bekalan elektrik dan pengguna.

NEDA is an initiative launched in 2017, aimed at benefiting the country with more competitive generation costs and enhancing generation cost efficiency through short-term competition. It also encourages the use of efficient technologies, such as the involvement of power plants in the electricity market, and provides opportunities for non-Power Purchase Agreement (PPA) generators to operate as Merchant Plants and offer power to the SB. It can also enhance business options for expired PPA generators and other generators by maximising the efficient and cost-effective use of existing facilities for the benefit of the electricity supply industry and consumers.

Stesen Jana Kuasa yang Menyertai NEDA bagi Kategori *Price Taker*
Power Plants Participating in NEDA for the Price Taker Category

Peserta *Participants*	**Kategori** *Category*	**Kapasiti Berdaftar(MW)** *Registered Capacity (MW)*	**Hari Dagangan Pertama** *First Trading Day*
NUR Generation	***Price Taker (Small Franchise Utility)***	**29.9**	**18 Mac 2019** *18 March 2019*
Petronas Chemicals Fertiliser Kedah (PCFK)	***Price Taker (Co-Gen)***	**8.0**	**15 Jun 2019** *15 June 2019*
Perstima Utility	***Price Taker (Co-Gen)***	**3.6**	**19 September 2019** *19 September 2019*
PETRONAS Centralised Utility Facility Gebeng	***Price Taker (Co-Gen)***	**29.9**	**20 Ogos 2021** *20 August 2021*
PETRONAS Centralised Utility Facility Kertih	***Price Taker (Co-Gen)***	**29.9**	**20 Ogos 2021** *20 August 2021*
Eastern Power Resources	***Price Taker (Co-Gen)***	**29.9**	**22 Julai 2022** *22 July 2022*

Tiada penyertaan baharu bagi program NEDA untuk 2023, menjadikan jumlah penyertaan NEDA kekal sebanyak 131.20 MW. Selain itu, terdapat tiga (3) loji jana kuasa solar sedang dibangunkan dan dijangka mula beroperasi pada 2024. Loji jana kuasa tersebut merupakan peserta bagi kategori *Price Taker* yang bakal meningkatkan lagi penyertaan NEDA seperti berikut:

i. Sand Town Solar (29.9 MW)
ii. NEDA Power (8 MW)
iii. NEDA Pekan (29.9 MW)

Penyertaan ke NEDA melalui pembangunan loji jana kuasa solar dijangka meningkat memandangkan pelaksanaan Program Tenaga Hijau Korporat (CGPP) telah selesai dengan kuota sebanyak 800 MW pada 2023. Loji-loji jana kuasa solar ini disasarkan untuk mula beroperasi selewat-lewatnya pada 2025 melalui mekanisme NEDA.

Penyertaan tinggi daripada peserta bakal membuka potensi penuh mekanisme NEDA, sekali gus mencapai objektif NEDA untuk mendapatkan kos penjanaan yang lebih murah.

There are no new entries for the NEDA programme for 2023, maintaining the total NEDA participation at 131.20 MW. Additionally, three (3) solar power plants are under construction and expected to commence operations in 2024. These power plants will participate in the Price Taker category, further increasing NEDA participation as follows:

i. Sand Town Solar (29.9 MW)
ii. NEDA Power (8 MW)
iii. NEDA Pekan (29.9 MW)

Participation in NEDA through the development of solar power plants is expected to increase, considering the completion of the Corporate Green Power Programme (CGPP) with a quota of 800 MW in 2023. These solar power plants are targeted to start operations no later than 2025 through the NEDA mechanism.

High participation from participants will unlock the full potential of the NEDA mechanism, thereby achieving the NEDA objective of obtaining cheaper generation costs.

Pemantauan Pelaksanaan *Ring-Fencing* SB dan GSO di Semenanjung

Monitoring the Implementation of SB and GSO Ring-Fencing in the Peninsula

Sebagai langkah kawal selia aktiviti *ring-fencing* SB dan Grid System Operator (GSO) serta pematuhannya terhadap fungsi dan tanggungjawab yang telah digariskan, *Oversight Panel for Ring-Fenced Single Buyer and Ring-Fenced Grid System Operator* telah bersidang pada 3 Julai 2023 dan 12 Disember 2023. Antara perkara yang dibincangkan adalah:

i. Program dan aktiviti yang dijalankan oleh SB dan GSO.
ii. Dapatan Audit Pematuhan SB dan GSO pada 2022.
iii. Hala tuju pembangunan TBB dan perdagangan TBB merentas sempadan.
iv. Perancangan *National Energy Transition Roadmap* (NETR).
v. Ketersediaan sistem grid bagi capaian *variable renewable energy* (VRE) yang tinggi.
vi. Perancangan dan ketersediaan SB dan GSO sebagai entiti bebas.

As part of overseeing the ring-fencing activities of the SB and Grid System Operator (GSO), and their compliance with the outlined functions and responsibilities, the Oversight Panel for Ring-Fenced Single Buyer and Ring-Fenced Grid System Operator convened on 3 July 2023 and 12 December 2023. Among the topics discussed were:

i. Programmes and activities carried out by SB and GSO.
ii. Findings of the SB and GSO Compliance Audit in 2022.
iii. Direction of the development of RE and cross-border RE trading.
iv. Planning the National Energy Transition Roadmap (NETR).
v. Grid system readiness for high variable renewable energy (VRE) penetration.
vi. Planning and readiness of SB and GSO as independent entities.

Di bawah garis panduan SB, terdapat tiga (3) kumpulan kerja utama yang perlu ditubuhkan untuk menyemak proses dan hasil serta memberikan cadangan penambahbaikan kepada SB dan peserta pasaran iaitu:

1. *Dispatch Scheduling Working Group*
   - Memberi panduan dan memantau ramalan operasi jangka masa pendek dan sederhana, termasuklah perancangan penghantaran beban dan keperluan bahan api.
   - Mesyuarat dijalankan setiap suku tahunan.
   - Untuk 2023, antara isu utama yang dibincangkan adalah:
     i. Perancangan operasi 2023 melalui *One Year Demand and Supply Outlook*.
     ii. Prestasi penggunaan bahan api gas di bawah mekanisme *Gas Framework Agreement* (GFA).
     iii. Prestasi penjanaan TBB melalui pemantauan projek-projek solar berskala besar (LSS) di talian pembahagian dan pengagihan.
     iv. Prestasi program NEDA dan CGPP.
     v. Kemas kini data unjuran sistem PLEXOS, iaitu perisian simulasi untuk analisis pasaran tenaga.

2. *Long-term Demand and Supply Working Group*
   - Membincangkan perancangan pembekalan jangka panjang iaitu untuk tempoh 10 tahun operasi.

3. *Single Buyer Website Working Group*
   - Medium perbincangan bagi penerbitan maklumat dan panduan di laman sesawang SB.

Pelaksanaan audit pematuhan SB dan GSO Semenanjung bagi tahun operasi 2017 sehingga 2021 telah siap dijalankan pada Disember 2022. Penubuhan kumpulan kerja bagi memenuhi dapatan audit pula ditubuhkan pada 3 Julai 2023. Antara dapatan audit yang dipenuhi adalah:

i. Mengemas kini garis panduan SB dan garis panduan GSO bagi mencerminkan keadaan operasi semasa dan terminologi yang digunakan.
ii. Menyelaras jawatankuasa dan kumpulan kerja yang ditubuhkan.

Under the SB guidelines, three (3) main working groups need to be established to review processes and outcomes and provide improvement suggestions to SB and market participants, which are:

1. *Dispatch Scheduling Working Group*
   - *Providing guidance and monitoring short- and medium-term operational forecasts, including load dispatch planning and fuel requirements.*
   - *Meetings are held quarterly.*
   - *For 2023, key issues discussed included:*
     ii. Operation planning for 2023 through the One Year Demand and Supply Outlook.
     iii. Performance of gas fuel usage under the Gas Framework Agreement (GFA) mechanism.
     iv. Performance of RE generation through monitoring large-scale solar projects (LSS) in the transmission and distribution lines.
     v. Performance of the NEDA and CGPP programmes.
     vi. Updating of PLEXOS system forecasting data, which is a simulation software for energy market analysis.

2. *Long-term Demand and Supply Working Group*
   - *Discusses long-term supply planning for a 10-year operational period.*

3. *Single Buyer Website Working Group*
   - *Facilitates discussions for the publication of information and guidelines on the SB website.*

The implementation of compliance audits for SB and GSO in the Peninsula for the operational years 2017 to 2021 was completed in December 2022. The establishment of working groups to address audit findings was initiated on 3 July 2023. Among the audit findings addressed were:

i. Updating SB and GSO guidelines to reflect current operational conditions and terminology used.
ii. Coordinating established committees and working groups.

Garis Panduan SB dan GSO di Sabah dan Labuan

SB and GSO Guidelines in Sabah and Labuan

Guidelines for Single Buyer (Sabah and Federal Territory of Labuan) 2023 dan *Guidelines for Grid System Operator (Sabah and Federal Territory of Labuan) 2023* dibangunkan bertujuan untuk mengelakkan diskriminasi atau persepsi terdapat diskriminasi dalam proses penjadualan dan arahan pengoperasian penjanaan tenaga di Sabah dan Labuan.

Konsep yang digunakan bagi pembangunan kedua-dua garis panduan tersebut adalah *"adapt and adopt"* daripada garis panduan sedia ada yang diguna pakai di Semenanjung iaitu *Guidelines for Single Buyer Market (Peninsular Malaysia)* dan *Guidelines for Ring-Fencing of the System Operator (Peninsular Malaysia) 2016* yang memperuntukkan elemen *ring-fencing* melalui pendekatan *"principles-based approach"*.

Elemen *ring-fencing* tersebut adalah bagi memastikan bahawa GSO dan SB tidak berpotensi terlibat dalam mana-mana situasi konflik, dan perkara ini dilaksanakan melalui pengasingan akaun, operasi, kod etika kerja, tiada diskriminasi dalam mana-mana keputusan yang diambil, mengenal pasti sempadan dan keperluan perkongsian maklumat serta peruntukan kos perbelanjaan.

Bagi kemudahan bersama antara GSO dan SB dengan bahagian-bahagian lain di dalam Sabah Electricity Sdn. Bhd. (SESB), *Service Level Agreement* (SLA) perlu ditandatangani dengan bahagian SESB yang berkaitan. Antara SLA yang perlu dilaksanakan adalah berkaitan dengan hal kewangan, sumber manusia, teknologi maklumat dan komunikasi (ICT) dan perolehan.

Pada 22 Disember 2021, Jemaah Menteri telah meluluskan cadangan pelaksanaan mekanisme Kawal Selia Berasaskan Insentif (IBR) bagi SESB untuk tempoh kawal selia pertama bermula pada 1 Januari 2022 hingga 31 Disember 2024.

The Guidelines for Single Buyer (Sabah and Federal Territory of Labuan) 2023 and Guidelines for Grid System Operator (Sabah and Federal Territory of Labuan) 2023 were developed with the aim of preventing discrimination or perceptions of discrimination in the scheduling and operational directives of power generation in Sabah and Labuan.

The concept used for the development of both guidelines is "adapt and adopt" from the existing guidelines used in the Peninsula, namely the Guidelines for Single Buyer Market (Peninsular Malaysia) and Guidelines for Ring-Fencing of the System Operator (Peninsular Malaysia) 2016, which provide ring-fencing elements through a "principles-based approach".

These ring-fencing elements are to ensure that the GSO and SB are not potentially involved in any conflict situations, and this is implemented through the segregation of accounts, operations, code of conduct, no discrimination in any decisions made, identifying boundaries and information sharing requirements, as well as expenditure allocation provisions.

For shared facilities between the GSO and SB with other divisions within Sabah Electricity Sdn. Bhd. (SESB), Service Level Agreements (SLAs) need to be signed with the relevant divisions of SESB. Among the SLAs that need to be implemented are those related to finance, human resources, information and communication technology (ICT) and procurement.

On 22 December 2021, the Cabinet approved the implementation proposal of the Incentive-Based Regulation (IBR) mechanism for SESB for the first regulatory period from 1 January 2022 to 31 December 2024.

Menteri Tenaga dan Sumber Asli pada 12 Ogos 2022 bersetuju dengan perkara yang berikut:

- *Ring-Fencing Arrangement* bagi SB dan GSO di Sabah dan Labuan dilaksanakan dengan menggunakan pendekatan *principles-based approach* seperti di Semenanjung.
- Pengurus Besar, Jabatan Pengendali Sistem, Bahagian Pengurusan Aset SESB dilantik sebagai *Head of GSO Sabah*.
- Pengurus Besar, Jabatan Pembeli Tunggal, Bahagian Pembangunan Aset SESB dilantik sebagai *Head of SB Sabah*.

Perintah telah ditandatangani oleh Menteri dan dimajukan kepada Jabatan Peguam Negara untuk proses pewartaan pada 16 Januari 2023 iaitu:

- Perintah Bekalan Elektrik (Pemberian Kuasa untuk Menjadi Pembeli Tunggal di Sabah) 2023.
- Perintah Bekalan Elektrik (Pemberian Kuasa untuk Menjadi Pembeli Tunggal di Wilayah Persekutuan Labuan) 2023.
- Perintah Bekalan Elektrik (Pemberian Kuasa untuk Menjadi Pengendali Sistem di Sabah) 2023.
- Perintah Bekalan Elektrik (Pemberian Kuasa untuk Menjadi Pengendali Sistem di Wilayah Persekutuan Labuan) 2023.

On 12 August 2022, the Minister of Energy and Natural Resources agreed to the following matters:

- *Ring-Fencing Arrangement for SB and GSO in Sabah and Labuan implemented using a principles-based approach as in the Peninsula.*
- *The General Manager of the System Control Department, Asset Management Division of SESB appointed as the Head of GSO Sabah.*
- *The General Manager of the Single Buyer Department, Asset Development Division of SESB appointed as the Head of SB Sabah.*

Orders were signed by the Minister and submitted to the Attorney General's Chambers for the gazetting process on 16 January 2023, namely:

- *Electricity Supply (Authorization to be a Single Buyer in Sabah) Order 2023.*
- *Electricity Supply (Authorization to be a Single Buyer in the Federal Territory of Labuan) Order 2023.*
- *Electricity Supply (Authorization to be a System Operator in Sabah) Order 2023.*
- *Electricity Supply (Authorization to be a System Operator in the Federal Territory of Labuan) Order 2023.*



Mesyuarat Kumpulan Kerja SB
The SB Working Group Meeting



Lawatan Teknikal di Stesen Jana Kuasa Sepanggar Bay Power Corporation, Kota Kinabalu
Technical Visit to Sepanggar Bay Power Corporation Power Station, Kota Kinabalu

Selaras dengan perintah-perintah berkenaan, dua (2) garis panduan mula beroperasi pada 1 Mac 2023. Antara aktiviti-aktiviti yang dilaksanakan adalah:

- Penyediaan pelan peralihan kepada *ring-fenced* GSO dan *ring-fenced* SB oleh SESB.
- Pendaftaran sebagai peserta pasaran di dalam *Single Buyer Market.*
- Penubuhan Kumpulan Kerja di bawah *Guideline for Single Buyer (Sabah dan Federal Territory of Labuan) 2023*.

In line with the relevant orders, two (2) guidelines commenced operations on 1 March 2023. Among the activities carried out were:

- *Preparation of transition plans for ring-fenced GSO and ring-fenced SB by SESB.*
- *Registration as market participants in the Single Buyer Market.*
- *Establishment of Working Groups under the Guidelines for Single Buyer (Sabah and Federal Territory of Labuan) 2023.*

Ke Arah Tarif Elektrik yang Kos Reflektif

Towards a Cost-Reflective Electricity Tariff

Penstrukturan semula tarif elektrik TNB yang berdasarkan kos reflektif telah dibincangkan sejak rangka kerja IBR dilaksanakan di Semenanjung, yang mana kajian *cost of service* pernah dijalankan serta cadangan peralihan kepada tarif yang kos reflektif secara berperingkat juga telah disyorkan kepada Kerajaan. Namun, cadangan peralihan tarif ini belum dapat dilaksanakan berikutan Kerajaan berpandangan terdapat keperluan untuk mengkaji impak pelaksanaan cadangan tersebut. Lanjutan itu, Kerajaan memutuskan supaya jadual tarif sedia ada yang diguna pakai sejak tahun 2014 kekal untuk dilaksanakan dalam tempoh kawal selia ketiga (2022–2024).

Oleh itu, bagi merealisasikan cadangan penstrukturan semula tarif elektrik TNB bagi tempoh kawal selia akan datang, satu mesyuarat yang dipengerusikan oleh Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim, serta dihadiri oleh wakil NRECC, ST dan MyPower diadakan pada 28 April 2023 bagi membincangkan inisiatif-inisiatif hasil kajian *Future Proofing* Industri Pembekalan Elektrik Malaysia *(*MESI), seperti berikut:

- Inisiatif 9: Penstrukturan Semula Tarif Elektrik.
- Inisiatif 10: Semakan Semula Subsidi Bekalan Elektrik Ke Arah Subsidi Bersasar.

Lanjutan mesyuarat tersebut, Menteri telah bersetuju dan memutuskan perkara-perkara seperti berikut:

i. Supaya cadangan perubahan struktur tarif elektrik berdasarkan kos pembekalan sebenar dilaksanakan seawal-awalnya pada tempoh kawal selia keempat di bawah rangka kerja IBR 2025–2027, yang mana perincian usaha bagi melaksanakan inisiatif-inisiatif ini akan dirancang dengan melibatkan semua pihak yang berkepentingan.
ii. Supaya kaedah pengiraan dan contoh bil baharu berdasarkan cadangan struktur tarif baharu disediakan untuk tujuan sesi libat urus dengan pemegang taruh kelak.

Bagi mencapai sasaran Kerajaan ini, ST telah meluncurkan gerak kerja berikut:

i. Sesi-sesi libat urus bersama pemegang-pemegang taruh seperti NRECC, MyPower, TNB dan SB pada 3 Julai 2023 dan 10–11 Oktober 2023.
ii. Gerak kerja kajian semakan semula kadar tarif asas Semenanjung untuk IBR RP4: 2025–2027.

The restructuring of TNB electricity tariffs based on reflective costs has been discussed since the implementation of the IBR framework in the Peninsula, where a cost of service study was conducted, and a phased transition proposal to cost-reflective tariffs was recommended to the Government. However, the transition proposal has not been implemented as the Government deemed it necessary to assess the impact of its implementation. Consequently, the Government decided that the existing tariff schedule, which is used since 2014, remain to be used in the third regulatory period (2022-2024).

To realise the restructuring proposal of TNB electricity tariffs for the upcoming regulatory period, a meeting chaired by the Minister of Natural Resources, Environment and Climate Change and attended by representatives from NRECC, the Commission, and MyPower, was held on 28 April 2023, to discuss initiatives resulting from the Future Proofing of the Malaysian Electricity Supply Industry (MESI) study, as follows:

- *Initiative 9: Restructuring of Electricity Tariffs.*
- *Initiative 10: Review of Electricity Supply Subsidies Towards Targeted Subsidies.*

Following the continuation of the meeting, the Minister agreed and decided on the following matters:

i. That the proposal for changes to the electricity tariff structure based on actual supply costs be implemented as early as the fourth regulatory period under the IBR framework 2025–2027, with detailed efforts to implement these initiatives to be planned involving all stakeholders.
ii. That the method of calculation and new bill samples based on the proposed new tariff structure be provided for the purpose of future stakeholder engagement sessions.

To achieve this Government objective, the Commission has launched the following initiatives:

i. Engagement sessions with stakeholders such as NRECC, MyPower, TNB, and SB on 3 July 2023 and 10–11 October 2023.
ii. A review of the Peninsula's base tariff rates for IBR RP4: 2025–2027.

Sesi-Sesi Libat Urus Bersama Pemegang-pemegang Taruh

Perkara-perkara yang dibincangkan semasa sesi-sesi libat urus ini adalah:

i. Isu-isu asas dalam struktur tarif semasa yang perlu diberikan keutamaan dan penyelesaian segera, seperti elemen subsidi bersilang antara kategori dan ketidaksepadanan antara kos dan hasil pendapatan.
ii. Prinsip-prinsip utama untuk dipertimbangkan dalam usaha penstrukturan semula tarif seperti tarif kos reflektif, penyelarasan kos dan hasil pendapatan TNB, pelaksanaan subsidi bersasar dan ketelusan tarif elektrif.
iii. Penambahbaikan yang dicadangkan berkenaan struktur tarif elektrik semasa seperti pelarasan tarif berdasarkan kos, mekanisme pelarasan kos bahan api secara automatik (AFA), bil terperinci dan penambahbaikan garis panduan penetapan tarif, selaras dengan penambahbaikan/perubahan yang bakal dilaksanakan.

Input yang dikumpulkan daripada semua sesi libat urus ini akan diambil kira dalam kajian semakan semula kadar tarif asas Semenanjung bagi IBR RP4 yang akan dilaksanakan pada 2024.

Stakeholder Engagement Sessions

The matters discussed during these stakeholder engagement sessions include:

i. Fundamental issues in the current tariff structure that need immediate attention and resolution, such as cross-subsidy elements between categories and the cost and revenue mismatch.
ii. Key principles to consider in the effort to restructure tariffs, such as cost-reflective tariffs, alignment of TNB's revenue and cost structure, targeted subsidy implementation and electricity tariff transparency.
iii. Proposed improvements regarding the current electricity tariff structure, such as cost-based tariff adjustments, Automatic Fuel Adjustment (AFA) mechanisms, itemised billing, and enhancements to tariff-setting guidelines, in line with forthcoming improvements/changes.

Input gathered from all these engagement sessions will be taken into account in the review of the Peninsula's base tariff rates for IBR RP4, scheduled for 2024.

Pelaksanaan Kajian Semakan Semula Kadar Tarif Asas Semenanjung Untuk IBR RP4: 2025–2027

Berpandukan kepada *Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation 2022* (RIG 2022), ST akan memulakan semakan semula cadangan kadar tarif asas Semenanjung bagi IBR RP4: 2025–2027 bermula pada 2024. Namun begitu, gerak kerja pelaksanaan kajian ini telah bermula sejak 2023.

ST telah memaklumkan kepada TNB mengenai perkara-perkara asas berkaitan dengan kajian semakan semula kadar tarif ini seperti pelaksanaan tempoh kawal selia, unjuran permintaan berdasarkan Mesyuarat Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tarif (JPPPET), model keperluan hasil dan garis masa bagi kajian ini.

Implementation of the Peninsula Base Tariff Rate Review Study for IBR RP4: 2025–2027

Based on the Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation 2022 (RIG 2022), the Commission will commence the review of the Peninsula's base tariff rates for IBR RP4: 2025–2027 starting in 2024. However, the implementation workflow for this study has already begun since 2023.

The Commission has informed TNB about the fundamental matters related to this review study, such as the regulatory period implementation, demand projections based on the Meeting of the Electricity Supply and Tariff Planning and Implementation Committee (JPPPET), revenue requirement models, and the timeline for this study.

Garis Masa Penyerahan Cadangan Semakan Semula Kadar Tarif Asas di Semenanjung bagi IBR RP4

Timeline for Submission of Proposal for Review of Base Tariff Rates in the Peninsula for IBR RP4

Fasa *Phase*	Tarikh Penyerahan *Submission Date*	Cadangan Tarif Asas IBR RP4 *Proposal for Base Tariff Rates IBR RP4*
Pertama *First*	**1 November 2023** *1 November 2023*	• **Petunjuk Prestasi Utama (KPI)** *Key Performance Indicator (KPI)* • ***Corporate Cost Charging Methodology***
Kedua *Second*	**1 Disember 2023** *1 December 2023*	• **Pendapatan Dibenarkan Entiti Perniagaan yang Dikawal** *Regulated Business Entities' Allowed Revenues* • **Model Keperluan Pendapatan (RRM)** *Revenue Requirement Model (RRM)* • **Purata Wajaran Kos Modal (WACC)** *Weighted Average Cost of Capital (WACC)*
Ketiga *Third*	**1 Mac 2024** *1 March 2024*	• **Cadangan Jadual Tarif** *Tariff Schedule Proposal*

Sesi penyerahan Cadangan Semakan Semula Kadar Tarif Asas RP4 – Fasa Pertama: *Key Performance Indicators (KPI)/ Quality of Service Incentive Scheme* dan *Corporate Cost Charging Methodology* diadakan pada 1 November 2023. Sesi ini dihadiri oleh pegawai-pegawai ST dan TNB.

Bagi fasa kedua pula, sesi penyerahan Cadangan Semakan Semula Kadar Tarif Asas RP4 yang merangkumi cadangan keperluan modal dan kadar WACC telah diadakan pada 1 Disember 2023. Sesi ini dipengerusikan oleh Ketua Pegawai Eksekutif ST dan dihadiri oleh pegawai-pegawai ST dan TNB.

Lanjutan itu, sesi semakan terhadap cadangan-cadangan yang dikemukakan oleh TNB sedang dijalankan, sebelum sebarang keputusan mengenai cadangan ini dikemukakan kepada Kementerian.

The session for the submission of the Proposal for Review of Base Tariff Rates RP4 - Phase One: Key Performance Indicators (KPI)/Quality of Service Incentive Scheme and Corporate Cost Charging Methodology was held on 1 November 2023. This session was attended by officials from the Commission and TNB.

For the second phase, the session for the submission of the Proposal for Review of Base Tariff Rates RP4, which includes proposals for capital requirements and WACC rates, was held on 1 December 2023. This session was chaired by the Commission's CEO and attended by the Commission's and TNB's officials.

Furthermore, a review session of the proposals submitted by TNB is currently ongoing before any decisions regarding these proposals are presented to the Ministry.

Pelaksanaan Rangka Kerja IBR bagi TNB di Semenanjung

Implementation of the IBR Framework for TNB in the Peninsula

Penetapan tarif elektrik untuk TNB dilaksanakan melalui rangka kerja IBR yang mempunyai dua (2) komponen utama, iaitu tarif asas dan ICPT. Tarif asas tidak berubah dalam tempoh kawal selia IBR yang disemak setiap tiga (3) tahun manakala kadar ICPT diselaraskan setiap enam (6) bulan, bergantung kepada perubahan kos bahan api bagi penjanaan elektrik.

The electricity tariff setting for TNB is implemented through the IBR framework, which consists of two (2) main components: the base tariff and ICPT. The base tariff remains unchanged during each regulatory period of IBR that is reviewed every three (3) years, while the ICPT rate is adjusted every six (6) months, depending on changes in fuel costs for electricity generation.

Pelaksanaan IBR di Semenanjung telah memasuki tempoh kawal selia ketiga (RP3) iaitu dari 2022 hingga 2024, sementara pelaksanaan ICPT pada semakan kali ini telah pun memasuki tahun kedua RP3.

Pelaksanaan rangka kerja IBR dan mekanisme ICPT ini juga adalah selaras dengan peruntukan yang terdapat pada garis panduan penetapan kadar tarif asas di Semenanjung iaitu *Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation for Peninsular Malaysia 2022* (RIG 2022).

Kerajaan telah memperuntukkan subsidi sebanyak RM15.96 bilion bagi menampung kos ICPT kepada pengguna bersasar pada 2023 di mana sebanyak RM10.76 bilion subsidi diperuntukkan bagi menampung kos ICPT bagi tempoh pelaksanaan Januari hingga Jun 2023 dan sejumlah RM5.2 bilion subsidi diperuntukkan bagi menampung kos ICPT bagi tempoh pelaksanaan Julai hingga Disember 2023, bagi meminimumkan impak ICPT.

Penetapan Kadar ICPT Bagi Tempoh Pelaksanaan Januari–Jun 2023

Bagi tempoh 1 Julai hingga 31 Disember 2022, terdapat peningkatan yang lebih tinggi dalam kos bahan api dan kos penjanaan lain sebanyak RM16.4 bilion, atau bersamaan dengan surcaj ICPT pada kadar 27 sen/kWj. Peningkatan kos tersebut ialah ekoran daripada kenaikan kos bahan api di pasaran dunia yang berpunca daripada krisis global dan kekangan bekalan arang batu dunia.

Kerajaan pada 16 Disember 2022 telah bersetuju dan memutuskan pelaksanaan pelarasan tarif elektrik seperti berikut:

i. Semua pengguna kategori tarif domestik (tarif A) tidak akan mengalami kenaikan tarif elektrik kerana rebat 2 sen/kWj dikekalkan sepertimana tempoh ICPT sebelumnya.
ii. Semua pengguna kategori tarif voltan rendah (tarif B dan tarif D) yang terdiri daripada Perusahaan Mikro, Kecil Dan Sederhana (PMKS) tidak akan mengalami sebarang kenaikan tarif elektrik, kerana surcaj 3.7 sen/kWj dikekalkan.
iii. Semua pengguna kategori tarif pertanian spesifik voltan rendah dan sederhana (tarif H, H1 dan H2) tidak akan mengalami sebarang kenaikan tarif elektrik, kerana surcaj 3.7 sen/kWj dikekalkan.
iv. Semua pengguna selain daripada kategori dalam sub perenggan (ii) dan (iii) merangkumi kategori tarif voltan rendah, voltan sederhana dan voltan tinggi yang terdiri daripada industri dan komersial akan dikenakan surcaj pada kadar 20 sen/kWj.

The implementation of IBR in the Peninsula has entered its third regulatory period (RP3) from 2022 to 2024, while the implementation of ICPT in this review has entered the second year of RP3.

The implementation of the IBR framework and ICPT mechanism is also in line with the provisions outlined in the guidelines for determining base tariff rates in the Peninsula, namely the Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation for Peninsular Malaysia 2022 (RIG 2022).

The Government has allocated a subsidy of RM15.96 billion to cover the ICPT costs for targeted consumers in 2023, with RM10.76 billion allocated to cover ICPT costs for the implementation period of January to June 2023, and a total of RM5.2 billion allocated to cover ICPT costs for the implementation period of July to December 2023, aiming to minimise the impact of ICPT.

ICPT Rate Determination for the Implementation Period of January–June 2023

For the period of 1 July to 31 December 2022, there was a higher increase in fuel and other generation costs amounting to RM16.4 billion, equivalent to an ICPT surcharge at a rate of 27 sen/kWh. This increase in costs is due to the rise in fuel prices in the global market stemming from the global crisis and constraints in the global coal supply.

On 16 December 2022, the Government agreed and decided on the implementation of electricity tariff adjustments as follows:

i. All users under the domestic tariff category (tariff A) will not experience an increase in electricity tariffs because the 2 sen/kWh rebate is maintained as in the previous ICPT period.
ii. All users under the low voltage tariff category (tariff B and tariff D), consisting of Micro, Small, and Medium Enterprises (MSMEs), will not experience any increase in electricity tariffs, as the 3.7 sen/kWh surcharge is maintained.
iii. All users under the specific agricultural tariff categories under low and medium voltage (tariff H, H1 and H2) will not experience any increase in electricity tariffs, as the 3.7 sen/kWh surcharge is maintained.
iv. All users other than categories in sub-paraghraphs (ii) and (iii), including low, medium, and high voltage tariff categories comprising industrial and commercial sectors, will be subject to a surcharge at a rate of 20 sen/kWh.

Kerajaan telah memperuntukkan sebanyak RM8.82 bilion subsidi bagi menampung lebih 9 juta pengguna elektrik yang tidak mengalami kenaikan tarif. Bagi kesemua kategori pengguna komersial dan industri, Kerajaan masih lagi menampung subsidi sebanyak RM1.93 bilion agar peningkatan kadar surcaj ini tidak dilepaskan sepenuhnya secara mendadak. Ini bermakna, jumlah subsidi yang diperuntukkan oleh Kerajaan bagi menampung kesemua pengguna bagi tempoh pelaksanaan ICPT ini adalah sebanyak RM10.76 bilion.

The Government has allocated a subsidy of RM8.82 billion to cover over 9 million electricity users who will not experience tariff increases. For all commercial and industrial user categories, the Government is still providing a subsidy of RM1.93 billion to prevent a sudden full release of this surcharge increase. This means that the total subsidy allocated by the Government to cover all consumers for the ICPT implementation period is RM10.76 billion

Penetapan Kadar ICPT Bagi Tempoh Pelaksanaan Julai–Disember 2023

Bagi tempoh 1 Januari 2023 hingga 30 Jun 2023, kos bahan api dan kos penjanaan lain masih lagi meningkat dan berada di paras yang tinggi berbanding unjuran harga penanda aras yang ditetapkan di dalam tarif asas. Oleh itu, masih lagi terdapat surcaj ICPT yang dilepaskan kepada pengguna, namun ia dilaksanakan secara bersasar.

Kerajaan pada 21 Jun 2023 telah bersetuju dan memutuskan supaya pelarasan tarif elektrik seperti berikut:

i. Pengguna domestik (tarif A) dengan penggunaan elektrik sebanyak 1,500 kWj dan ke bawah akan kekal menerima rebat 2 sen/kWj.
ii. Pengguna domestik (tarif A) dengan penggunaan elektrik melebihi 1,500 kWj akan dikenakan surcaj 10.00 sen/kWj.
iii. Pengguna bukan domestik dalam kategori tarif komersial dan perindustrian voltan rendah (tarif B dan D) dikenakan surcaj pada kadar 3.70 sen/kWj.
iv. Pengguna bukan domestik dalam kategori tarif pertanian spesifik (tarif H, H1 dan H2) kekal surcaj pada kadar 3.70 sen/kWj.
v. Pengguna bukan domestik yang terdiri daripada operator air dan pembetungan akan mengalami penurunan kadar surcaj daripada 20 sen/kWj kepada 3.70 sen/kWj.
vi. Pengguna bukan domestik di kalangan industri dan komersial bervoltan sederhana dan voltan tinggi (selain daripada kategori dalam sub perenggan (iii), (iv) dan (v) di atas) akan mengalami penurunan kadar surcaj daripada 20 sen/kWj kepada 17 sen/kWj.

Dengan mengambil kira keputusan pelaksanaan surcaj ICPT secara bersasar ini, Kerajaan memperuntukkan subsidi sebanyak RM5.2 bilion kepada kategori-kategori pengguna yang terlibat, bagi meminimumkan impak ICPT.

ICPT Rate Determination for the Implementation Period of July–December 2023

For the period of 1 January 2023 to 30 June 2023, fuel and other generation costs continue to rise and remain at a high level compared to the benchmark reference prices set in the base tariff. Therefore, there is still an ICPT surcharge applied to consumers, but it is implemented selectively.

On 21 June 2023, the Government agreed and decided on the electricity tariff adjustments as follows:

i. Domestic users (tariff A) with electricity usage of 1,500 kWh and below will continue to receive a rebate of 2 sen/kWh.
ii. Domestic users (tariff A) with electricity usage exceeding 1,500 kWh will be charged a surcharge of 10.00 sen/kWh.
iii. Non-domestic consumers in the low voltage commercial and industrial tariff category (tariff B and D) will be subject to a surcharge at a rate of 3.70 sen/kWh.
iv. Non-domestic users in the specific agricultural tariff category (tariff H, H1, and H2) will maintain a surcharge at a rate of 3.70 sen/kWh.
v. Non-domestic consumers consisting of water and sewerage operators will experience a reduction in the surcharge rate from 20 sen/kWh to 3.70 sen/kWh.
vi. Non-domestic consumers in the industrial and commercial sectors with medium and high voltage (other than categories in sub-paragraphs (iii), (iv) and (v) above) will experience a reduction in the surcharge rate from 20 sen/kWh to 17 sen/kWh.

Taking into consideration the targeted implementation of the ICPT surcharge, the Government has allocated a subsidy of RM5.2 billion to the involved user categories to minimise the impact of ICPT.

Pelarasan Kawal Selia Tahunan (ARA) 2022

Pelarasan ARA bagi 2022 dilaksanakan berdasarkan prinsip sepertimana yang telah ditetapkan dalam garis panduan penetapan kadar tarif asas di Semenanjung iaitu *Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation for Peninsular Malaysia 2022* (RIG 2022).

Merujuk kepada pelaporan *Regulatory Reporting Statement* (RRS) bagi 2022 TNB, jumlah pelarasan ARA yang direkodkan bagi 2022 adalah sebanyak RM517.14 juta. Daripada jumlah tersebut, pelarasan bagi *Revenue Cap* adalah sebanyak RM383.33 juta dan pelarasan *Price Cap* pula adalah sebanyak RM133.81 juta.

Bagaimanapun, lain-lain pelarasan seperti pendapatan lain, pelarasan *Unpredictable Opex* (UPOX) dan lain-lain masih lagi dalam penelitian dan akan dimuktamadkan dalam tahun seterusnya.

Annual Regulatory Adjustment (ARA) for 2022

The ARA adjustment for 2022 was carried out based on the principles established in the guidelines for determining base tariff rates in Peninsular Malaysia, namely the Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation for Peninsular Malaysia 2022 (RIG 2022).

Referring to the Regulatory Reporting Statement (RRS) for TNB in 2022, the total recorded ARA adjustment for 2022 amounted to RM517.14 million. Of this amount, the adjustment for Revenue Cap was RM383.33 million, and the adjustment for Price Cap was RM133.81 million.

However, other adjustments such as Other Income, Unpredictable Opex (UPOX) adjustments, and others are still under review and will be finalised in the following year.

Pelaksanaan Rangka Kerja IBR bagi SESB di Sabah dan Labuan

Implementation of the IBR Framework for SESB in Sabah and Labuan

Tahun 2022 menyaksikan permulaan tempoh kawal selia pertama (RP1) di bawah rangka kerja IBR bagi Sabah dan Labuan. Antara komponen utama di bawah pelaksanaan IBR ialah mekanisme ICPT yang disemak setiap enam (6) bulan dengan memantau dan mengambil kira perubahan pada kos penjanaan dan pembekalan oleh SESB. Bagaimanapun, situasi kos pembekalan elektrik di Sabah dan Labuan adalah sedikit berbeza berbanding di Semenanjung dan Kulim Hi-Tech Park (KHTP), di mana sebahagian daripada kos pembekalan tersebut ditampung melalui subsidi Kerajaan.

Melalui mekanisme ICPT ini, kadar ICPT diselaraskan terlebih dahulu dengan subsidi yang diperuntukkan kepada SESB sebelum dilepaskan kepada pengguna, tertakluk kepada keputusan oleh Kerajaan. Bagi 2023, Kerajaan memperuntukkan subsidi sebanyak RM266.50 juta bagi menampung kos ICPT kepada pengguna bersasar, di mana sebanyak RM212.2 juta subsidi diperuntukkan bagi menampung kos ICPT bagi tempoh

The year 2022 marked the beginning of the first regulatory period (RP1) under the IBR framework for Sabah and Labuan. Among the main components under the implementation of IBR is the ICPT mechanism, which is reviewed every six (6) months by monitoring and taking into account changes in generation and supply costs by SESB. However, the situation of the electricity supply cost in Sabah and Labuan is slightly different compared to the Peninsula and Kulim Hi-Tech Park (KHTP), where part of the supply costs are absorbed through Government subsidies.

Through this ICPT mechanism, the ICPT is adjusted with the subsidy allocated to SESB before being released to consumers, subject to government decisions. For 2023, the Government has allocated subsidies amounting to RM266.50 million to cover ICPT costs for targeted consumers, with RM212.2 million allocated to cover ICPT costs for the period from January to June and RM54.3 million allocated to cover ICPT costs for the

pelaksanaan Januari hingga Jun dan sejumlah RM54.3 juta subsidi diperuntukkan bagi menampung kos ICPT bagi tempoh pelaksanaan Julai hingga Disember kepada pengguna yang mendapat pengecualian surcaj ICPT.

Penetapan Kadar ICPT Bagi Tempoh Pelaksanaan Januari–Jun 2023

Bagi tempoh 1 Julai hingga 31 Disember 2022, pelarasan kos ICPT sebanyak RM292.05 juta atau bersamaan surcaj pada kadar 10.04 sen/kWj dilaksanakan secara bersasar bagi tempoh pelaksanaan 1 Januari hingga 30 Jun 2023.

Bagi tempoh ini, pengecualian kadar surcaj diberikan kepada semua pengguna domestik dan pengguna bukan domestik di bawah kategori PMKS. Bagi pengguna bukan domestik selain PMKS, kadar surcaj ICPT dilepaskan sepenuhnya pada kadar 10.04 sen/kWj atau bersamaan kos ICPT sebanyak RM79.85 juta.

Penetapan Kadar ICPT Bagi Tempoh Pelaksanaan Julai–Disember 2023

Bagi tempoh 1 Januari hingga 30 Jun 2023, anggaran kos ICPT adalah sebanyak RM63.50 juta atau bersamaan surcaj pada kadar 2.11 sen/kWj.

Pelarasan kos ICPT ini dilaksanakan secara bersasar bagi tempoh pelaksanaan 1 Julai hingga 31 Disember 2023. Pengecualian surcaj ICPT diberikan kepada pengguna domestik tetapi terhad kepada pengguna domestik dengan penggunaan elektrik 1,500 kWj dan ke bawah dan masih terpakai kepada semua pengguna bukan domestik PMKS.

Bagi pengguna domestik dengan penggunaan elektrik 1,500 kWj ke atas dan semua pengguna bukan domestik selain PMKS dikenakan surcaj secara penuh pada kadar 2.11 sen/kWj atau bersamaan kos ICPT berjumlah RM9.2 juta.

ARA 2022

Pelarasan ARA bagi 2022 dilaksanakan berdasarkan prinsip yang ditetapkan di dalam *Guidelines on Electricity Tariff Determination Under Incentive Based Regulation for Sabah and Federal Territory of Labuan* (RIG).

Merujuk kepada pelaporan RRS bagi 2022 SESB, jumlah pelarasan ARA yang direkodkan adalah sebanyak RM12.42

period from July to December for consumers exempted from ICPT surcharges.

Setting of ICPT Rates for the Implementation Period January–June 2023

For the period 1 July to 31 December 2022, the adjustment of ICPT costs amounting to RM292.05 million or equivalent to a surcharge rate of 10.04 sen/kWh was implemented using the targeted approach for the implementation period of 1 January to 30 June 2023.

During this period, surcharge rate exemptions were granted to all domestic users and non-domestic consumers under the PMKS category. For non-domestic consumers other than PMKS, the ICPT surcharge rate was fully applied at a rate of 10.04 sen/kWh or equivalent to ICPT costs of RM79.85 million.

Setting of ICPT Rates for the Implementation Period July–December 2023

For the period of 1 January to 30 June 2023, the estimated ICPT costs amounted to RM63.50 million or equivalent to a surcharge rate of 2.11 sen/kWh.

The adjustment of ICPT costs was implemented using the targeted approach for the implementation period from 1 July to 31 December 2023. Exemptions from the ICPT surcharge were granted to domestic users but limited to domestic users with electricity consumption of 1,500 kWh and below and still applicable to all non-domestic PMKS users.

For domestic users with electricity consumption of over 1,500 kWh and all non-domestic users other than PMKS, a full surcharge was applied at a rate of 2.11 sen/kWh or equivalent to ICPT costs totalling RM9.2 million.

ARA 2022

The ARA adjustment for 2022 was carried out based on the principles set forth in the Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation for Sabah and the Federal Territory of Labuan (RIG).

Referring to the RRS report for 2022 from SESB, the total ARA adjustment recorded amounted to RM12.42 million. Of this

juta. Daripada jumlah tersebut, pelarasan bagi *Revenue Cap* adalah sebanyak RM2.10 juta dan pelarasan *Price Cap* pula adalah sebanyak RM10.32 juta.

amount, the adjustment for Revenue Cap was RM2.10 million, and the adjustment for Price Cap was RM10.32 million.

Pelaksanaan Rangka Kerja IBR bagi NUR Power Sdn. Bhd. (NUR) di KHTP

Implementation of the IBR Framework for NUR Power Sdn. Bhd. (NUR) at KHTP

Mekanisme ICPT merupakan sebahagian daripada rangka kerja IBR bagi penetapan dan pelarasan tarif elektrik di KHTP. Bagi tempoh pelaksanaan ICPT Januari hingga Jun 2023 dan bagi tempoh pelaksanaan Julai hingga Disember 2023, Kerajaan masih mengekalkan keputusan dengan pelarasan tarif elektrik dilepaskan sepenuhnya kepada pengguna bukan domestik dan pengguna bukan domestik kekal dengan tarif sedia ada di KHTP.

The ICPT mechanism is part of the IBR framework for setting and adjusting electricity tariffs at KHTP. For the ICPT implementation period of January to June 2023 and July to December 2023, the Government maintains its decision to fully pass-through the electricity tariff adjustments to non-domestic users, and the non-domestic users continue with the existing tariffs at KHTP.

Penetapan Kadar ICPT Bagi Tempoh Pelaksanaan Januari–Jun 2023

Kerajaan pada 21 Disember 2022 telah bersetuju supaya pelarasan tarif elektrik di bawah mekanisme ICPT bagi NUR di KHTP sebanyak RM76.02 juta atau bersamaan surcaj pada kadar 8.19 sen/kWj bagi tempoh 1 Januari hingga 30 Jun 2023 dilepaskan sepenuhnya kepada pengguna bukan domestik.

Setting of ICPT Rates for the Implementation Period of January–June 2023

On 21 December 2022, the Government agreed that the electricity tariff adjustment under the ICPT mechanism for NUR at KHTP, amounting to RM76.02 million or equivalent to a surcharge rate of 8.19 sen/kWh for the period of 1 January to 30 June 2023, would be fully pass-through to non-domestic users.

Penetapan Kadar ICPT Bagi Tempoh Pelaksanaan Julai–Disember 2023

Kerajaan pada 16 Jun 2023 telah bersetuju dengan perkara-perkara seperti berikut:

i. Pelaksanaan pelarasan tarif elektrik di bawah mekanisme ICPT sebanyak RM50.21 juta atau bersamaan kadar surcaj 5.39 sen/kWj bagi tempoh 1 Julai hingga 31 Disember 2023 dilepaskan sepenuhnya kepada pengguna bukan domestik.
ii. Pelarasan hasil tahunan bagi 2022 yang dianggarkan sebanyak RM0.68 juta disalurkan ke dalam tabung dana Kumpulan Wang Industri Elektrik (KWIE).

Setting of ICPT Rates for the Implementation Period July–December 2023

On 16 June 2023, the Government agreed on the following matters:

i. The implementation of electricity tariff adjustments under the ICPT mechanism amounting to RM50.21 million or equivalent to a surcharge rate of 5.39 sen/kWh for the period 1 July to 31 December 2023, is fully pass-through to non-domestic users.
ii. The ARA for 2022, estimated at RM0.68 million, is channelled into the Energy Industry Fund (EIF).

ARA 2022

Pelarasan ARA bagi 2022 dilaksanakan berdasarkan prinsip yang ditetapkan di dalam *Guidelines on Electricity Tariff Determination Under Incentive Based Regulation For Kulim Hi-Tech Park* (RIG NUR).

Merujuk kepada semakan yang dibuat semasa pelaksanaan ICPT bagi tempoh Januari hingga Jun 2023, jumlah pelarasan ARA yang direkodkan bagi 2022 adalah sebanyak RM0.68 juta. Selaras dengan Keputusan Kerajaan juga, pelarasan ARA ini telah diserahkan untuk dimasukkan ke dalam tabung dana KWIE pada 25 Ogos 2023.

ARA 2022

The ARA adjustment for 2022 was carried out based on the principles set forth in the Guidelines on Electricity Tariff Determination Under Incentive-Based Regulation for Kulim Hi-Tech Park (RIG NUR).

Referring to the review conducted during the implementation of ICPT for the period of January to June 2023, the total ARA adjustment recorded for 2022 amounted to RM0.68 million. In line with the Government's decision, this ARA adjustment was given to the KWIE fund on 25 August 2023.

Semakan Kadar Purata Tarif Asas Kemudahan Gas di Bawah Rangka Kerja IBR bagi Tempoh Kawal Selia Kedua (RP2: 2023–2025) dan Pelarasan Pendapatan Tahunan

Review of Average Base Tariff of Gas Facilities under IBR Framework for Second Regulatory Period (RP2: 2023–2025) and Annual Revenue Adjustment

Semakan semula purata tarif asas kemudahan gas di bawah rangka kerja IBR dilaksanakan setiap tiga (3) tahun yang kini telah memasuki tempoh kawal selia kedua (RP2), bermula 1 Januari 2023 sehingga 31 Disember 2025.

Dalam pada itu, terdapat mekanisme pelarasan semula pendapatan tahunan bagi pihak pemegang lesen kemudahan gas yang bertujuan untuk menyelaras semula jumlah perbezaan pendapatan tahunan yang diunjurkan berbanding pendapatan sebenar yang diperoleh.

Kerajaan pada 21 Disember 2022 bersetuju supaya semakan semula purata tarif asas kemudahan gas di bawah rangka kerja IBR untuk tempoh RP2 dilaksanakan seperti berikut:

The review of the average base tariff of gas facilities under the IBR framework is conducted every three (3) years, which has now entered the second regulatory period (RP2), starting 1 January 2023 until 31 December 2025.

Meanwhile, there is a mechanism for annual revenue adjustment for gas facility licensees aimed at aligning the projected annual revenue variance with the actual revenue earned.

On 21 December 2022, the Government agreed that the review of the average base tariff of gas facilities under the IBR framework for the RP2 period should be carried out as follows:

Purata Tarif Asas bagi Penggunaan Kemudahan Gas untuk Tempoh RP2

Average Base Tariff for the Usage of Gas Facilities for the RP2 Period

Pemegang Lesen *Licensees*	**Jenis Kemudahan Gas** *Types of Gas Facilities*	**Purata Tarif Asas** *Average Base Tariff*
Regas Terminal (Sg. Udang) Sdn. Bhd. (RGTSU)	**Terminal Penggasan Semula** *Regasification Terminal*	**RM3.455/GJ/hari** *RM3.455/GJ/day*
Pengerang LNG (Two) Sdn. Bhd. (RGTP)	**Terminal Penggasan Semula** *Regasification Terminal*	**RM3.165/GJ/hari** *RM3.165/GJ/day*
PETRONAS Gas Berhad (PGB)	**Talian Paip Penghantaran** *Transmission Pipeline*	**RM1.063/GJ/hari** *RM1.063/GJ/day*
Gas Malaysia Distribution Sdn. Bhd. (GMD)	**Talian Paip Pengagihan** *Distribution Pipeline*	**RM1.573/GJ/hari** *RM1.573/GJ/day*

Selain itu, Kerajaan juga bersetuju untuk memperkenalkan kategori tarif tambahan baharu dalam tempoh RP2 bagi projek pembinaan talian paip penghantaran bertekanan tinggi milik PGB iaitu projek SCORE (*Peninsular Gas Utilisation (PGU) II Sector 3 Compressor Relocation*), yang bertujuan untuk pembekalan gas ke Singapura. Ia ditetapkan pada kadar RM1.614/GJ/hari.

Di samping semakan kadar tarif asas tersebut, mekanisme Pelarasan Pendapatan Tahunan untuk 2023 juga dilaksanakan bagi menyelaras perbezaan pendapatan tahunan yang diunjurkan berbanding pendapatan sebenar yang diperoleh pemegang lesen. Komponen pelarasan pendapatan yang terlibat adalah seperti berikut:

i. Revenue Cap
ii. Excluded Services
iii. Tariff Cap
iv. Internal Gas Consumption

Berdasarkan pelarasan pendapatan sebenar tersebut, kadar purata tarif yang dibenarkan untuk tempoh 1 Januari 2023 hingga 31 Disember 2023 ditetapkan, seperti berikut:

In addition, the Government also agreed to introduce a new additional tariff category during the RP2 period for the construction of a high-pressure transmission pipeline owned by PGB, namely the SCORE project (Peninsular Gas Utilisation (PGU) II Sector 3 Compressor Relocation), which aims to supply gas to Singapore. It is set at a rate of RM1.614/GJ/day.

In addition to the review of the base tariff rates, the Annual Revenue Adjustment mechanism for 2023 is also implemented to reconcile the projected annual revenue difference with the actual revenue obtained by the licensees. The components involved in revenue adjustment are as follows:

i. Revenue Cap
ii. Excluded Services
iii. Tariff Cap
iv. Internal Gas Consumption

Based on the actual revenue adjustment, the allowed average tariff rate for the period from 1 January 2023 to 31 December 2023, is determined as follows:

Pelarasan Pendapatan Tahunan dan Purata Tarif yang Dibenarkan, 2023

Annual Revenue Adjustment and Allowed Average Tariff, 2023

Pemegang Lesen *Licensees*	**Purata Tarif Asas RP2** *Average Base Tariff RP2*	**Pelarasan Pendapatan Tahunan** *Annual Revenue Adjustment*	**Purata Tarif Yang Dibenarkan** *Allowed Average Tariff*
	RM/GJ/hari *RM/GJ/day*		
RGTSU	**3.455**	**0.000**	**3.455**
RGTP	**3.165**	**0.000**	**3.165**
PGB	**1.063**	**-0.002**	**1.061**
GMD	**1.573**	**-0.038**	**1.535**

Pelarasan pendapatan serta purata tarif yang dibenarkan untuk tempoh RP2 dilaksanakan dengan mengambil kira keperluan hasil yang diperlukan termasuklah perbelanjaan pelaburan yang cekap bagi memastikan kelangsungan bekalan gas, kemampanan perniagaan pemegang lesen kemudahan gas serta kedudukan semasa industri pasaran gas negara. Selain itu, penetapan tarif ini juga mengambil kira impak kepada pengguna dengan memastikan tarif yang dikenakan adalah berpatutan, telus dan saksama.

Adjustments to revenue and the allowed average tariff for RP2 are carried out taking into account the necessary revenue requirements, including efficient investment expenditure to ensure gas supply continuity, the business sustainability of gas facility licensees, and the current position of the national gas market industry. Furthermore, tariff determination also considers the impact on consumers by ensuring that the tariffs imposed are reasonable, transparent and fair.

Petunjuk Prestasi Utama Pemegang Lesen Kemudahan Gas dalam Pelaksanaan RP2

Key Performance Indicators for Gas Facility Licensees in RP2

Dalam tempoh RP2, ST memperketat sasaran indikator had insentif atau penalti dengan memperkenalkan beberapa petunjuk prestasi baharu dan menguatkuasakan pelaksanaan pemberian insentif atau penalti yang mempunyai implikasi komersial terhadap pendapatan tahunan pemegang lesen kemudahan gas.

Bagi RGTSU, RGTP dan PGB, ST telah mengekal dan memperketat petunjuk prestasi Ketersediaan dan Daya Harap serta memperkenalkan petunjuk prestasi baharu iaitu Kualiti Perkhidmatan Pelanggan. Bagi PGB, petunjuk prestasi baharu yang melibatkan pemantauan pelaksanaan projek pembinaan talian paip diperkenalkan iaitu:

i. *Project Delivery Index* - untuk memantau tempoh pelaksanaan kerja bagi projek berskala besar di samping memberi insentif jika pelaksanaan projek tersebut cekap dan menepati masa atau penalti jika sebaliknya.
ii. *Capex Forecast Accuracy* - memantau perbelanjaan modal bagi projek berskala besar di samping memberi insentif jika perancangan perbelanjaan modal projek tersebut tepat atau penalti jika sebaliknya.

Bagi 2023, kesemua pemegang lesen kemudahan gas yang dinilai menunjukkan tahap prestasi baik, yang mencapai dan mengatasi sasaran yang ditetapkan dalam tempoh RP2.

During RP2, the Commission tightened the threshold indicators for incentives or penalties by introducing several new performance indicators and enforcing the implementation of incentives or penalties that have commercial implications for the Annual Revenue Requirement of gas facility licensees.

For RGTSU, RGTP and PGB, the Commission has maintained and tightened the performance indicators of Availability and Reliability while introducing a new Customer Service Quality indicator. For PGB, new performance indicators involving monitoring of pipeline construction project implementation are introduced:

i. *Project Delivery Index - to monitor the implementation period for large-scale projects while providing incentives for efficient and timely project execution or penalties otherwise.*
ii. *Capex Forecast Accuracy - monitoring capital expenditure for large-scale projects while providing incentives for accurate project capital expenditure planning or penalties otherwise.*

For 2023, all gas facility licensees evaluated have shown good performance levels, achieving and surpassing the targets set for RP2.

Prestasi RGTSU, RGTP dan PGB, 2023

Performance of RGTSU, RGTP and PGB, 2023

Pemegang Lesen *Licensees*	Petunjuk Prestasi *Performance Indicator*	Jenis *Type*	Had Insentif *Incentive Cap*	Sasaran Insentif *Incentive Target*	Sasaran Penalti *Penalty Target*	Had Penalti *Penalty Cap*	Prestasi 2023 *Performance 2023*
RGTSU	*Availability*	*Penalty Only*	-	-	95.83%	84.55%	99.98%
	Reliability	*Penalty Only*	-	-	99.30%	87.73%	99.98%
	Customer Service Quality	*Monitoring Only*	90.00%	80.00%	70.00%	60.00%	-
RGTP	*Availability*	*Penalty Only*	-	-	96.59%	96.47%	99.98%
	Reliability	*Penalty Only*	-	-	99.27%	99.15%	99.98%
	Customer Service Quality	*Monitoring Only*	90.00%	80.00%	70.00%	60.00%	-
PGB	*Availability*	*Penalty Only*	-	-	99.56%	99.45%	99.88%
	Reliability	*Penalty Only*	-	-	99.64%	99.55%	99.93%
	Customer Service Quality	*Monitoring Only*	90.00%	80.00%	70.00%	60.00%	-
	Project Delivery Index	*Monitoring Only*	-1	0	3	4	-
	Capex Forecast Accuracy	*Monitoring Only*	0%	± 2.5%	± 5%	± 10%	-

Prestasi GMD, 2023

Performance of GMD, 2023

Pemegang Lesen *Licensees*	Petunjuk Prestasi/ Jenis *Performance Indicator/Type*	Had Insentif *Incentive Cap*	Sasaran Insentif *Incentive Target*	Sasaran Penalti *Penalty Target*	Had Penalti *Penalty Cap*	Prestasi 2023 *Performance 2023*
GMD	***Supply Reliability (SAIDI): Minutes/Customers/Years***					
	Symmetrical	0.12	1.12	11.17	12.17	0.00
	Network Integrity: No. of Leak/1,000km Pipeline					
	Symmetrical	0.50	1.50	4.00	5.00	1.84
	Customer Service Quality: Average Customer Service Response Time for the Five (5) Longest Incidents (minutes)					
	Symmetrical	39.48	42.16	56.18	58.85	38.40

Penambahbaikan Garis Panduan Penetapan Tarif bagi Penggunaan Kemudahan Gas di Bawah Rangka Kerja IBR dalam Tempoh RP2

Enhancements to the Tariff Determination Guidelines for the Usage of Gas Facilities under the IBR Framework during RP2

Bagi penetapan tarif penggunaan kemudahan gas, terdapat tiga (3) garis panduan disediakan iaitu:

i. *Guidelines on Determination of Regasification Facility Tariff under IBR.*
ii. *Guidelines on Determination of Gas Transportation Facility Tariff under IBR.*
iii. *Guidelines on Determination of Gas Distribution Facility Tariff under IBR.*

Semakan semula dan penambahbaikan ke atas ketiga-tiga garis panduan tersebut telah mula dilaksanakan pada 2023 bagi menambah baik proses dan tatacara dalam penetapan tarif kemudahan gas. Penambahbaikan tersebut turut mengambil kira pengalaman yang telah diperoleh sepanjang pelaksanaan IBR dalam tempoh RP1 dan RP2.

Cadangan pindaan ke atas garis panduan juga akan memperincikan peruntukan sedia ada bagi tujuan kejelasan di samping memperkenalkan beberapa peruntukan baharu. Selain itu, semakan ini juga bertujuan untuk menambah baik tatacara proses kelulusan serta garis masa bagi cadangan semakan kadar tarif asas untuk tempoh kawal selia akan datang.

Bagi memastikan semakan semula garis panduan ini dilaksanakan secara telus dan teratur, beberapa siri perbincangan secara dalaman dan juga bersama pemegang lesen telah diadakan. Cadangan pindaan garis panduan ini dijangka akan dimuktamadkan pada 2024 dan akan menjadi rujukan kepada pihak pemegang lesen dalam mengemukakan cadangan penetapan tarif asas kemudahan gas untuk tempoh RP3 yang akan dilaksanakan bermula 1 Januari 2026 hingga 31 Disember 2028.

For the determination of gas facility usage tariffs, three (3) guidelines are provided:

i. *Guidelines on Determination of Regasification Facility Tariff under IBR.*
ii. *Guidelines on Determination of Gas Transportation Facility Tariff under IBR.*
iii. *Guidelines on Determination of Gas Distribution Facility Tariff under IBR.*

A review and enhancement of these guidelines began in 2023, to improve the processes and procedures for determination gas facility tariffs. The enhancement also takes into account the lessons learned during the implementation of IBR in RP1 and RP2.

Proposed amendments to the guidelines will also detail out existing provisions for clarity while introducing several new provisions. Additionally, this review aims to improve the approval process and timeline for proposed base tariff rate reviews for upcoming regulatory periods.

To ensure transparency and orderly review of these guidelines, a series of internal discussions and consultations with licensees have been conducted. The proposed amendments to the guidelines are expected to be finalised in 2024 and will serve as a reference for licensees in proposing determinations for base tariff of gas facilities for RP3, which will be implemented from 1 January 2026 to 31 December 2028.

Pemantapan Kawal Selia Pemegang Lesen Kemudahan Gas Melalui Penyediaan *Regulatory Reporting Statement (RRS)* Beraudit di Bawah Pelaksanaan Rangka Kerja IBR

Enhancing Oversight for Gas Facility Licensees Through the Provision of Audited Regulatory Reporting Statement (RRS) under the Implementation of IBR Framework

ST telah memperkenalkan peruntukan baharu berkenaan pematuhan penyediaan pelaporan kawal selia iaitu RRS yang beraudit, untuk memantau dan menganalisis transaksi atau prestasi sebenar pemegang lesen dari segi pendapatan yang diperoleh dan kos yang dibelanjakan, berbanding pendapatan dan kos yang diunjurkan dan diluluskan oleh pihak Kerajaan pada setiap tahun dalam tempoh kawal selia.

Di samping itu, ia juga untuk memastikan penilaian pada laporan yang dikemukakan oleh pihak pemegang lesen kepada ST adalah konsisten berdasarkan parameter-parameter asas yang telah ditetapkan dalam tarif kemudahan gas.

ST telah merangka templat bagi penyediaan laporan RRS yang turut merangkumi penyediaan dokumen seperti berikut:

i. *Regulatory Financial Statement:*
Maklumat terperinci mengenai pendapatan dan kos sebenar, berbanding yang diunjurkan dalam penetapan tarif asas kemudahan gas.

ii. *Physical Report:*
Maklumat terperinci berkenaan data teknikal yang digunakan oleh pihak pemegang lesen terutamanya perbelanjaan modal (CAPEX) bagi memastikan kos sebenar dan data teknikal yang disediakan adalah berpadanan.

iii. *Explanatory Document:*
Penerangan terperinci berkenaan perbezaan di antara parameter sebenar seperti pendapatan dan kos CAPEX atau perbelanjaan operasi (OPEX) berbanding unjuran, termasuklah ulasan berkenaan prestasi *operational performance* dan *network performance* pemegang lesen berdasarkan standard yang ditetapkan.

Pelaporan kawal selia RRS beraudit perlu dikemukakan

The Commission has introduced a new provision regarding compliance with the provision of audited RRS to monitor and analyse actual transactions or performance of licensees in terms of revenue earned and costs incurred, compared to the revenue and costs projected and approved by the Government annually during the regulatory period.

Furthermore, it aims to ensure that the assessment of reports submitted by licensees to the Commission is consistent based on basic parameters established in the gas facility tariff.

The Commission has developed a template for preparing RRS reports, which also includes the preparation of documents such as:

i. *Regulatory Financial Statement:*
Detailed information on actual revenue and costs compared to those projected when setting the base tariff of gas facilities.

ii. *Physical Report:*
Detailed information on technical data used by licensees, especially capital expenditure (CAPEX), to ensure that actual costs and technical data provided are matching.

iii. *Explanatory Document:*
Detailed explanation of differences between actual parameters such as revenue and CAPEX or operating expenditure (OPEX) costs compared to projections, including reviews of operational performance and network performance of licensees based on established standards.

secara tahunan oleh pemegang lesen kemudahan gas dengan tatacara yang teratur selaras dengan ketetapan yang diperuntukkan dalam garis panduan di bawah rangka kerja IBR.

The audited RRS oversight report must be submitted annually by gas facility licensees in a regular manner in accordance with the provisions provided in the guidelines under the IBR framework.

Pelaksanaan Mekanisme Perkongsian Pendapatan Pemegang Lesen Kemudahan Gas bagi Projek *Excluded Services* yang Menggunakan Aset yang Dikawal Selia di Bawah Rangka Kerja IBR

Implementation of Revenue Sharing Mechanism for Gas Facility Licensees for Excluded Services Projects Using Regulated Assets under the IBR Framework

Melalui rangka kerja IBR, pemegang lesen kemudahan gas bukan sahaja berperanan memberikan perkhidmatan yang dikawal selia, malah boleh memberikan perkhidmatan-perkhidmatan lain yang tidak dikawal selia atau dikenali sebagai *excluded services*. Penyampaian perkhidmatan *excluded services* kepada pihak yang berkehendak menggunakan kemudahan gas sedia ada membolehkan pemegang lesen kemudahan gas mengoptimumkan penggunaan aset yang dikawal selia dan turut membolehkan pemegang lesen kemudahan gas untuk menjana pendapatan tambahan lain.

Bermula dengan perkhidmatan *LNG reloading for bunkering* di RGTSU, *LNG reloading for bunkering*, *gassing up cooling down* (GUCD) dan *LNG trucking* di RGTP, perkhidmatan ini bakal diperluas dengan beberapa lagi perkhidmatan lain seperti aktiviti *transhipment* dan juga pembekalan tenaga sejuk di RGTP.

Melihat kepada perkembangan aktiviti *excluded services* yang semakin meluas, ST telah mengambil pendekatan dengan menetapkan nisbah perkongsian pendapatan di antara pemegang lesen kemudahan gas dan juga pengguna kemudahan gas secara berperingkat. Melalui perkongsian pendapatan ini, ia akan digunakan sebagai langkah mitigasi dalam mengawal tarif bagi penggunaan kemudahan gas dan dijangka pengguna akan mengalami impak penurunan tarif.

Through the IBR framework, gas facility licensees not only play a role in providing regulated services but can also provide other services that are not regulated or known as excluded services. Delivering excluded services to interested parties using existing gas facilities allows gas facility licensees to optimise the use of regulated assets and also enables them to generate additional revenue.

Starting with LNG reloading services for bunkering at RGTSU, LNG reloading for bunkering, gassing up cooling down (GUCD), and LNG trucking at RGTP, these services will be expanded to include several other services, such as transhipment activities and cold energy supply at RGTP.

Considering the increasing scope of excluded services activities, the Commission has adopted an approach by gradually establishing a revenue-sharing ratio between gas facility licensees and gas facility users. Through this revenue sharing, it will be used as a mitigation measure to control tariffs for gas facility usage, and it is expected that users will experience a decrease in tariffs.

Pengurusan dan Kemampanan KWIE

Management and Sustainability of the EIF

Selaras dengan keputusan Kerajaan agar segala penjimatan ICPT di bawah IBR digunakan secara langsung untuk mengurangkan impak tarif elektrik kepada pengguna, KWIE telah menerima pindahan dana melalui lebihan kutipan surcaj ICPT sebanyak RM391 juta daripada TNB serta pindahan dana sebanyak RM0.68 juta dan RM351 juta bagi ARA daripada NUR Power Distribution Sdn. Bhd. dan TNB.

Pendapatan faedah yang diperoleh oleh KWIE terdiri daripada keuntungan bagi penempatan dana KWIE di dalam Simpanan Tetap (FD), *Short Term Money Market Deposit* (STMMD) dan hibah Akaun Semasa (CA) KWIE di institusi kewangan yang berdaftar di bawah Kementerian Kewangan. Setiap agihan dan penempatan dana di institusi kewangan dibuat berdasarkan Polisi Dana KWIE. Penempatan dana KWIE di institusi kewangan juga bergantung kepada tawaran kadar pulangan yang tinggi dan kompetitif.

In line with the Government's decision for all ICPT savings under the IBR to be directly used to reduce the impact of electricity tariffs on consumers, EIF has received fund transfers through the excess collection of ICPT surcharges amounting to RM391 million from TNB, as well as fund transfers of RM0.68 million and RM351 million for the ARA from NUR Power Distribution Sdn. Bhd. and TNB.

The interest income derived by EIF consists of returns from placing EIF funds in Fixed Deposits (FD), Short Term Money Market Deposits (STMMD), and grants for the EIF Current Account (CA) in financial institutions registered under the Ministry of Finance. Each distribution and placement of funds in financial institutions is made based on the EIF Fund Policy. The placement of EIF funds in financial institutions also depends on offers of high and competitive return rates.

Pelaburan Dana KWIE
Investment of EIF Funds

- Polisi Dana KWIE telah dikemas kini selaras dengan penggunaan sistem digital KWIE dan keperluan semasa yang diluluskan oleh Mesyuarat ST Bilangan 7 Tahun 2023 pada 31 Julai 2023.

- Selaras dengan peruntukan Seksyen 44D (1) Akta Bekalan Elektrik 1990, penempatan dan pengagihan pelaburan dana KWIE dilaksanakan di institusi kewangan berdasarkan senarai yang diluluskan oleh Kementerian Kewangan.

- Pelaburan dana KWIE di dalam FD dan STMMD untuk 2023 bagi tempoh penempatan di antara dua (2) minggu hingga 12 bulan dengan kadar pulangan di antara 2.80% hingga 4.26% telah menjana pulangan pelaburan sebanyak RM21.62 juta.

- Sepanjang 2023, Bank Negara Malaysia (BNM) telah menaikkan kadar Kadar Dasar Semalaman (OPR) sebanyak 0.25%. Kadar OPR pada awal 2023 ialah sebanyak 2.75% dan sehingga hujung tahun 2023 meningkat kepada 3.00%.

The EIF Fund Policy has been updated in line with the utilisation of the EIF digital system and current requirements approved by the Commission's Meeting Number 7 of 2023 on 31 July 2023.

In accordance with Section 44D (1) of the Electricity Supply Act 1990, the placement and distribution of EIF fund investments are carried out in financial institutions based on a list approved by the Ministry of Finance.

EIF fund investments in FD and STMMD for 2023, for placements ranging from two (2) weeks to 12 months, with returns ranging from 2.80% to 4.26%, have generated investment returns of RM21.62 million.

Throughout 2023, Bank Negara Malaysia (BNM) has increased the Overnight Policy Rate (OPR) by 0.25%. The OPR rate at the beginning of 2023 was 2.75% and increased to 3.00% by the end of 2023.

Sorotan Utama

Main Highlights

ASEAN Forum on Coal (AFOC) 2023

Antara aktiviti AFOC yang disertai ST pada 2023 ialah penganjuran *ASEAN Coal Awards 2023*, yang bertujuan supaya negara-negara anggota dapat mempelajari amalan-amalan baik dari negara lain dalam menggunakan arang batu secara mampan dan cekap. Acara ini telah menarik penyertaan terbesar daripada kalangan negara anggota ASEAN sejak ia mula dianjurkan.

Selain itu, AFOC juga menganjurkan beberapa siri bengkel, seminar dan webinar berkaitan arang batu bagi menyebarkan maklumat berkaitan kepentingan penggunaan teknologi arang batu bersih (CCT) dalam mengurangkan pelepasan gas rumah hijau (GHG), meningkatkan kecekapan pengoperasian stesen jana kuasa arang batu dan seterusnya menjadikan ASEAN rantau ekonomi rendah karbon.

ASEAN Forum on Coal (AFOC) 2023

Among the AFOC activities joined by the Commission in 2023 was the ASEAN Coal Awards 2023, aimed at enabling member countries to learn best practices from each other in the sustainable and efficient use of coal. This event attracted the largest participation from ASEAN member countries since its inception.

Furthermore, AFOC also organised a series of workshops, seminars and webinars related to coal, to disseminate information on the importance of clean coal technology (CCT) in reducing greenhouse gas (GHG) emissions, improving the efficiency of coal-fired power plants, and ultimately making ASEAN a low-carbon economy.

Penyertaan ST dalam Aktiviti AFOC, 2023

ST Participation in AFOC Activities, 2023

- ***ASEAN Coal Awards Final Board of Judges (BOJ) Meeting***
- ***ASEAN Coal Database Information System (ACDIS) Workshop***
- ***Symposium on Coal and Sustainable Development Goal (SDG)***
- ***21st AFOC Council Meeting***
- **Bengkel *1st Southeast Asia Carbon Capture and Storage (CCS) Accelerator (SEACA)***
- ***Meeting on Strategic report on CCT and CCT Readiness in ASEAN towards carbon neutrality***
- ***Joint Declaration of the 41st ASEAN Ministers on Energy Meeting (AMEM) on Sustainable Energy Security through Interconnectivity***
- ***Working Group Meeting for the Study on Applicability of Comprehensive and Optimal Carbon-Neutral Solutions in ASEAN in Energy Transition***
- ***Senior Official Meeting on Energy + 3 Energy Policy Governing Group (SOME +3 EPGG) for ASEAN***
- ***Meeting on Enabling Carbon Capture, Utilisation and Storage (CCUS) Deployment in ASEAN***



21st AFOC Council Meeting 2023 di Kuala Lumpur pada 11 Mei 2023
21st AFOC Council Meeting 2023 at Kuala Lumpur on 11 May 2023

Pelaksanaan Program Tarif Elektrik Hijau (GET) 2023

Program GET dilancarkan pada November 2021, dan bermula 1 Januari 2022, pengguna yang melanggan GET dibekalkan dengan bekalan elektrik daripada sumber TBB yang dihasilkan oleh loji-loji jana kuasa solar dan hidro. Selain itu, mereka juga menerima sijil *Malaysia Renewable Energy Certificates* (mREC) yang berdaftar dengan badan pensijilan antarabangsa, mengesahkan bahawa bekalan elektrik mereka adalah daripada sumber TBB.

Selain memberi pilihan kepada pengguna domestik untuk beralih kepada TBB bagi mengurangkan jejak karbon mereka, dijangkakan juga bahawa GET akan membantu entiti perniagaan, pelabur dan organisasi yang beroperasi di Malaysia memenuhi komitmen mereka terhadap Alam Sekitar, Sosial dan Tadbir Urus (ESG) melalui penggunaan elektrik daripada sumber TBB.

Implementation of the Green Electricity Tariff (GET) Programme 2023

The GET Programme was launched in November 2021, and starting from 1 January 2022, consumers who subscribe to GET started to be supplied with electricity from RE sources generated by solar and hydro power plants. Additionally, they also received Malaysia Renewable Energy Certificates (mREC) registered with international certification bodies, certifying that their electricity supply is from RE sources.

In addition to providing domestic consumers with the option to switch to RE to reduce their carbon footprint, it is also expected that GET will help businesses, investors and organisations operating in Malaysia meet their Environmental, Social and Governance (ESG) commitments through the use of electricity from RE sources.

Langganan GET, 2023

GET Subscription, 2023

Fasa 1 (1 Januari 2023 hingga 31 Julai 2023) *Phase 1 (1 January 2023 to 31 July 2023)*	Fasa 2 (1 Ogos 2023 hingga 31 Disember 2023) *Phase 2 (1 August 2023 to 31 December 2023)*
• **Tawaran kuota sebanyak 6,600 GWj** *Offered quota of 6,600 GWh* • **Komitmen langganan adalah secara tahunan berdasarkan *first-come, first-served basis*** *Subscription commitment is annually based on a first-come, first-served basis* • **Caj langganan dikekalkan pada kadar 3.7 sen/kWj dan pengecualian caj ICPT yang telah diberikan pada 2022 diteruskan** *Subscription fee maintained at a rate of 3.7 sen/kWh, and the exemption of ICPT charges given in 2022 is continued* • **Kuota GET dihabiskan dalam masa 15 minit pada 16 Februari 2023, dengan kategori pelanggan seperti berikut:** *GET quota was fully subscribed within 15 minutes on 16 February 2023, with the following customer categories:* **i. Industri 64%** *Industry 64%* **ii. Komersial 34%** *Commercial 34%* **iii. Domestik 2%** *Domestic 2%*	• **Tawaran kuota sebanyak 1,899 GWj atau 379 GWj/bulan pada 11 Ogos 2023** *Offered quota of 1,899 GWh or 379 GWh/month on 11 August 2023* • **Kriteria langganan GET secara *first-come, first-served basis*** *GET subscription criteria on a first-come, first-served basis* • **Caj langganan dinaikkan pada kadar baharu 21.8 sen/kWj dan pengecualian caj ICPT diteruskan sehingga 31 Disember 2023** *Subscription fee increased to a new rate of 21.8 sen/kWh, and ICPT charge exemption continued until 31 December 2023* • **Komponen yang terlibat dalam menentukan tarif baharu GET:** *Components involved in determining the new GET tariff:* **i. Kos pengadaan tenaga hijau** *Green energy procurement costs* **ii. Pertimbangan mengenai rangka kerja tarif elektrik** *Consideration of electricity tariff framework* **iii. Bekalan dan permintaan tenaga hijau** *Supply and demand for green energy* **iv. Penilaian prestasi dengan negara jiran** *Benchmarking with neighbouring countries* **v. Penimbangan kos ketidaksempurnaan TBB** *Balancing of RE intermittency cost* **vi. Kos Sijil TBB (REC)** *RE Certificate (REC) costs* • **Had kuota 30% untuk langganan GET sebelum ini dimansuhkan** *The 30% quota limit for previous GET subscriptions has been abolished* • **ST telah mengadakan sesi bertemu pemegang taruh pada 8 Ogos 2023 bagi menjelaskan dengan lebih lanjut mengenai Program GET** *The Commission held a stakeholder engagement on 8 August 2023 to further explain the GET Programme* • **Hari pembukaan GET diadakan pada 11 Ogos 2023 yang telah dihadiri oleh Pengerusi ST** *GET opening day held on 11 August 2023, attended by the Commission's Chairman*

Program GET juga berupaya menarik pelaburan baru yang berkualiti dan berorientasikan tenaga hijau, terutamanya daripada syarikat-syarikat RE100 yang memberi komitmen untuk beralih ke penggunaan 100% tenaga elektrik daripada sumber TBB dalam tempoh 2030 hingga 2050.

Dana yang dikumpul melalui program GET akan digunakan untuk menyokong pelaksanaan agenda dan inisiatif TBB di negara ini. Program ini juga adalah sebahagian daripada inisiatif negara untuk mencapai pelepasan GHG sifar bersih menjelang 2050, dengan tujuan membantu negara mengurangkan jejak karbon dan memenuhi sasaran perjanjian antarabangsa.

The GET Programme is also capable to attract new high-quality investments oriented towards green energy, especially from RE100 companies that have committed to transitioning to 100% electricity from RE sources between 2030 and 2050.

Funds collected through the GET programme will be used to support the implementation of RE agendas and initiatives in the country. This programme is also part of the nation's initiative to achieve net-zero GHG emissions by 2050, with the goal of helping the country reduce its carbon footprint and meet international agreement targets.



Sesi Libat Urus Program GET pada 8 Ogos 2023
Engagement Session on GET Programme on 8 August 2023



Hari Pembukaan Program GET pada 11 Ogos 2023
GET Programme Opening Day on 11 August 2023

Bengkel Pembekalan Gas Sektor Elektrik di Semenanjung

Pada 14 Februari 2023, Bengkel Pembekalan Gas Sektor Elektrik di Semenanjung telah diadakan dengan tujuan untuk membincangkan isu perbezaan permintaan dan komitmen bekalan gas bagi sektor elektrik berdasarkan penetapan GFA serta hala tujunya untuk menangani risiko keterjaminan bekalan elektrik.

Bengkel ini juga membincangkan perkara-perkara seperti opsyen pembekalan yang kompetitif dengan mengambil kira kesan kepada tarif pengguna dan impak ekonomi negara secara keseluruhannya di samping isu-isu seperti ketersediaan infrastruktur gas dan prinsip pembekalan pasca GFA.

Bengkel ini telah dipengerusikan oleh Timbalan Ketua Setiausaha NRECC dengan kehadiran wakil-wakil pegawai dari Kementerian Ekonomi, NRECC, ST, MyPower Corporation, Malaysia Petroleum Management (MPM), TNB, PEGT, SB dan GSO.

NRECC telah melantik ST dan MyPower sebagai pengerusi bersama bagi membincangkan secara terperinci cadangan-cadangan pembekalan gas. Beberapa sesi mesyuarat kumpulan kerja telah dijalankan untuk mencari penyelesaian berdasarkan prinsip-prinsip berikut:

i. Keterjaminan tenaga bagi keperluan negara menjadi keutamaan.
ii. Menumpukan usaha kepada jangka masa terdekat dan sederhana dalam tempoh GFA.
iii. Komitmen bekalan dan harga gas yang lebih saksama dengan mengambil kira implikasi kos secara menyeluruh.

Gas Supply Workshop for the Electricity Sector in the Peninsula

On 14 February 2023, the Gas Supply Workshop for the Electricity Sector in the Peninsula was held with the aim of discussing issues related to the difference in demand and supply commitments for the electricity sector based on the GFA determination and its direction in addressing the risks of electricity supply security.

The workshop also discussed matters such as competitive supply options, taking into account the effects on consumer tariffs and the overall economic impact of the country, as well as issues such as gas infrastructure availability and post-GFA supply principles.

The workshop was chaired by the Deputy Secretary-General of NRECC, with representatives from the Ministry of Economy, NRECC, the Commission, MyPower Corporation, Malaysia Petroleum Management (MPM), TNB, PEGT, SB, and GSO in attendance.

NRECC appointed the Commission and MyPower as co-chairs to discuss gas supply proposals in detail. Several working group meeting sessions were conducted to find solutions based on the following principles:

i. Ensuring energy security for the country's needs is a priority.
ii. Focusing efforts on the immediate and medium-term within the GFA period.
iii. Committing to a more accurate gas supply and pricing, taking into account the implications of costs comprehensively.



Bengkel Pembekalan Gas Sektor Elektrik di Semenanjung Malaysia di Selangor pada 14 Februari 2023
Supply Workshop for the Electricity Sector in the Peninsula in Selangor on 14 February 2023

Peralihan Punca Kuasa Kawal Selia Tarif Elektrik di Sabah

Penyerahan kawal selia pembekalan elektrik di Sabah dijadualkan berkuat kuasa pada 3 Januari 2024. Dalam memastikan penyerahan tersebut berjalan lancar, NRECC telah memohon ST untuk membuat simulasi unjuran kos pembekalan dan tarif elektrik di Sabah dan Labuan untuk tempoh tujuh (7) tahun bermula 2024 hingga 2030.

Perkara ini akan dijadikan sebagai indikatif kepada pihak Kerajaan Persekutuan dalam pengiraan keperluan subsidi sebelum penyerahan sebenar SESB yang dijangka akan dilaksanakan setelah pelan transformasi SESB selama tujuh (7) tahun selesai.

Bagi memastikan kos pembekalan dan tarif elektrik di Sabah dan Labuan bagi tempoh jangka panjang diunjurkan dengan lebih tepat, beberapa siri perbincangan telah dilaksanakan bersama-sama pihak SESB dan pihak Energy Commission of Sabah (ECoS).

Antara perkara yang perlu dimuktamadkan dan dipersetujui menerusi perbincangan termasuklah andaian-andaian yang perlu diguna pakai dalam unjuran seperti:

i. Pelan pembangunan penjanaan yang diguna pakai seharusnya menggunakan pelan penjanaan jangka panjang terkini yang telah diluluskan oleh NRECC.
ii. Kadar pulangan yang relevan bagi SESB untuk setiap tempoh kawal selia.

Transition of Electricity Tariff Regulatory Powers in Sabah

The transfer of regulatory control over electricity supply in Sabah is scheduled to take effect on 3 January 2024. To ensure a smooth transition, NRECC has requested the Commission to simulate the projection of supply costs and electricity tariffs in Sabah and Labuan for a period of seven (7) years from 2024 to 2030.

This simulation will serve as an indicative guide to the Federal Government in calculating subsidy requirements before the actual handover of SESB, expected to take place after the completion of SESB's seven-year transformation plan.

For more accurate projections of supply costs and electricity tariffs in Sabah and Labuan for the long term, several discussions have been held with SESB and the Energy Commission of Sabah (ECoS).

Among matters to be finalised and agreed upon through discussions include assumptions to be used in the projection, such as:

i. The generation development plan to be used should utilise the latest long-term generation plan approved by NRECC.
ii. Relevant return rates for SESB for each regulatory period.

iii. Andaian harga bahan api bagi tempoh jangka panjang.
iv. Jumlah unjuran perbelanjaan modal dan operasi mengambil kira kadar kenaikan perbelanjaan tahunan SESB.
v. Kadar kenaikan tarif yang wajar bagi setiap tempoh kawal selia bagi memastikan kelestarian industri pembekalan elektrik di Sabah dan Labuan berdaya maju.

Unjuran ini juga menggunakan kelulusan IBR RP1 sebagai asas bagi keperluan hasil jangka panjang SESB dan purata tarif asas semasa yang digazet adalah pada 34.52 sen/kWj. Selain itu, kos penjanaan yang diunjurkan adalah berdasarkan kepada pelan pembangunan penjanaan yang dibentangkan menerusi Mesyuarat JPPPET Bilangan 1 Tahun 2022.

Melalui unjuran ini, beberapa senario kenaikan tarif diambil kira bagi memastikan unjuran yang diguna pakai mampu untuk mencapai hasrat Kerajaan Persekutuan dalam pelan transformasi SESB menjelang 2030.

Berdasarkan andaian-andaian yang dipersetujui menerusi perbincangan tersebut, simulasi unjuran jangka panjang telah dilaksanakan dan dibentangkan di dalam Mesyuarat Jawatankuasa Teknikal Penyerahan Sabah di antara NRECC, Kementerian Kewangan, Kementerian Ekonomi, ST dan ECoS pada 21 Julai 2023. Seterusnya, ST telah mengemukakan ulasan mengenainya pada Ogos 2023 dan November 2023 kepada NRECC untuk dijadikan input dalam Memorandum Jemaah Menteri berkaitan penyerahan kuasa kawal selia pembekalan elektrik kepada Kerajaan Negeri Sabah.

iii. Assumptions on fuel prices for the long term.
iv. The projected amount of capital and operating expenditure taking into account SESB's annual expenditure increase rate.
v. Reasonable tariff increase rates for each regulatory period to ensure sustainability and advancement of the electricity supply industry in Sabah and Labuan.

These projections also use the approval of IBR RP1 as a basis for SESB's long-term revenue requirements, and the current gazetted average base tariff rate is 34.52 sen/kWh. Additionally, the projected generation costs are based on the generation development plan presented at the JPPPET Meeting Number 1 of 2022.

Through this projection, several tariff increase scenarios are considered to ensure that the utilised projection is capable of achieving the Federal Government's aspirations in SESB's transformation plan by 2030.

Based on the assumptions agreed upon through these discussions, long-term projection simulations were conducted and presented at the Sabah Handover Technical Committee Meeting between NRECC, the Ministry of Finance, the Ministry of Economy, the Commission and ECoS on 21 July 2023. Subsequently, the Commission provided reviews on it in August 2023 and November 2023 to NRECC as the input for the Cabinet Memorandum regarding the transfer of regulatory control over electricity supply to the Sabah State Government.



5

Mempromosikan Kemampanan Tenaga

Promoting Energy Sustainability

147 **Perkembangan Tenaga Boleh Baharu (TBB)**
Development of Renewable Energy (RE)

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Net Energy Metering (NEM) 3.0 Programme

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Main Highlights



Perkembangan Tenaga Boleh Baharu (TBB)

Development of Renewable Energy (RE)

Program Bidaan Loji Solar Berskala Besar (LSS) dilaksanakan berdasarkan kelulusan Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tarif (JPPPET), tertakluk di bawah Akta Bekalan Elektrik 1990, peraturan-peraturan dan kod-kod yang berkaitan.

Pelaksanaan program adalah difokuskan untuk memastikan daya harap pembekalan elektrik yang terjamin pada harga yang kompetitif. Ia dilaksanakan secara berperingkat bagi mengawal kemasukan sumber penjanaan elektrik serta implikasi kepada tarif.

The Large-Scale Solar Plant Bid (LSS) Programme was implemented based on approval by the Planning and Implementation Committee for Electric Supply and Tariff (JPPPET), subject to the Electricity Supply Act 1990, and relevant regulations and codes.

The implementation was focused on ensuring secure and reliable electricity supply at competitive prices. This programme was implemented in stages to control the entry of electricity generation sources and its implications on tariffs.

Pembidaan LSS yang Telah Dilaksanakan, 2017-2023
Completed LSS Bidding, 2017-2023

	FAST TRACK		**KITARAN LSS 1** *LSS CYCLE 1*		**KITARAN LSS 2** *LSS CYCLE 2*		**KITARAN LSS 3** *LSS CYCLE 3*		**KITARAN LSS 4** *LSS CYCLE 4*	
	250 MW		**354 MW**		**416 MW**		**391 MW**		**292.6 MW**	
Jumlah Projek *Total Projects*	4	2	14	3	26	7	5	-	30	-
Jumlah Kapasiti Dianugerahkan *Total Capacity Awarded*	200 MW	50 MW	354 MW	17 MW	466 MW	45 MW	491 MW	-	823 MW	-
Jumlah Kapasiti dalam Operasi *Total Capacity in Operation*	200 MW	50 MW	354 MW	0 MW	406 MW	10 MW	391 MW	-	292 MW	-

Jumlah LSS Dianugerahkan *Total Awarded LSS*	**Jumlah LSS yang Beroperasi** *Total LSS in Operation*	
2,334 MW	**1,643 MW**	Semenanjung *The Peninsula*
112 MW	**60 MW**	Sabah

Seiring dengan penyerahan kuasa kawal selia bekalan elektrik di Sabah mulai 2024, LSS di Sabah akan mula dikawal selia oleh Suruhanjaya Tenaga Sabah (ECoS). Dua (2) projek LSS di Labuan, Sabah Energy Corporation Sdn. Bhd. (LSS1) (5 MW) dan Solar PV Power Sdn. Bhd. (LSS2) (10 MW) bagaimanapun masih di bawah pengawalseliaan ST.

With the transfer of power regulatory authority in Sabah starting in 2024, LSS in Sabah will be regulated by the Energy Commission of Sabah (ECoS). However, two (2) LSS projects in Labuan, Sabah Energy Corporation Sdn. Bhd. (LSS1) (5 MW) and Solar PV Power Sdn. Bhd. (LSS2) (10 MW), are still under the supervision of the Commission.

Program Pemeteran Tenaga Bersih (NEM) 3.0

Net Energy Metering (NEM) 3.0 Programme

YB Nik Nazmi Nik Ahmad, Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim semasa melancarkan *Malaysia Energy Transition Outlook* pada 9 Mac 2023 telah mengumumkan mengenai langkah Kerajaan untuk merancakkan pertumbuhan TBB melalui penambahan kuota bagi program NEM 3.0 seperti berikut:

a. 200 MW untuk Program NEM NOVA bagi menggalakkan lagi pemasangan solar di bumbung premis bangunan oleh pengguna kategori komersial dan industri; dan
b. 50 MW untuk Program NEM Rakyat bagi membolehkan lebih ramai pengguna domestik memasang sistem solar di premis kediaman.

Lanjutan pengumuman tersebut, pindaan terhadap dua (2) garis panduan yang dikeluarkan oleh ST telah dilaksanakan iaitu:

a. *Guidelines for Solar Photovoltaic Installation Under the Programme of NEM Rakyat and NEM GoMEn in Peninsular Malaysia;* dan
b. *Guidelines for Solar Photovoltaic Installation Under Net Offset Virtual Aggregations (NOVA) Programme for Peninsular Malaysia.*

Pindaan yang terlibat adalah berkenaan had kapasiti bagi pepasangan solar PV yang dibenarkan.

Rasional ke atas penambahan kuota dan had kapasiti ini adalah bagi meringankan impak kenaikan tarif elektrik berikutan pelarasan tarif di bawah pelaksanaan mekanisme Pelepasan Kos Tidak Berimbang (ICPT) untuk tempoh 1 Julai 2023 hingga 31 Disember 2023. Inisiatif ini juga merupakan salah satu sokongan ke atas polisi Kerajaan untuk mencapai 70% kapasiti campuran TBB menjelang 2050.

YB Nik Nazmi Nik Ahmad, Minister of Natural Resources, Environment, and Climate Change, while launching the Malaysia Energy Transition Outlook on 9 March 2023, announced the Government's steps to accelerate the growth of RE through the addition of quotas for the NEM 3.0 programme as follows:

a. *200 MW for the NEM NOVA Programme to further encourage the installation of solar panels on the rooftops of building premises by users in the commercial and industrial categories; and*
b. *50 MW for the NEM Rakyat Programme to enable more domestic users to install solar systems on residential premises.*

Following the announcement, amendments to two (2) guidelines issued by the Commission have been implemented, namely:

a. *Guidelines for Solar Photovoltaic Installation Under the Programme of NEM Rakyat and NEM GoMEn in Peninsular Malaysia; and*
b. *Guidelines for Solar Photovoltaic Installation Under Net Offset Virtual Aggregations (NOVA) Programme for Peninsular Malaysia.*

The amendments pertain to the capacity limits for solar PV installations allowed.

The rationale behind the increase in quotas and capacity limits is to mitigate the impact of electricity tariff hikes following the adjustment of tariffs under the implementation of the Imbalance Cost Pass-Through (ICPT) mechanism for the period from 1 July 2023 to 31 December 2023. This initiative also serves as one of the supports for the Government's policy to achieve a 70% RE mix capacity by 2050.

Jumlah Kemasukan Kapasiti NEM 3.0, 2023
Total Capacity Entries for NEM 3.0, 2023

Program *Programme*	Jumlah Kuota (MW) *Total Quota (MW)*	Jumlah Dipohon (MW) *Total Applied (MW)*	Jumlah Beroperasi (MW) *Total Operational (MW)*	Baki Kuota (MW) *Remaining Quota (MW)*
NEM 2.0	500	467.39	450.55	32.61
NEM NOVA	800	799.17	518.87	0.83
NEM GoMEn	100	49.93		50.07
NEM Rakyat	150	150.00		0.00

Kecekapan Tenaga

Energy Efficiency

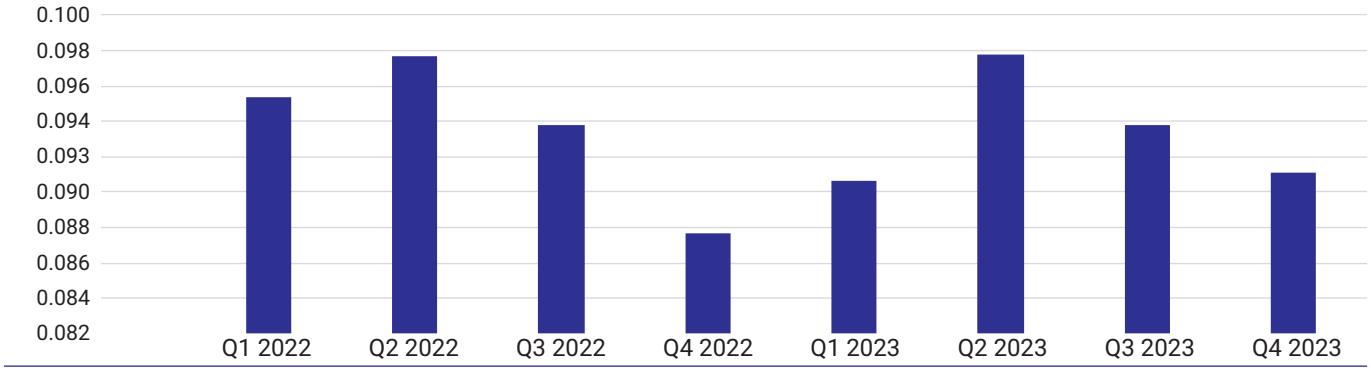
Intensiti Tenaga Elektrik

Prestasi kecekapan penggunaan tenaga elektrik bagi sesebuah negara sering ditentukan oleh nilai intensiti tenaga elektrik. Intensiti tenaga elektrik merujuk kepada jumlah tenaga elektrik yang diperlukan bagi menghasilkan satu unit Keluaran Dalam Negara Kasar (KDNK), di mana semakin rendah nilai intensiti, maka semakin cekap penggunaan tenaga elektrik tersebut.

Electricity Intensity

The efficiency performance of electricity consumption in a country is often determined by the value of electricity intensity. Electricity intensity refers to the amount of electricity required to produce one unit of Gross Domestic Product (GDP), in which lower energy intensity leads to more efficient electricity consumption.

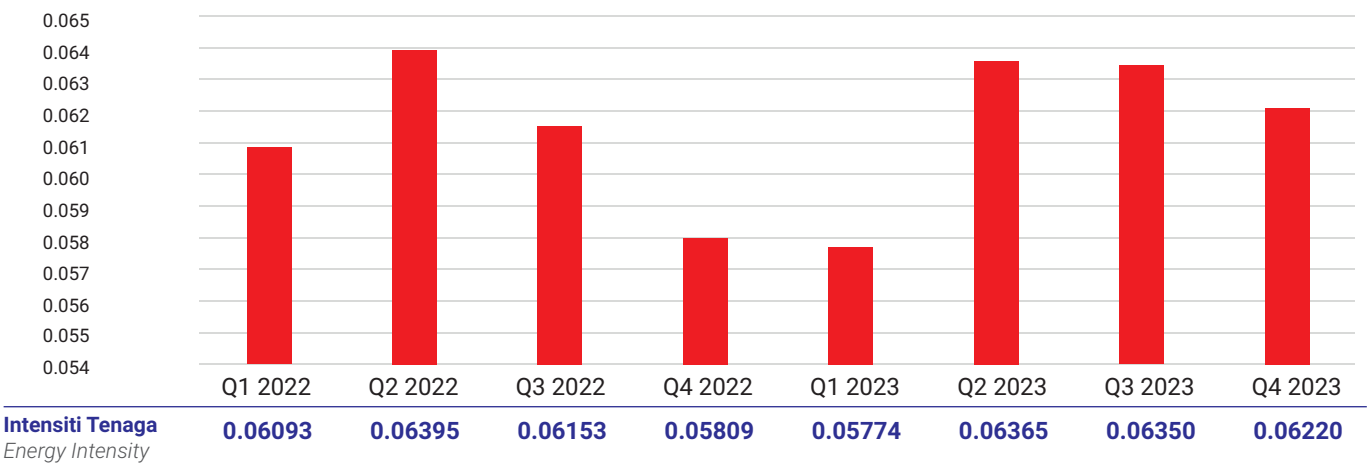
Intensiti Tenaga Elektrik di Semenanjung, 2022–2023
Electricity Intensity in the Peninsula, 2022-2023



	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023
Intensiti Tenaga *Energy Intensity*	**0.09536**	**0.09768**	**0.09378**	**0.08765**	**0.09066**	**0.09776**	**0.09378**	**0.09109**

Intensiti Tenaga Elektrik di Sabah, 2022–2023

Electricity Intensity in Sabah, 2022-2023



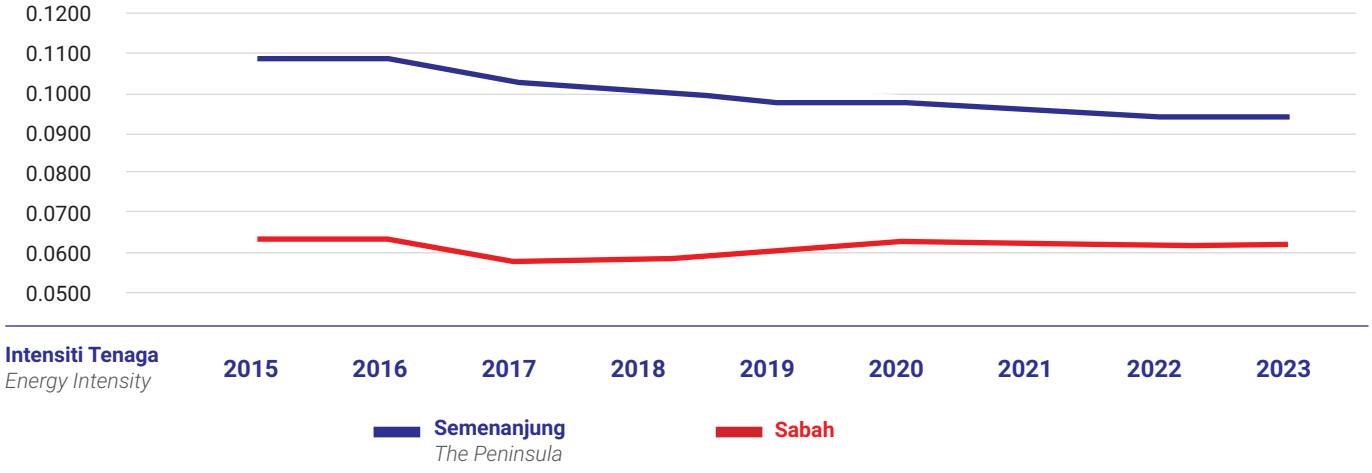
Intensiti Tenaga *Energy Intensity*	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023
	0.06093	0.06395	0.06153	0.05809	0.05774	0.06365	0.06350	0.06220

Intensiti tenaga elektrik di Semenanjung berkurang sebanyak 0.32% kepada 0.0933 GWj/RM juta pada 2023, berbanding 0.0936 GWj/RM juta pada 2022. Di Sabah pula, intensiti tenaga elektrik meningkat 1.05% kepada 0.0618 GWj/RM juta pada 2023 berbanding 0.0611 GWj/RM juta pada tahun sebelumnya.

The electricity intensity in the Peninsula decreased by 0.32% to 0.0933 GWh/RM million in 2023, compared to 0.0936 GWh/RM million in 2022. In Sabah, however, the electricity intensity increased by 1.05% to 0.0618 GWh/RM million in 2023 compared to 0.0611 GWh/RM million in the previous year.

Perbandingan Intensiti Tenaga Elektrik di Semenanjung dan Sabah, 2015–2023

Comparison of Electricity Intensity in the Peninsula and Sabah, 2015-2023



Intensiti Tenaga *Energy Intensity*

Secara keseluruhannya, intensiti tenaga elektrik di Semenanjung dan Sabah menunjukkan trend penurunan sejak 2015 hingga 2023. Hal ini sebahagiannya dipengaruhi oleh usaha ST seperti Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP) yang diwujudkan untuk mendorong penerapan kecekapan tenaga dalam sektor awam dan swasta.

Overall, the electricity intensity in the Peninsula and Sabah showed a decreasing trend from 2015 to 2023. This is partly influenced by the Commission's efforts, such as the National Energy Efficiency Action Plan (NEEAP), which was established to promote energy efficiency adoption in both public and private sectors.

Penguatkuasaan Peraturan Pengurusan Tenaga Elektrik Dengan Cekap 2008 (PPTEC 2008)

Bagi menggalakkan tadbir urus yang baik dalam amalan pengurusan tenaga di kalangan pengguna kuasa besar, Kerajaan telah menguatkuasakan Peraturan Pengurusan Tenaga Elektrik Dengan Cekap 2008 (PPTEC 2008) pada 15 Disember 2008, di mana pepasangan yang menggunakan tenaga elektrik menyamai atau melebihi 3,000,000 kWj dalam tempoh enam (6) bulan berturut-turut hendaklah melantik Pengurus Tenaga Elektrik (PTE) Berdaftar dan menghantar laporan berkala setiap enam (6) bulan kepada ST.

Aktiviti penguatkuasaan juga dilaksanakan terhadap pepasangan yang masih belum melantik PTE bagi meningkatkan kadar pematuhan terhadap peraturan ini.

Pada 2023, penguatkuasaan PPTEC 2008 telah dilaksanakan terhadap 24 pepasangan. Hasil daripada aktiviti pemantauan dan penguatkuasaan yang dilakukan oleh ST, pematuhan kepada PPTEC 2008 telah meningkat kepada 80% iaitu pematuhan di 1,566 pepasangan berbanding 1,520 pepasangan pada kadar pematuhan sebanyak 78% pada tahun sebelumnya.

Enforcement of Efficient Management of Electrical Energy Regulations 2008 (EMEER 2008)

To encourage good governance in energy management practices among large power consumers, the Government enforced the Efficient Management of Electrical Energy Regulations 2008 (EMEER 2008) on 15 December 2008, whereby installations consuming electrical energy equivalent to or exceeding 3,000,000 kWh over a period of six (6) consecutive months are required to appoint a Registered Electrical Energy Manager (REEM) and submit periodic reports every six (6) months to the Commission.

Enforcement activities are also carried out against installations that have yet to appoint REEM to improve compliance rates with this regulation.

In 2023, enforcement of EMEER 2008 was conducted on 24 installations. As a result of monitoring and enforcement activities conducted by the Commission, compliance with EMEER 2008 increased to 80%, with 1,566 installations in compliance, compared to 1,520 installations, representing a compliance rate of 78% in the previous year.

Pelaksanaan Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP)

Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP) bertujuan mempromosikan langkah kecekapan tenaga dalam menyumbang kepada pembangunan ekonomi yang mampan, kebajikan sosial dan meningkatkan daya saing negara melalui penggunaan tenaga secara produktif dan lestari.

Pada 2023, pelaksanaan NEEAP merangkumi pemantauan berterusan terhadap langkah-langkah kecekapan tenaga di bawah program-program berikut:

Implementation of the National Energy Efficiency Action Plan (NEEAP)

The National Energy Efficiency Action Plan (NEEAP) aims to promote energy efficiency measures that contribute to sustainable economic development, social welfare, and enhance the country's competitiveness through productive and sustainable use of energy.

In 2023, the implementation of NEEAP includes continuous monitoring of energy efficiency measures under the following programmes:



Program Geran Audit Tenaga Bersyarat 2.0 (EACG 2.0) RMKe-12
Energy Audit Conditional Grant 2.0 (EACG 2.0) 12MP

Pelaporan secara berkala pepasangan yang tertakluk di bawah PPTEC 2008
Periodic reporting by regulated installations under EMEER 2008

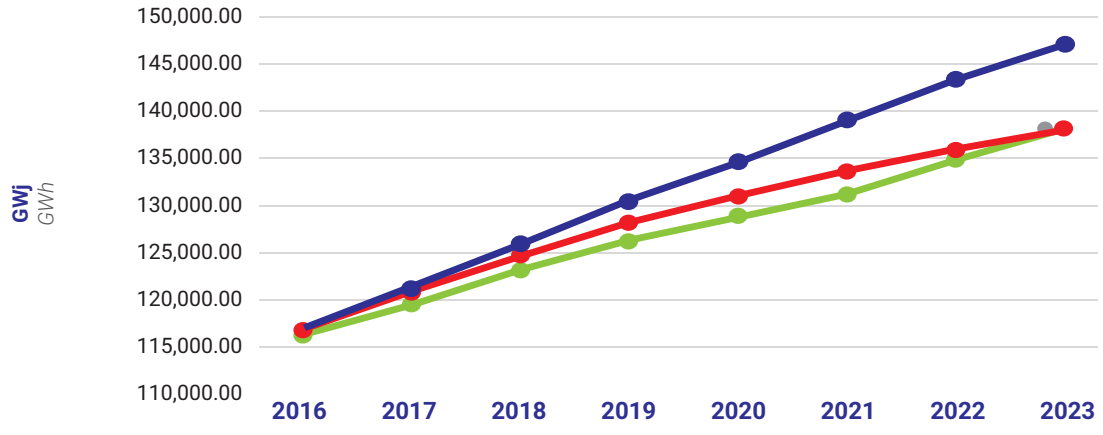
Program promosi pembelian kelengkapan elektrik bertaraf lima (5) bintang
Promotional programme for the purchase of five (5) star-rated electrical appliances

Sehingga Disember 2023, pelaksanaan NEEAP telah berjaya mencapai penjimatan elektrik sebanyak 5.87%, sedikit penurunan berbanding jangkaan sasaran iaitu 6.1%. Ini disebabkan pelaporan berkala bagi separuh tahun kedua 2023 untuk pepasangan di bawah PPTEC 2008 hanya akan diperoleh sepenuhnya pada awal Februari 2024. Pencapaian 5.87% ini telah menyumbang kepada pengurangan pelepasan gas rumah hijau (GHG) sebanyak 5,045.82 $ktCO_2$. Ini seterusnya akan menyumbang kepada sasaran kerajaan untuk mengurangkan kadar pelepasan intensiti GHG sebanyak 45% pada tahun 2030, berbanding dengan aras pelepasan intensiti GHG pada 2005.

As of December 2023, the implementation of NEEAP has successfully achieved electricity savings of 5.87%, slightly lower than the expected target of 6.1%. This is because the periodic reporting for the second half of 2023 for installations under EMEER 2008 will only be fully obtained in early February 2024. This achievement of 5.87% has contributed to a reduction in greenhouse gas (GHG) emissions by 5,045.82 $ktCO_2$. This will further contribute to the government's target to reduce the GHG emission intensity by 45% by 2030, compared to the GHG emission intensity in 2005.

Pencapaian Keseluruhan NEEAP, 2016–2023

Overall Achievement of NEEAP, 2016–2023



	2016	2017	2018	2019	2020	2021	2022	2023
BAU (GWj) *BAU (GWh)*	117,110.00	121,431.00	125,885.00	130,474.00	134,830.00	139,206.00	143,326.00	146,991.50
NEEAP (GWj) *NEEAP (GWh)*	117,022.82	121,045.12	124,784.35	128,188.22	131,046.79	133,730.77	136,164.99	138,082.36
Impak NEEAP (GWj) *Current NEEAP Impact (GWh)*	116,275	119,781	123,237	126,433	128,977	131,364	134,864	138,366
Peratus Penjimatan NEEAP daripada BAU *Percentage of NEEAP Saving from BAU*	0.1%	0.3%	0.9%	1.8%	2.8%	3.9%	5.0%	6.1%
Penjimatan Tahunan Sebenar yang Dipantau (GWj) *Actual Annual Saving Monitored (GWh)*	835	1,650	2,648	4,041	5,853	7,842	8,462	8,625
Peratus Penjimatan Tahunan Sebenar daripada BAU *Percentage of Annual Saving from BAU*	0.71%	1.36%	2.10%	3.10%	4.34%	5.63%	5.90%	5.87%

Penjimatan tenaga elektrik tahunan yang dicapai sehingga Disember 2023 ialah sebanyak 8,625 GWj, bersamaan dengan RM2.166 billion.

The annual electricity savings achieved until December 2023 amounted to 8,625 GWh, equivalent to RM2.166 billion.

Geran Audit Tenaga Bersyarat (EACG) 2.0

Program Geran Audit Tenaga Bersyarat (EACG) 2.0 adalah untuk:

Energy Audit Conditional Grant (EACG) 2.0

The Energy Audit Conditional Grant (EACG) 2.0 Programme is designed to:

Menyediakan kemudahan pembiayaan kewangan melalui geran bersyarat selama lima (5) tahun (2021-2025) sebagai pemangkin bagi pelaksanaan audit tenaga, bertujuan untuk mengenal pasti jumlah penggunaan tenaga elektrik serta menetapkan *baseline*.
Provide financing facilities through conditional grants for five (5) years (2021 to 2025) as a catalyst for the implementation of energy audits, aimed at identifying the amount of electricity consumption and setting a baseline.

Menyediakan platform bagi pelaksanaan langkah penjimatan tenaga berdasarkan kepada laporan audit tenaga tersebut.
Provide a platform for implementing energy-saving measures based on the energy audit report.

Memastikan penjimatan penggunaan tenaga elektrik terhasil melalui pematuhan kepada perjanjian perlaksanaan langkah-langkah penjimatan tenaga berdasarkan kepada laporan audit tenaga.
Ensure that electricity consumption savings are achieved through compliance with the implementation agreement of energy-saving measures based on the energy audit report.

Pembangunan kapasiti pengaudit tenaga bagi memenuhi permintaan aktiviti audit tenaga di sektor industri dan komersial.
Develop energy auditors' capacity to meet the demand for energy audits in industrial and commercial sectors.

Memupuk kesedaran mengenai kepentingan audit tenaga di kalangan pemilik pepasangan industri di Malaysia.
Foster awareness on the importance of energy audits among industrial installations owners in Malaysia.

Sebanyak 420 pepasangan industri dan 230 pepasangan komersial dijangka menerima geran ini dari 2021 hingga 2025 untuk melaksanakan audit tenaga di pepasangan masing-masing. Hasil laporan audit tenaga tersebut, pepasangan ini akan menjalankan projek-projek penjimatan tenaga yang disyorkan. Program EACG 2.0 ini dijangka dapat menyumbangkan pengurangan penggunaan tenaga elektrik sebanyak 1,402 GWj atau bersamaan dengan RM552,963,549 bagi tempoh RMKe-12.

A total of 420 industrial installations and 230 commercial installations are expected to receive these grants from 2021 to 2025 to conduct energy audits in their respective installations. Based on the energy audit reports, these installations will implement recommended energy-saving projects. The EACG 2.0 Programme is expected to contribute a reduction in electricity consumption of 1,402 GWh, equivalent to RM552,963,549 for the 12MP period.

Penerima EACG, 2021–2023
EACG Receivers, 2021–2023



Tahun *Year*	Pepasangan Industri *Industrial Installations*	Pepasangan Komersial *Commercial Installations*
2021	34	22
2022	32	31
2023	101	87

Pemantauan Langkah-langkah Kecekapan Tenaga di Bawah PPTEC 2008

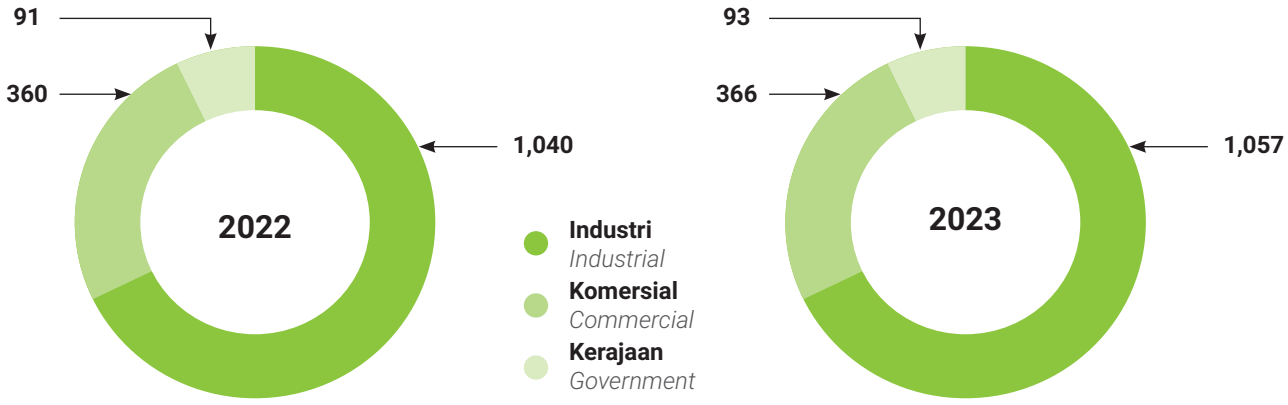
Sepanjang 2023, sebanyak 1,516 pepasangan telah menghantar laporan berkala, peningkatan 1.68% berbanding 1,491 pepasangan pada tahun sebelumnya.

Monitoring Energy Efficiency Measures under EMEER 2008

Throughout 2023, a total of 1,516 installations have submitted periodic reports, an increase of 1.68% compared to 1,491 installations in the previous year.

Pepasangan yang Menghantar Laporan Berkala, 2022–2023

Installations Submitting Periodic Reports, 2022–2023

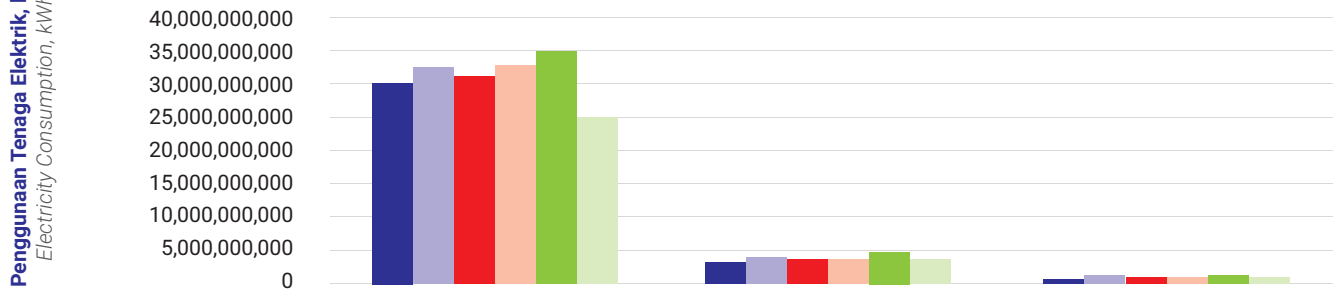


Jumlah Laporan yang Dihantar *Total Reports Submitted* **1,491**

Jumlah Laporan yang Dihantar *Total Reports Submitted* **1,516**

Trend Penggunaan Tenaga Elektrik, 2018–2023

Electricity Consumption Trend, 2018–2023



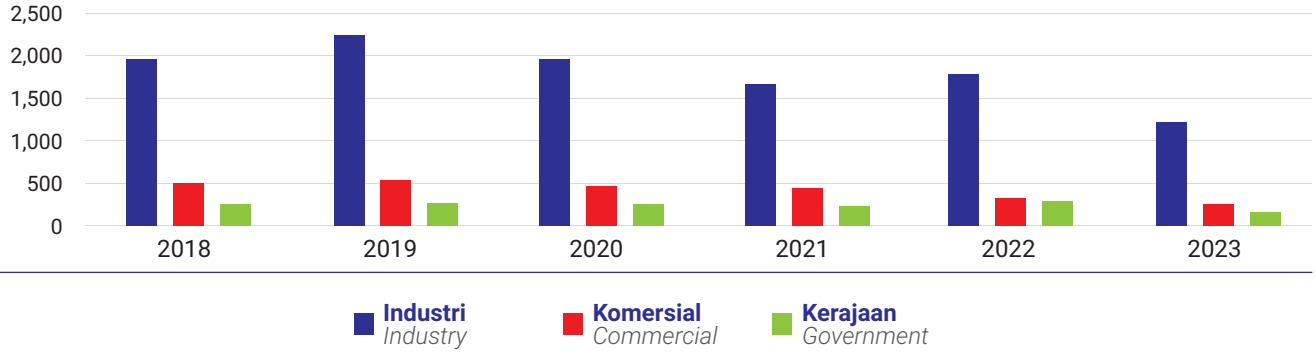
	Industri *Industry*	Komersial *Commercial*	Kerajaan *Government*
2018	30,481,560,280	3,386,528,888	1,317,262,963
2019	32,464,850,421	4,367,691,299	1,404,616,550
2020	31,264,518,066	4,051,695,902	1,327,879,656
2021	32,966,838,404	4,000,120,743	1,319,317,410
2022	34,689,674,196	5,021,870,607	1,450,741,585
2023	25,030,306,215	3,889,657,296	1,078,265,789

Penggunaan tenaga elektrik, pelaksanaan langkah kecekapan tenaga serta analisa penjimatan bagi 2023 menunjukkan penurunan disebabkan faktor laporan berkala bagi separuh tahun kedua 2023 hanya akan dilaporkan bermula Januari 2024.

The electricity consumption, implementation of energy efficiency measures, and savings analysis for 2023 shown a decrease due to the factor that periodic reports for the second half of 2023 will only be reported starting January 2024.

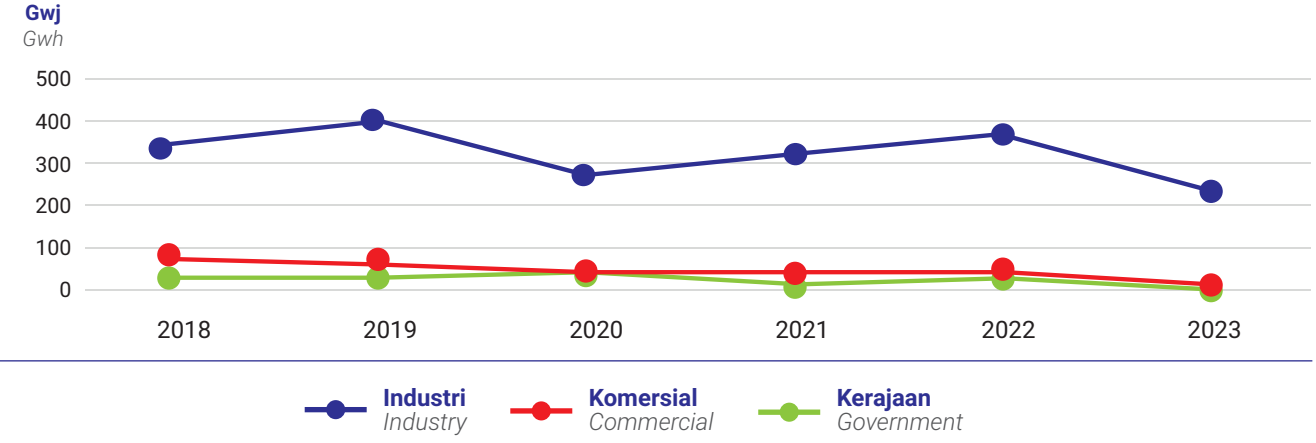
Bilangan Langkah-langkah Kecekapan Tenaga yang Dilaksanakan, 2018–2023

Number of Energy Efficiency Measures Implemented, 2018–2023



Penjimatan Tenaga di Bawah PPTEC 2008, 2018–2023

Electricity Savings under EMEER 2008, 2018–2023

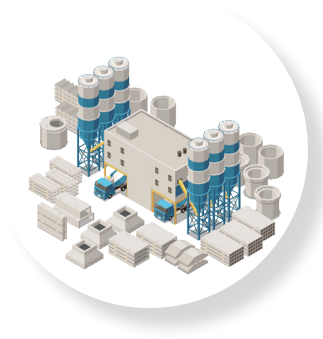


Penjimatan Tenaga Tahunan, 2023

Annual Energy Savings, 2023

Industri
Industry

1,961.52 GWj/*GWh*



Komersial
Commercial

287.13 GWj/*GWh*



Kerajaan
Government

146.18 GWj/*GWh*



Program *Sustainability Achieved via Energy Efficiency* (SAVE) *4.0*

Program SAVE 4.0 ialah program pemberian e-rebat kepada pengguna untuk pembelian kelengkapan elektrik cekap tenaga berlabel empat (4) atau lima (5) bintang yang telah diberi penarafan oleh ST bagi tempoh 2023-2024. Program ini merupakan kesinambungan daripada Program SAVE 1.0, SAVE 2.0 dan SAVE 3.0 sebelum ini, yang menerima sambutan yang menggalakkan dan pencapaian yang baik.

Pelaksanaan Program SAVE 4.0 bertujuan menggalakkan lebih ramai pengguna elektrik mempraktikkan amalan cekap tenaga sekali gus menyumbang kepada penjimatan penggunaan tenaga dan bil elektrik. Berdasarkan pelaksanaan program SAVE sebelum ini, jumlah penjimatan tenaga yang diperoleh adalah sebanyak 324 GWj, bersamaan dengan penjimatan kos tenaga sebanyak RM129.4 juta dan 281,000 tan CO_2 setahun.

Program SAVE 4.0 dibiayai oleh Akaun Amanah Industri Bekalan Elektrik (AAIBE) dengan jumlah peruntukan sebanyak RM50 juta yang ditawarkan melalui 250,000 unit e-rebat bernilai RM200.00 kepada isi rumah yang berkelayakan. Rebat adalah terhad kepada satu (1) akaun bil elektrik sahaja bagi setiap pembelian penyaman udara dan peti sejuk yang bertaraf empat (4) atau lima (5) bintang, bagi pembelian bermula pada 10 Disember 2023 secara *first come, first served*.

Pengguna warganegara Malaysia yang merupakan pemilik akaun elektrik tarif domestik yang berdaftar dengan syarikat-syarikat utiliti (Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn. Bhd. (SESB), Sarawak Energy Berhad (SEB) dan NUR Power) layak untuk memohon, melalui dua (2) kaedah iaitu:

Sustainability Achieved Via Energy Efficiency (SAVE) 4.0 Programme

The SAVE 4.0 programme is an e-rebate programme for consumers to purchase energy-efficient electrical appliances with four (4) or five (5) star rating, issued by the Commission for 2023–2024. This programme is a continuation of the previous SAVE 1.0, SAVE 2.0, and SAVE 3.0 programmes, which received encouraging responses and achieved good results.

The implementation of the SAVE 4.0 programme aims to encourage more electricity consumers to adopt energy-efficient practices, thereby contributing to energy and electricity bill savings. Based on the implementation of previous SAVE programmes, the total energy savings obtained amounted to 324 GWh, equivalent to energy cost savings of RM129.4 million and a reduction of 281,000 tonnes of CO_2 annually.

The SAVE 4.0 programme is funded by the Electricity Supply Industry Trust Account (AAIBE) with a total allocation of RM50 million, offered through 250,000 e-rebate units worth RM200.00 each to eligible households. Rebates are limited to one (1) electricity bill account only for each purchase of air conditioners and refrigerators rated four (4) or five (5) stars for purchases starting on 10 December 2023, on a first come, first served basis.

Malaysian citizens who are owners of domestic tariff electricity accounts registered with utility companies (Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn. Bhd. (SESB), Sarawak Energy Berhad (SEB), and NUR Power) are eligible to apply through two (2) methods:



Membawa bil elektrik terkini dan membuat pembelian secara fizikal di kedai-kedai elektrik/pasar raya berdaftar di bawah Program SAVE 4.0

Presenting the latest electricity bill and making purchases physically at registered electrical stores/supermarkets under the SAVE 4.0 Programme; or



Memohon e-rebat dan membuat pembelian secara atas talian menerusi platform e-dagang yang diiktiraf (Shopee, Lazada, Youbeli, PG Mall dan TikTok).

Applying for e-rebates and making purchases online through recognised e-commerce platforms (Shopee, Lazada, Youbeli, PG Mall, and TikTok).

Objektif utama program SAVE 4.0 dilaksanakan adalah:
The primary objectives of SAVE 4.0 Programme are:

Menyokong aspirasi Kerajaan dalam menggalakkan inisiatif penjimatan dan kecekapan tenaga, rendah karbon dan tenaga lestari yang secara tidak langsung membantu Malaysia mencapai sasaran pengurangan karbon

Supporting the Government's aspirations in promoting energy saving and efficiency, low carbon and sustainable energy initiatives, which indirectly helping Malaysia achieve its carbon reduction targets

Meningkatkan jumlah penggunaan kelengkapan elektrik cekap tenaga bertaraf lima (5) dan empat (4) bintang

Increasing the usage of energy-efficient electrical appliances rated five (5) and four (4) stars

Memberikan faedah penjimatan kos pembelian kelengkapan dan bil elektrik bulanan kepada orang awam

Providing cost savings benefits for the purchase of equipment and monthly electricity bills to the public

Memberikan kesedaran dan amalan kepentingan pengurusan dan kecekapan tenaga di mana pelabelan kelengkapan elektrik telah diperkenalkan oleh kerajaan melalui ST sejak 2013

Creating awareness and promoting the importance of energy management and efficiency practices where electrical equipment labelling has been introduced by the government through the Commission since 2013

Program ini dikelolakan oleh Sustainable Energy Development Authority (SEDA) sebagai agensi pelaksana dengan kerjasama ST. Maklumat lanjut mengenai program ini boleh dilayari di http://saveenergy.gov.my.

This programme is managed by the Sustainable Energy Development Authority (SEDA) as the implementing agency in collaboration with the Commission. Further information about this programme can be accessed at http://saveenergy.gov.my.







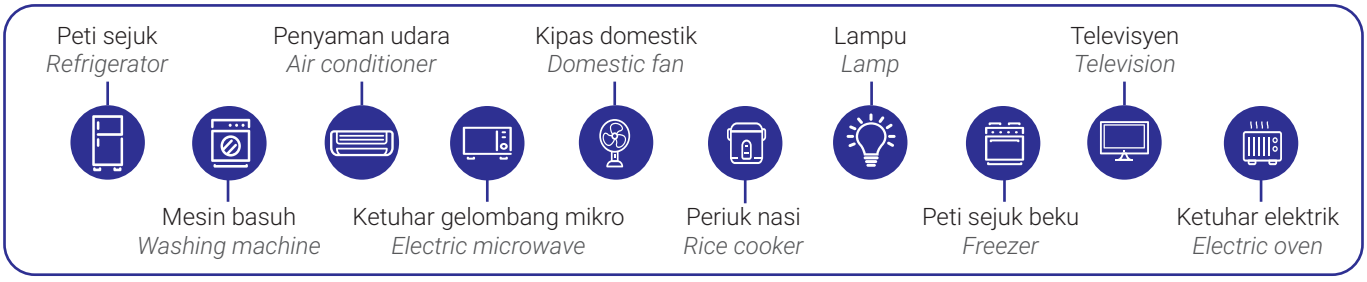


Peningkatan MEPS

Pada 2023, satu (1) lagi kategori kelengkapan elektrik iaitu Ketuhar Elektrik dibangunkan di bawah kelengkapan cekap tenaga iaitu *Minimum Energy Performance Standard* (MEPS), menjadikan jumlah keseluruhan kepada 10 kategori iaitu:

Expansion of MEPS

In 2023, another category of electrical appliances, Electric Oven, was developed under the energy-efficient appliances category known as Minimum Energy Performance Standard (MEPS), bringing the total number to 10 categories, namely:

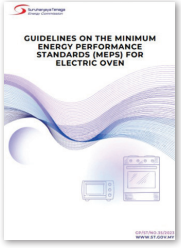


Garis Panduan *"Guidelines on Minimum Energy Performance Standard (MEPS) for Electric Oven"* telah dikeluarkan pada 1 November 2023 dan akan berkuat kuasa sepenuhnya pada 1 November 2024. Penarafan cekap tenaga ini adalah bagi ketuhar elektrik yang mempunyai fungsi *conventional mode; convectional mode; conventional and convectional mode*; dan *conventional, convectional and steam mode*. Pengilang dan pengimport diberi tempoh selama satu (1) tahun untuk bersedia dalam mematuhi pelaksanaan baru ini.

Inisiatif ini adalah untuk memastikan kelengkapan elektrik yang berada di pasaran adalah cekap tenaga, dan selaras dengan hasrat ST dalam melindungi kepentingan pengguna. Inisiatif ini juga akan mengelakkan negara ini menjadi tempat lambakan kelengkapan yang tidak cekap tenaga di samping untuk mencapai misi NEEAP.

The "Guidelines on Minimum Energy Performance Standard (MEPS) for Electric Oven" was issued on 1 November 2023, and will be fully enforced on 1 November 2024. This energy-efficient rating applies to electric ovens with conventional mode; convectional mode; conventional and convectional mode; and conventional, convectional, and steam mode functionalities. Manufacturers and importers are given a one (1) year period to prepare for compliance with this new implementation.

This initiative aims to ensure that electrical appliances in the market are energy-efficient, aligning with the Commission's intention to protect consumer's interests. It will also prevent the country from becoming a dumping ground for inefficient appliances while striving to achieve the NEEAP mission.



Penggunaan Tenaga & Penjimatan Tenaga Tahunan (Januari - September), 2023

Annual Energy Consumption & Energy Saving (January - September), 2023

Kelengkapan *Appliances*	**Jumlah Jualan (Unit)** *Total Sales (Unit)*	**Penggunaan Tenaga - Mengilang & Mengimport (GWj)** *Energy Consumption (Manufacture & Import) (GWh)*	**Penjimatan Tenaga - Mengilang & Mengimport (GWj)** *Energy Saving (Manufacture & Import) (GWh)*
Penyaman udara *Air conditioner*	592,437.00	921.11	630.72
Televisyen *Television*	427,356.00	76.20	126.68
Peti sejuk *Refrigerator*	210,231.00	85.89	49.50
Kipas *Fan*	1,639,321.00	302.95	302.10
Lampu *Lamp*	7,472,088.00	247.33	0.07
Mesin basuh *Washing machine*	234,482.00	18.15	27.18
Jumlah *Total*	**10,575,915.00**	**1,651.63**	**1,136.25**

Sorotan Utama

Main Highlights

Pelaksanaan Program Bidaan LSS@MEnTARI

Kementerian Tenaga dan Sumber Asli (KeTSA) melalui ST telah melaksanakan program bidaan kompetitif LSS@MEnTARI pada Mei 2020 dengan sasaran kapasiti 1,000 MW untuk kemasukan 2022 dan 2023.

Pelaksanaan program ini merupakan antara inisiatif Kerajaan untuk memulihkan dan merangsang ekonomi berikutan penularan wabak COVID-19 yang menjejaskan ekonomi negara. Ia juga bertujuan untuk merancakkan pembangunan industri pembekalan elektrik negara khususnya industri TBB.

Jumlah kapasiti projek-projek LSS@MEnTARI di bawah Pakej 1 (10 MW–29.99 MW) adalah sebanyak 323 MW, manakala Pakej 2 (30 MW–50 MW)adalah sebanyak 500 MW. Walaupun keadaan ekonomi kurang stabil pada 2021–2022, sejumlah 292 MW kapasiti projek LSS@MEnTARI berjaya mencapai operasi komersial pada 2023.

Implementation of the LSS@MEnTARI Bidding Programme

The Ministry of Energy and Natural Resources (KeTSA), through the Commission, has implemented a competitive bidding programme for the LSS@MEnTARI project in May 2020, with a target entry capacity of 1,000 MW for 2022 and 2023.

The implementation of this programme is among the Government's initiatives to revive and stimulate the economy following the outbreak of the COVID-19 pandemic, which has affected the country's economy. It also aims to promote the development of the country's electricity supply industry, especially the RE industry.

The total capacity of LSS@MEnTARI projects under Package 1 (10 MW–29.99 MW) is 323 MW, while Package 2 (30 MW–50 MW) amounts to 500 MW. Despite the less stable economic conditions in 2021–2022, a total of 292 MW of LSS@MEnTARI project capacity successfully achieved commercial operation in 2023.

Projek LSS@MEnTARI di Bawah Pakej P1, 2023
LSS@MEnTARI Projects under Package P1, 2023

Bil. *No.*	Pengeluar/Pembangun Tenaga Solar *Solar Power Producer/Developer*	Kapasiti *Capacity*
1.	**Greenviro Solutions Sdn. Bhd.**	**10 MW**
2.	**Solar Citra Sdn. Bhd.**	**10.95 MW**
3.	**Energy ES Sdn. Bhd.**	**20.76 MW**
4.	**Suriamas Energy (Maritime) Sdn. Bhd.**	**25 MW**
5.	**Selarong Solar Sdn. Bhd.**	**15 MW**
6.	**Bikam Energy Sdn. Bhd.**	**13 MW**
7.	**Sinarmas Energy (Api-Api) Sdn. Bhd.**	**13 MW**
8.	**Serimas Energy (Manjung) Sdn. Bhd.**	**12 MW**
9.	**Grooveland Sdn. Bhd.**	**17.36 MW**
10.	**Teja 1 Sdn. Bhd.**	**15 MW**

Projek LSS@MEnTARI di Bawah Pakej P1, 2023 (sambungan)

LSS@MEnTARI Projects under Package P1, 2023 (continued)

Bil. *No.*	Pengeluar/Pembangun Tenaga Solar *Solar Power Producer/Developer*	Kapasiti *Capacity*
11.	Kellie Energy Sdn. Bhd.W	15 MW
12.	TC Sunergy Sdn. Bhd.	20 MW
13.	Teja 2 Sdn. Bhd.	10 MW
14.	Green RE Sdn. Bhd.	15 MW
15.	Fusion Trend Sdn. Bhd.	13 MW
16.	LSS TPG Sdn. Bhd.	26 MW
17.	Bakateam Services Sdn. Bhd.	15 MW
18.	Sun Estates Sdn. Bhd.	10 MW
19.	Nextenaga Sdn. Bhd.	29.99 MW
20.	Tesdec Services Sdn. Bhd.	17 MW

Projek LSS@MenTARI di Bawah Pakej P2, 2023

LSS@MEnTARI Projects under Package P2, 2023

Bil. *No.*	Pengeluar/Pembangun Tenaga Solar *Solar Power Producer/Developer*	Kapasiti *Capacity*
1.	JAKS Solar Nibong Tebal Sdn. Bhd.	50 MW
2.	TNB Bukit Selambau Solar 2 Sdn. Bhd	50 MW
3.	Asiabina Solar Sdn. Bhd.	50 MW
4.	Ragawang Power Sdn. Bhd.	50 MW
5.	Ranhill Solar I Sdn. Bhd.	50 MW
6.	Classic Solar Farm Sdn. Bhd.	50 MW
7.	GBS Suria Sdn. Bhd.	50 MW
8.	PKNP Reneuco Suria Sdn. Bhd.	50 MW
9.	Uzma Kuala Muda Sdn. Bhd.	50 MW
10.	Sharp Ventures Solar Sdn. Bhd.	50 MW

Program Tenaga Hijau Korporat (CGPP)

Pada 9 Mac 2023, YB Nik Nazmi Nik Ahmad, Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim mengumumkan penambahbaikan bagi CGPP, dengan pengemaskinian seperti berikut:

Corporate Green Power Programme (CGPP)

On 9 March 2023, YB Nik Nazmi Nik Ahmad, the Minister of Natural Resources, Environment, and Climate Change, announced enhancements to the CGPP, with updates as follows:

Kuota tambahan sebanyak 200 MW bagi membolehkan lebih banyak syarikat melanggan bekalan elektrik hijau bagi memenuhi komitmen Alam Sekitar, Sosial dan Tadbir Urus (ESG).
Additional quota of 200 MW to enable more companies to subscribe to green electricity supply to fulfil Environment, Social and Governance (ESG) commitments.

Permohonan dan penyertaan program ini dibuka sepanjang tahun sehingga 31 Disember 2023 atau sehingga kuota habis dilanggan serta membenarkan penyertaan pemaju TBB daripada sumber bukan solar.
Application and participation in this programme are open throughout the year until 31 December 2023, or until the quota is fully subscribed, allowing participation of RE developers from non-solar sources.



Dengan pengumuman ini, permohonan bagi keseluruhan kuota sebanyak 800 MW bagi program CGPP ini dibuka pada 3 April 2023 hingga 31 Disember 2023.

With this announcement, applications for the total quota of 800 MW for the CGPP programme began on 3 April 2023 until 31 December 2023.

Bagi memberi penerangan lanjut mengenai konsep CGPP, syarat kelayakan serta kaedah penyertaan, dua (2) sesi webinar diadakan pada 12 Januari dan 18 April 2023 bersama wakil-wakil agensi Kerajaan, pengguna korporat, pemaju projek serta syarikat-syarikat lain yang berminat untuk menyertai CGPP.

To provide further explanation on the concept of CGPP, eligibility criteria, and participation methods, two (2) webinar sessions were held on 12 January and 18 April 2023, with representatives from Government agencies, corporate consumers, project developers, and other interested companies to join the CGPP.

Selain pembentangan mengenai butiran terperinci berkenaan CGPP seperti dalam panduan *Information Guide for Corporate Green Power Programme (For Solar PV Plant)* oleh ST, Single Buyer (SB) yang merupakan agensi pelaksana *New Enhanced Dispatch Arrangement* (NEDA) turut membuat pembentangan mengenai mekanisme di bawah rangka kerja NEDA.

In addition to presentations on detailed information about CGPP as outlined in the Information Guide for Corporate Green Power Programme (For Solar PV Plant) by the Commission, the Single Buyer (SB), which is the implementing agency of the New Enhanced Dispatch Arrangement (NEDA), also presented mechanisms under the NEDA framework.

Kuota CGPP sebanyak 800 MW habis dilanggan sebelum berakhirnya 2023. Semua permohonan telah melalui proses *first come, first served* oleh Jawatankuasa Penilaian CGPP, di mana daripada 117 permohonan, ST telah menyenaraikan 32 pemohon yang berjaya memperoleh kuota CGPP. Pengumuman ini dibuat melalui kenyataan media bertarikh 7 Ogos 2023 dan 8 November 2023 dan senarai lengkap permohonan yang berjaya boleh didapati di laman sesawang ST di www.st.gov.my.

The 800 MW CGPP quota was fully subscribed before the end of 2023. All applications underwent a first come, first served process by the CGPP Evaluation Committee, where out of 117 applications, the Commission listed 32 successful applicants who obtained CGPP quotas. This announcement was made through media statements dated 7 August 2023, and 8 November 2023, and the complete list of successful applications can be found at the Commission's website at www.st.gov.my.

Sedekad Penganjuran *Energy Efficiency (EE) Challenge*

Energy Efficiency (EE) Challenge bertujuan untuk membudayakan kehidupan cekap tenaga di kalangan generasi muda bagi memastikan tenaga elektrik dapat digunakan dengan sebaiknya. Diperkenalkan pada 2014, *EE Challenge 2023* merupakan tahun ke-10 penganjurannya.

EE Challenge 2023 memperkenalkan empat (4) kategori pertandingan iaitu *poster-drawing-challenge* dan *story-telling-challenge* untuk penyertaan sekolah rendah, manakala Sekolah Paling EE dan Video EE Paling Kreatif untuk penyertaan sekolah menengah.

Kategori Sekolah Paling EE ialah pertandingan sekolah cekap tenaga yang diambil kira berdasarkan penjimatan bil elektrik selama empat (4) bulan dari Jun sehingga September 2023 dan aktiviti kecekapan tenaga yang dijalankan sepanjang tempoh pertandingan. Penilaian kepada sekolah-sekolah yang bertanding dibuat berdasarkan kepada rekod bil elektrik sekolah selama empat (4) bulan tempoh pertandingan berbanding tahun sebelumnya, termasuk aktiviti-aktiviti penjimatan tenaga elektrik yang dilaksanakan. Kategori Video EE Paling Kreatif pula ialah pertandingan menghasilkan video yang merangkumi rumusan berkaitan aktiviti-aktiviti kecekapan tenaga yang dilaksanakan di sekolah yang berdurasi 3-4 minit.

Pertandingan ini berlangsung sepanjang dari bulan Jun sehingga Oktober 2023.

A Decade of Organising Energy Efficiency (EE) Challenge

The Energy Efficiency (EE) Challenge aims to instil energy-efficient lifestyles among the younger generation to ensure an optimal use of electricity. Introduced in 2014, the EE Challenge 2023 marks its 10th year of organisation.

EE Challenge 2023 introduces four (4) competition categories: poster-drawing-challenge and story-telling-challenge for primary schools, while the Most EE School and Most Creative EE Video for secondary schools.

The Most EE School category is a competition for energy-efficient schools, assessed based on electricity bill savings over a four (4)-month period from June to September 2023 and energy efficiency activities conducted during the competition period. Evaluation of participating schools is based on their electricity bill records during the four (4)-month competition period compared to the previous year, including implemented electricity-saving activities. The Most Creative EE Video category, on the other hand, is a competition to produce a video summarising energy efficiency activities conducted in schools, with a duration of 3-4 minutes.

This competition runs from June to October 2023.

Jumlah Penyertaan *EE Challenge 2023*
Total Participation in EE Challenge 2023

Kategori *Category*	**Penyertaan** *Participation*
#poster-drawing-challenge	**2,393**
#story-telling-challenge	**149**
Video EE Paling Kreatif *Most Creative EE Video*	**70**
Sekolah Paling EE *Most EE School*	**65**
Jumlah *Total*	**2,677**

Majlis penyampaian hadiah *EE Challenge 2023* diadakan pada 14 Disember 2023 di Putrajaya, dengan dirasmikan oleh YB Nik Nazmi Nik Ahmad, Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim.

The prize presentation ceremony for EE Challenge 2023 was held on 14 December 2023, in Putrajaya, officiated by YB Nik Nazmi Nik Ahmad, the Minister of Natural Resources, Environment, and Climate Change.

Sepanjang 10 tahun penganjurannya, penjimatan tenaga terkumpul sebanyak 1,515,011 kWj dapat dinikmati hasil daripada pembudayaan aktiviti kecekapan tenaga yang dijalankan oleh sekolah yang telah bertanding. Ia bersamaan dengan nilai penjimatan bil elektrik berjumlah RM771,126.00 berdasarkan tarif kategori B kepada Kementerian Pendidikan Malaysia, serta penghindaran karbon sebanyak 1,181.71 tan CO_2 terhadap alam sekitar. Hasil penjimatan terkumpul ini juga dapat menggalakkan pertumbuhan sebanyak 17,753 batang anak pokok selama tempoh 10 tahun.

Throughout its 10 years of implementation, a cumulative energy saving of 1,515,011 kWh has been achieved as a result of fostering energy efficiency activities carried out by participating schools. This is equivalent to a total electricity bill saving value of RM771,126.00 based on category B tariff to the Ministry of Education Malaysia, as well as the avoidance of carbon emissions amounting to 1,181.71 tonnes of CO_2 into the environment. The cumulative savings have also contributed to the growth of 17,753 tree saplings over the 10-year period.



Maljis Penyampaian Hadiah *EE Challenge 2023*
Prize Presentation Ceremony for EE Challenge 2023

RUU Kecekapan dan Konservasi Tenaga (EECA)

Rang Undang-Undang (RUU) Kecekapan dan Konservasi Tenaga 2023 (EECA) telah diluluskan selepas bacaan kali ketiga di Dewan Rakyat pada 11 Oktober 2023, di mana pembentangan dan penggulungan perbahasan dilaksanakan oleh YB Nik Nazmi Nik Ahmad, Menteri Sumber Asli, Alam Sekitar dan Perubahan Iklim.

Energy Efficiency and Conservation Bill (EECA)

The Energy Efficiency and Conservation Bill 2023 (EECA) was approved after the third reading in the House of Representatives on 11 October 2023, where the presentation and winding-up of the debate were conducted by YB Nik Nazmi Nik Ahmad, the Minister of Natural Resources, Environment, and Climate Change.

Objektif penggubalan RUU ini adalah untuk mencapai komitmen Malaysia dalam mengurangkan intensiti pelepasan GHG merentasi ekonomi sebanyak 45% (berdasarkan KDNK) pada 2030. Ia juga bagi menyokong aspirasi negara untuk mencapai pelepasan GHG bersih sifar seawal 2050, serta untuk membolehkan Kerajaan menguruskan permintaan tenaga, mempromosikan kecekapan tenaga dan amalan penggunaan tenaga secara lestari dengan memberi tumpuan kepada pelaksanaan inisiatif kecekapan tenaga di sektor industri, komersial dan domestik.

RUU ini akan menjadi komponen penting dalam pembangunan mampan, dengan objektif untuk mengurangkan penggunaan tenaga dan mengurangkan kesan kepada alam sekitar. Ia juga merupakan salah satu penyelesaian jangka panjang bagi mengurangkan intensiti tenaga dan pelepasan karbon.

RUU Kecekapan dan Konservasi Tenaga dijangka akan memberi impak yang besar terhadap kedua-dua pengurusan permintaan tenaga di Malaysia dan pengurangan kos alam sekitar. Dengan adanya RUU ini, Malaysia diunjurkan memperoleh 2,017 juta gigajoule penjimatan tenaga, bernilai RM97.10 bilion menjelang 2050.

The objective of drafting this bill is to fulfil Malaysia's commitment to reduce GHG emissions intensity across the economy by 45% (based on GDP) by 2030. It is also to support the nation's aspiration to achieve net-zero GHG emissions as early as 2050, and to enable the Government to manage energy demand, promote energy efficiency, and sustainable energy use practices by focusing on implementing energy efficiency initiatives in the industrial, commercial, and domestic sectors.

This bill will be a crucial component in sustainable development, with the objective of reducing energy consumption and minimising environmental impact. It serves as a long-term solution for reducing energy intensity and carbon emissions.

The Energy Efficiency and Conservation Bill is expected to have a significant impact on both energy demand management in Malaysia and environmental cost reduction. With this bill in place, Malaysia is projected to achieve energy savings of 2,017 million gigajoules, valued at RM97.10 billion by 2050.



Pembangunan Standard MS 2799

Sebagai agensi pelaksana bagi program MEPS, ST komited untuk meneruskan program berkenaan dan telah mengenal pasti *hot & cold water dispenser* sebagai salah satu kelengkapan yang perlu mematuhi MEPS. Ini bermakna ia perlu dilekatkan dengan label penarafan kecekapan tenaga sebagai salah satu cara penandaan, untuk memastikan pengguna di Malaysia boleh memilih untuk menggunakan kelengkapan yang cekap tenaga.

Pada 13-15 Jun 2023, ST dan SIRIM telah membuat lawatan teknikal ke Coway R&D Center dan makmal Korea Testing Laboratory (KTL) di Seoul, Korea Selatan bagi mempelajari dan mendalami kaedah pengujian ke atas kelengkapan *hot & cold water dispenser*. Pada 21 Jun 2023, Jabatan Standard Malaysia melalui *Technical Committee on Performance of Household and Similar Electrical Appliances* telah bersetuju untuk menubuhkan *Ad Hoc Group on Water Dispenser*. *Ad Hoc Group* tersebut yang dipengerusikan oleh ST telah bersidang sebanyak empat (4) kali sepanjang 2023 dan berjaya membangunkan MS 2799 *Water Dispenser for Household Use - Method of Measuring the Performance*.

Standard ini akan diguna pakai oleh SIRIM untuk membuat pengujian kecekapan tenaga ke atas sampel *hot & cold water dispenser*, dan data daripada pengujian tersebut akan digunakan untuk pembangunan garis panduan MEPS untuk kelengkapan berkenaan.

Development of Standard MS 2799

As the implementing agency for the MEPS programme, the Commission is committed to continuing the programme and has identified hot & cold water dispensers as one of the appliances that need to comply with MEPS. This means that they need to be affixed with an energy efficiency rating label as a means of marking, to ensure that consumers in Malaysia can choose to use energy-efficient appliances.

On 13 to 15 June 2023, the Commission and SIRIM conducted a technical visit to Coway R&D Centre and the Korea Testing Laboratory (KTL) in Seoul, South Korea, to study and understand the testing methods for hot & cold water dispensers. On 21 June 2023, the Department of Standards Malaysia, through the Technical Committee on Performance of Household and Similar Electrical Appliances, has agreed to establish an Ad Hoc Group on Water Dispenser. The Ad Hoc Group, chaired by the Commission, met four (4) times throughout 2023 and successfully developed MS 2799 Water Dispenser for Household Use - Method of Measuring the Performance.

This standard will be utilised by SIRIM to perform energy efficiency testing on samples of hot & cold water dispensers, and the data from these tests will be used for the development of MEPS guidelines for the appliances.



Ahli Mesyuarat *Ad Hoc Group on Water Dispenser* di Bawah *Technical Committee on Performance of Household and Similar Electrical Appliances*
Members of the Ad Hoc Group on Water Dispenser under the Technical Committee on Performance of Household and Similar Electrical Appliances

6

Menambah Baik Kualiti Kawal Selia dan Pelaksanaan Perkhidmatan

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Pengurusan Aduan

Complaints Management

Sepanjang 2023, ST telah menerima sebanyak 1,579 aduan berbanding 1,019 aduan pada tahun sebelumnya. Daripada jumlah itu, sebanyak 1,480 aduan atau 93.7% telah diselesaikan pada akhir Disember 2023.

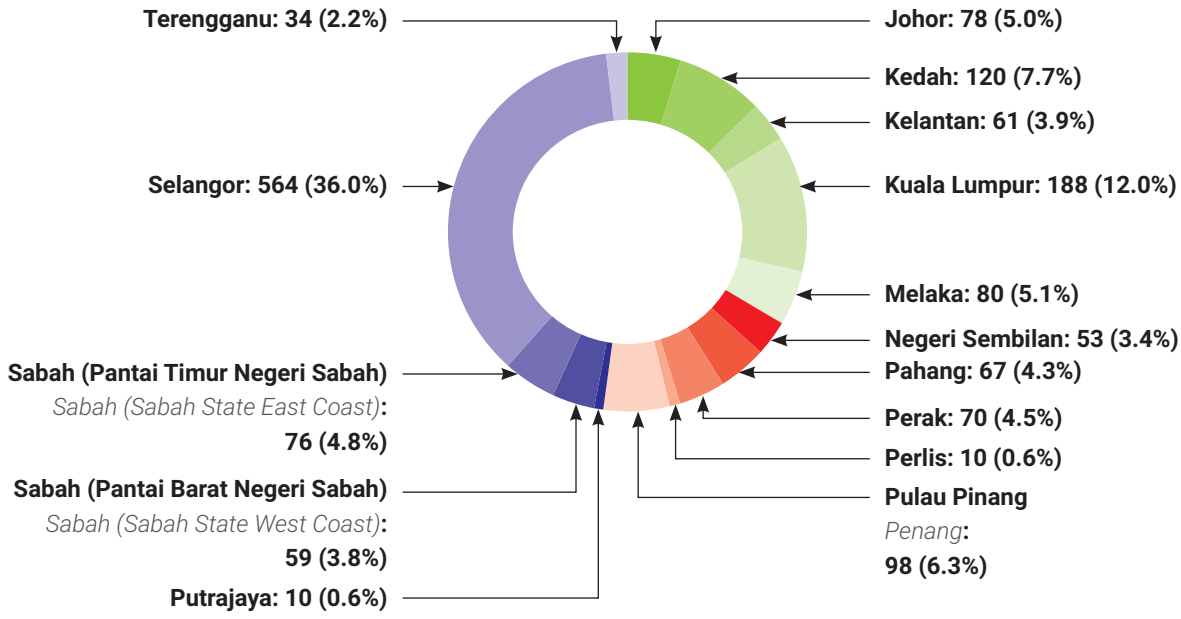
Throughout 2023, the Commission received a total of 1,579 complaints compared to 1,019 complaints the previous year. Of that total, 1,480 complaints or 93.7% were resolved by the end of December 2023.

Kategori Aduan Tertinggi, 2023
Highest Complaints by Category, 2023



Kenaikan bil tidak munasabah *Unreasonable billing increase*	181
Pendawaian tidak mengikut standard *Non-compliant wiring*	154
Voltan luar biasa *(over/under voltage)* *Abnormal voltage (over/under voltage)*	117
Kesalahan kategori tarif elektrik *Electricity tariff category error*	95
Lain-lain *Others*	92

Aduan Mengikut Kawasan, 2023
Complaints by Area, 2023



Bagi mendapatkan hala tuju serta tindakan penyelesaian bagi aduan yang melibatkan polisi serta undang-undang, mesyuarat penyelarasan aduan bersama unit yang berkenaan, pemegang lesen serta pengadu turut diadakan. Di samping itu, ST juga mengkaji aduan-aduan yang berulang sekali gus membantu mencari kaedah penyelesaiannya.

ST sentiasa komited dalam memastikan aduan yang diterima dapat diselesaikan dalam tempoh yang dijanjikan. Sebanyak 680 aduan atau 57.4% aduan dapat diselesaikan mengikut piagam pelanggan. Pencapaian ini sejajar dengan pelaksanaan yang dipraktikkan oleh Biro Pengaduan Awam (BPA).

To achieve direction and resolution for complaints involving policies and laws, coordination meetings involving relevant units, licensees, and complainants were conducted. Additionally, the Commission also reviews recurring complaints to facilitate resolution methods.

ST is committed to ensuring that received complaints are resolved within the promised timeframe. A total of 680 complaints, or 57.4%, were resolved according to client charter standards. This achievement aligns with the practices implemented by the Public Complaints Bureau (BPA).

Kajian Kepuasan Pelanggan (CSI) ST

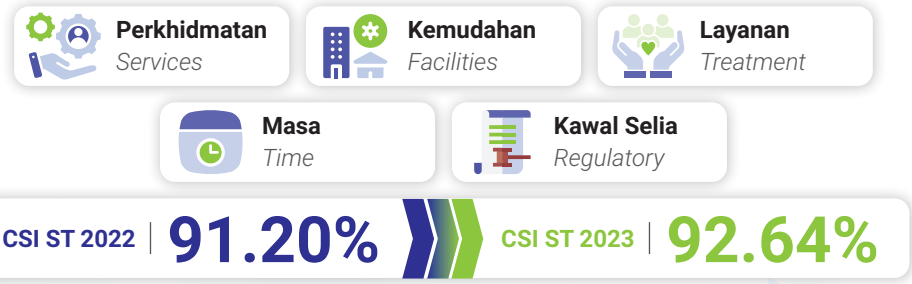
Customer Satisfaction Index (CSI) ST

Kajian Kepuasan Pelanggan (CSI) ST 2023 dijalankan bagi mengukur tahap kepuasan pelanggan terhadap perkhidmatan yang disediakan, di samping menambah baik kualiti perkhidmatan ST. CSI ST ini dijalankan pada Ogos hingga September 2023 secara dalam talian. Seramai 538 responden yang mempunyai data lengkap telah dianalisis.

The Commission's Customer Satisfaction Index (CSI) 2023 was conducted to measure the level of customer satisfaction with the services provided, as well as to enhance the Commission's service quality. The Commission's CSI survey was conducted online from August to September 2023. A total of 538 respondents with complete data were analysed.

Skop CSI ST, 2023

Commission's CSI Scope, 2023



Penambahbaikan Terhadap Akta dan Peraturan

Improvements to Acts and Regulations

Semakan Akta Bekalan Elektrik 1990 [Akta 447] dan Peraturan-Peraturan Elektrik 1994

Cadangan pindaan kepada Akta 447 telah digubal bagi memperuntukkan hal berkaitan aktiviti pengimportan dan pengeksportan elektrik, selaras dengan peredaran masa dan dan keperluan industri. Pindaan terhadap Peraturan-Peraturan Elektrik 1994 pula dilaksanakan bagi memastikan undang-undang sentiasa ditambah baik dan dikemas kini mengikut peredaran masa dan perkembangan dalam industri elektrik.

Bagi tujuan ini, satu (1) bengkel antara ST dengan Pejabat Penasihat Undang-Undang dan Kementerian Sumber Asli, Alam Sekitar dan Perubahan Iklim (NRECC) telah diadakan pada 23–25 Ogos 2023 di Genting Highlands, Pahang. Antara yang dibentangkan adalah cadangan pindaan kepada Akta 447 yang melibatkan pelesenan aktiviti import dan eksport elektrik, hukuman dan kesalahan serta cadangan mekanisme untuk pelaksanaan aktiviti pengimportan dan pengeksportan elektrik tersebut. Turut dibentangkan adalah penggubalan kepada Peraturan-Peraturan Elektrik (Pindaan) 2023 dan Peraturan-Peraturan Bekalan Elektrik (Pelesenan) 2023.

Rang Undang-Undang (RUU) Bekalan Elektrik (Pindaan) 2023 telah digubal dan dimuktamadkan sewajarnya di peringkat ST dan dikemukakan kepada pihak Kementerian untuk semakan dan penelitian sewajarnya. Peraturan-Peraturan Elektrik (Pindaan) 2023 dan Peraturan-Peraturan Bekalan Elektrik (Pelesenan) 2023 juga telah digubal dan sedang dalam penelitian sewajarnya oleh pihak teknikal di ST sebelum draf tersebut dikemukakan kepada pihak Kementerian.

Review of the Electricity Supply Act 1990 [Act 447] and the Electricity Regulations 1994

Proposed amendments to Act 447 have been drafted to address issues related to the activities of electricity import and export, aligning with current trends and industry needs. Amendments to the Electricity Regulations 1994 are also being implemented to ensure that the laws are continually enhanced and updated in accordance with current trends and developments in the electrical industry.

For this purpose, a workshop between the Commission, the Legal Advisor's Office and the Ministry of Natural Resources, Environment and Climate Change (NRECC) was held on 23–25 August 2023 in Genting Highlands, Pahang. Among the topics presented were proposed amendments to Act 447 involving licensing of the activity of importing and exporting the electricity, punishment and offences, and proposed mechanisms for implementing these activities. Also presented were the drafting of the Electricity Regulations (Amendment) 2023 and the Electricity Supply Regulations (Licensing) 2023.

The Electricity Supply (Amendment) Bill 2023 has been drafted and finalised at the Commission level and submitted to the Ministry for review and appropriate scrutiny. The Electricity (Amendment) Regulations 2023 and Electricity Supply (Licensing) Regulations 2023 have also been drafted and are currently under technical review at the Commission before submission to the Ministry.

RUU Kecekapan dan Konservasi Tenaga (EECA) 2023 dan Peraturan-Peraturan Kecekapan dan Konservasi Tenaga 2024

Penggubalan suatu perundangan khusus berhubung dengan kecekapan dan konservasi tenaga adalah penting bagi mengawal selia penggunaan dan pemuliharaan tenaga, menambah baik dan meningkatkan kecekapan tenaga serta mengelakkan pembaziran.

Bagi tujuan berkenaan, sesi bacaan pruf RUU EECA telah diadakan antara ST dengan Pejabat Penasihat Undang-Undang NRECC, Bahagian Kecekapan Tenaga NRECC dan Bahagian Gubalan Jabatan Peguam Negara pada 25–29 September 2023. RUU EECA telah dibentangkan dan diluluskan di Dewan Rakyat pada 11 Oktober 2023.

Susulan itu, satu (1) bengkel bagi membincangkan dan memuktamadkan Peraturan-Peraturan Kecekapan dan Konservasi Tenaga telah diadakan pada 1–3 November 2023 di Cyberjaya yang melibatkan pegawai ST, Pejabat Penasihat Undang-Undang NRECC dan Bahagian Kecekapan Tenaga NRECC.

Bengkel tersebut membincangkan peruntukan-peruntukan yang dicadangkan untuk diperuntukkan dalam Peraturan-Peraturan Kecekapan dan Konservasi Tenaga 2024 dan Peraturan-Peraturan Kecekapan dan Konservasi Tenaga (Pengkompaunan Kesalahan) 2024. Draf ini telah dimuktamadkan di peringkat ST dan dikemukakan kepada Kementerian untuk semakan dan penelitian sewajarnya.

Energy Efficiency and Conservation Act (EECA) Bill 2023 and Energy Efficiency and Conservation Regulations 2024

The drafting of specific legislation on energy efficiency and conservation is crucial for regulating the use and preservation of energy, improving and enhancing the energy efficiency and preventing wastage.

For this purpose, a reading session of the EECA Bill proof was conducted between the Commission, the Legal Advisor's Office of the NRECC, the Energy Efficiency Division of NRECC and the Drafting Division of the Attorney General's Chambers from 25–29 September 2023. The EECA Bill was presented and passed in the House of Representatives on 11 October 2023.

Subsequently, a workshop to discuss and finalise the Energy Efficiency and Conservation Regulations was held from 1–3 November 2023 in Cyberjaya, involving the officials from the Commission, Legal Advisor's Office and the Efficiency Division of NRECC.

The workshop discussed proposed provisions to be included in the Energy Efficiency and Conservation Regulations 2024 and the Energy Efficiency and Conservation Regulations (Compounding of Offences) 2024. These drafts have been finalised at the Commission level and submitted to the Ministry for review and appropriate scrutiny.

Pelaksanaan *Regulatory Impact Analysis* (RIA) bagi RUU Bekalan Elektrik (Pindaan) 2023

Pelaksanaan RIA diadakan bagi menilai impak cadangan pindaan kepada Akta Bekalan Elektrik 1990 [Akta 447], termasuk bagi mengenal pasti apa-apa kesan luar jangka, sekiranya ada, terhadap industri tenaga negara sekiranya pindaan tersebut dilaksanakan.

Sehubungan itu, sesi libat urus antara ST dengan pemegang taruh telah diadakan pada 22 Mei 2023 di Putrajaya bagi mendapatkan input dan maklum balas daripada pemain industri berhubung dengan isu keselamatan, aspek teknikal, kepentingan dan impak cadangan pindaan kepada Akta 447

Implementation of Regulatory Impact Analysis (RIA) for Electricity Supply (Amendment) Bill 2023

The RIA implementation was conducted to assess the impact of proposed amendments to the Electricity Supply Act 1990 [Act 447], including identifying any unforeseen effects, if any, on the national energy industry should these amendments are implemented.

In this regard, an engagement session between the Commission and stakeholders was held on 22 May 2023 in Putrajaya to gather input and feedback from industry players regarding safety issues, technical aspects, interests, and impacts of the proposed amendments to the Act 447 on the national energy

tersebut kepada industri tenaga negara, khususnya yang melibatkan aktiviti pengimportan dan pengeksportan elektrik.

Selain itu, bengkel antara ST dengan Perbadanan Produktiviti Malaysia (MPC) bagi penyediaan Penyata Impak Peraturan (RIS) telah diadakan pada 29–31 Mei 2023 di Melaka bagi melengkapkan laporan penilaian pelaksanaan RIA. RIS yang disediakan ini telah memenuhi kriteria RIA dan telah diluluskan oleh pihak MPC pada 13 Jun 2023.

industry, particularly involving the activities of importing and exporting the electricity.

Additionally, a workshop between the Commission and the Malaysian Productivity Corporation (MPC) for the preparation of the Regulatory Impact Statement (RIS) was held from 29–31 May 2023 in Melaka to complete the RIA assessment report. The prepared RIS has met RIA criteria and was approved by MPC on 13 June 2023.

Bengkel Semakan kepada Seksyen 53 Akta Bekalan Elektrik 1990 [Akta 447] dan Seksyen 39 Akta Bekalan Gas 1993 [Akta 501]

Satu (1) bengkel dalaman ST diadakan pada 30–31 Oktober 2023 di Putrajaya bagi mengenal pasti keperluan untuk memperuntukkan perkara yang ditetapkan di bawah Seksyen 53 Akta 447 dan Seksyen 39 Akta 501 sedia ada, yang memberikan kuasa kepada Menteri untuk membuat peraturan berkenaan perkara yang disenaraikan dalam peruntukan tersebut.

Input dan maklum balas yang diterima daripada setiap jabatan yang terlibat sedang diselaraskan dan cadangan pindaan kepada kedua-dua seksyen ini akan dibentangkan kepada pihak Pengurusan Tertinggi ST untuk penelitian dan pertimbangan selanjutnya.

Workshop on Review of Section 53 of the Electricity Supply Act 1990 [Act 447] and Section 39 of the Gas Supply Act 1993 [Act 501]

An internal workshop at the Commission was held on 30–31 October 2023 in Putrajaya to identify the need to provide for matters stipulated under the existing Section 53 of Act 447 and Section 39 of Act 501, which empower the Minister to make regulations concerning matters listed in these provisions.

Inputs and feedback received from each relevant department are being coordinated, and proposed amendments to both sections will be presented to the Commission's Top Management for further review and consideration.

Inisiatif Meningkatkan Pematuhan

Initiatives to Enhance Compliance

Pelbagai inisiatif telah dilaksanakan pada 2023 bagi meningkatkan kadar pematuhan terhadap keperluan perundangan ST, berdasarkan pemerhatian bahawa tahap kesedaran di kalangan pihak berkuasa dan orang awam berkaitan keselamatan dalam industri pembekalan elektrik dan pembekalan gas berpaip masih lagi rendah.

Beberapa program dan sesi libat urus telah dilaksanakan bagi meningkatkan kadar pematuhan ini termasuk melalui taklimat, seminar, kunjungan hormat dan mesyuarat serta bengkel yang diadakan sepanjang tahun.

Various initiatives were implemented in 2023 to enhance compliance with the Commission's legal requirements, based on observations that awareness levels among authorities and the public regarding safety in the electricity supply and piped gas industries remain low.

Several programmes and engagement sessions were conducted throughout the year to improve compliance, including briefings, seminars, courtesy visits, meetings, and workshops.

Selain itu, satu (1) kertas kerja berkaitan pematuhan keperluan ST turut dibentangkan di Mesyuarat Jawatankuasa Tetap Kerajaan Tempatan Negeri Selangor Bil. 2/2023 di Petaling Jaya, bagi membincangkan satu bentuk kerjasama strategik di antara ST, Pejabat Setiausaha Kerajaan (SUK) Negeri Selangor dan semua pihak berkuasa tempatan (PBT) di Selangor. Ia bagi meningkatkan pematuhan keperluan perundangan di bawah kawal seliaan ST, bagi mengurangkan risiko kemalangan dan kebakaran khususnya di Selangor.

Additionally, a paper on the Commission's compliance requirements was presented at the Selangor State Local Government Standing Committee Meeting No. 2/2023 in Petaling Jaya. This aimed to discuss a strategic partnership between the Commission, the Selangor State Secretary's Office (SUK), and all local authorities (PBTs) in Selangor to enhance compliance with the Commission's regulatory requirements, thereby reducing accident and fire risks, especially in Selangor.

Program Meningkatkan Pematuhan, 2023

Programmes to Enhance Compliance, 2023

Program *Programme*	**Keterangan** *Description*
Bengkel bersama industri insurans di Malaysia iaitu: *Workshop with the insurance industry in Malaysia, namely:* **i. Persatuan Insurans Am Malaysia (PIAM)** *General Insurance Association of Malaysia (PIAM)* **ii. Persatuan Perlindungan Kebakaran Malaysia (FPAM)** *Fire Protection Association of Malaysia (FPAM)*	**Memberi pendedahan dan taklimat berkaitan keperluan pematuhan Akta Bekalan Elektrik dan Akta Bekalan Gas dan perundangan subsidiarinya.** **Mendapat persetujuan PIAM dan FPAM untuk mengambil kira keperluan ST dalam menaja jamin polisi insurans bagi syarikat-syarikat insurans di bawah naungannya.** *Providing exposure and briefings on compliance requirements under the Electricity Supply Act and Gas Supply Act and their subsidiary legislations.* *Obtaining agreement from PIAM and FPAM to consider the Commission's compliance requirements in underwriting insurance policies for insurance companies under their auspices.*
Libat urus bersama agensi Kerajaan iaitu: *Engagement with Government agencies:* **i. Cawangan Kerja Elektrik Jabatan Kerja Raya (JKR)** *Electrical Works Branch, Public Works Department (JKR)* **ii. Pusat Khidmat Kontraktor (PKK), Kementerian Pembangunan Usahawan Dan Koperasi** *Contractor Service Centre (PKK), Ministry of Entrepreneur Development and Cooperatives* **iii. Lembaga Pembangunan Industri Pembinaan (CIDB)** *Construction Industry Development Board (CIDB)*	**Kunjungan hormat dan perbincangan kerjasama strategik berkenaan isu-isu berimpak tinggi dalam meningkatkan kadar pematuhan.** *Courtesy visits and strategic cooperation discussions on high-impact issues to enhance compliance rates.*
Mesyuarat dan bengkel bersama SUK, Bahagian Kerajaan Tempatan (BKT) dan PBT bagi negeri berikut: *Meetings and workshops with SUK, Local Government Division (BKT), and PBT for the following states:* **i. Wilayah Persekutuan** *Federal Territory* **ii. Selangor** **iii. Pulau Pinang** *Penang* **iv. Johor**	**Menerapkan keperluan perundangan ST (Akta 447, Akta 501 dan perundangan subsidiarinya) di peringkat PBT di negeri-negeri yang terlibat terutama apabila melibatkan skop-skop seperti berikut:** *Implementing the Commission's legislative requirements (Act 447, Act 501, and subsidiary legislations) at the local authority (PBT) level in the involved states, particularly concerning scopes such as:* • **Tender dan senggaraan** *Tender and maintenance* • ***One Stop Centre* atau Kebenaran Merancang** *One Stop Centre or Planning Permission* • **Lesen Perniagaan** *Business Licensing*
Slot di program Selamat Pagi Malaysia di TV1 berkenaan topik 'Kesedaran Orang Awam Melantik Kontraktor Elektrik Berdaftar Suruhanjaya Tenaga' pada 16 Oktober 2023 *Slot on the 'Selamat Pagi Malaysia' programme on TV1 regarding the topic 'Public Awareness in Appointing Energy Commission Registered Electrical Contractors' on 16 October 2023.*	**Memberi informasi dan kesedaran kepada orang awam berkaitan keperluan orang awam untuk melantik Kontraktor Elektrik berdaftar bagi menjalankan kerja-kerja pendawaian elektrik di rumah.** *Providing information and awareness to the public regarding the requirement to appoint registered Electrical Contractors for conducting electrical wiring work at home.*

Pelaksanaan Pelan Pengurusan Risiko

Implementation of Risk Management Plan

Pelan Pengurusan Risiko bertujuan mengenal pasti risiko serta menganalisis kesan dan akibat sekiranya sesuatu risiko itu terjadi, berserta perancangan langkah-langkah dalam mengawal risiko tersebut.

Bagi 2023, Pelan Pengurusan Risiko Suruhanjaya Tenaga (PPRST) telah dikemas kini dan dilaksanakan bermula dengan pengukuhan tadbir urus pelaporan pengurusan risiko kepada Kumpulan Kerja Keutuhan Tadbir Urus Suruhanjaya Tenaga, bagi memastikan keseluruhan proses pengurusan risiko berjalan lancar dan diselaraskan di peringkat jabatan. Kumpulan Kerja ini turut bertanggungjawab dalam mengenal pasti strategi-strategi menangani risiko melalui semakan aktiviti langkah kawalan yang dilaksanakan serta keberkesanannya.

Elemen lain PPRST yang turut dilaksanakan ialah pembudayaan pengurusan risiko di kalangan warga kerja ST. Ia meliputi sesi seminar dan bengkel berkenaan pengurusan risiko yang menekankan aspek proses pengurusan risiko berdasarkan piawaian ISO 31000:2018 *Risk Management – Guidelines*. Warga kerja ST turut didedahkan kepada teori dan praktikal dalam pengurusan risiko bagi membolehkan ia terus dipraktikkan dalam tugasan seharian.

The Risk Management Plan aims to identify risks and analyse the consequences and impacts if these risks were to occur, along with planning steps to control them.

In 2023, the Commission's Risk Management Plan (PPRST) was updated and implemented, starting with the enhancement of risk management reporting governance to the Energy Commission's Working Group on Good Governance, ensuring smooth and coordinated risk management processes at the departmental level. This working group is also responsible for identifying strategies to address risks through reviews of implemented control measures and their effectiveness.

Another element of PPRST implemented is the cultivation of risk management among the Commission's employees. This includes seminars and workshops on risk management, emphasising the aspects of risk management processes based on the ISO 31000:2018 Risk Management - Guidelines standard. The Commission's employees are exposed to both theoretical and practical aspects of risk management to enable its continual application in their daily tasks.

Inisiatif Integriti dan Audit Dalaman

Integrity and Internal Audit Initiatives

Pemantapan Nilai Integriti

Sebagai usaha memantapkan dan meningkatkan budaya kerja berintegriti tinggi dalam bekerja, beberapa panduan berkenaan proses kerja dan pelaporan telah dibangunkan dan seterusnya dimuat naik ke laman Intranet ST untuk ketelusan.

Selain itu, beberapa ceramah integriti dan bebas rasuah serta bengkel integriti turut dijalankan sepanjang tahun untuk warga kerja ST. Program ceramah anti rasuah juga diadakan di tiga (3) Pejabat Kawasan ST dengan kerjasama Yayasan Sinar Untuk Malaysia-Rasuah Busters.

Strengthening Integrity Values

In an effort to strengthen and enhance a culture of high integrity at work, several guidelines regarding work processes and reporting have been developed and subsequently uploaded to the Commission's Intranet for transparency.

Additionally, several integrity and anti-corruption lectures and workshops were conducted throughout the year for the Commission's employees. An anti-corruption lecture programme was also held at three (3) of the Commission's Regional Offices in collaboration with Yayasan Sinar Untuk Malaysia-Rasuah Busters.

Inisiatif Audit Dalaman

Bagi 2023, ST telah mengeluarkan tujuh (7) laporan audit dalaman hasil daripada pelaksanaan empat (4) audit operasi yang dilaksanakan di Pejabat Kawasan, satu (1) audit operasi Unit Pelesenan, Kualiti Bekalan, Perkhidmatan dan Pengagihan Gas, satu (1) audit operasi Unit Pelesenan Elektrik dan satu (1) audit pematuhan ISMS 27001:2013.

Perkara yang memerlukan penambahbaikan kawalan telah dibentangkan kepada Jawatankuasa Audit untuk dibincangkan. Di samping itu, prosedur kawalan dalaman ST bagi perkara-perkara yang disemak semula turut dibentangkan kepada Jawatankuasa Audit untuk pertimbangan. Pihak Pengurusan Tertinggi ST turut hadir di Mesyuarat Jawatankuasa Audit untuk memberi maklum balas mengenai perkara yang dibentangkan semasa mesyuarat Jawatankuasa Audit.

Internal Auditing Activities

In 2023, the Commission issued seven (7) internal audit reports from the implementation of four (4) operational audits conducted at Regional Offices, one (1) operational audit at the Gas Licensing, Service Quality and Distribution Unit,, one (1) operational audit at the Electrical Licensing Unit, and one (1) compliance audit of ISMS 27001:2013.

Issues requiring control improvements were presented to the Audit Committee for discussion. Additionally, the Commission's internal control procedures for reviewed matters were also presented to the Audit Committee for consideration. The Commission's Top Management also attended the Audit Committee Meeting to provide feedback on the matters presented during the meeting.

Kerjasama Strategik dan Libat Urus Bersama Pemegang Taruh

Strategic Cooperation and Engagement with Stakeholders

Sepanjang 2023, ST telah menjalankan beberapa program strategik dan libat urus bersama pemegang taruh sama ada di dalam mahupun di luar negara.

Salah satu kerjasama strategik tersebut ialah Sesi Libat Urus Bersama British High Commission dan Office of Gas and Electricity Markets (Ofgem) yang diadakan pada 31 Oktober 2023 di Kuala Lumpur. Dipengerusikan oleh Pengerusi ST, Tuan Muhammed Rashdan Mohd Yusof, pelbagai perkongsian dan pertukaran maklumat telah diperoleh melalui kerjasama tersebut.

Throughout 2023, the Commission has conducted several strategic programmes and engagements with stakeholders, both domestically and internationally.

One of these strategic collaborations was the Engagement Session with the British High Commission and the Office of Gas and Electricity Markets (Ofgem), held on 31 October 2023 in Kuala Lumpur. Chaired by the Commission's Chairman, Tuan Muhammed Rashdan Mohd Yusof, various partnerships and information exchanges were facilitated through this cooperation.



Sesi Libat Urus Bersama Ofgem
Engagement Session with Ofgem

Pada 22 November 2023 pula, ST telah mengadakan Mesyuarat Panel Perunding Tenaga (PPT) yang dihadiri seramai 150 peserta dari kalangan pemain industri. PPT merupakan sebuah platform bagi pemegang taruh berkaitan tenaga berbincang mengenai isu-isu dan perkara-perkara berkaitan tenaga untuk memantapkan serta memperkukuhkan industri pembekalan tenaga di Semenanjung.

Inisiatif yang dijalankan ini secara tidak langsung dapat mewujudkan ruang untuk perkongsian serta pertukaran pandangan mengenai kemahiran, teknologi dan pengalaman serta mewujudkan kerjasama dua hala yang dapat memberikan manfaat kepada organisasi dan industri pembekalan tenaga negara.

On 22 November 2023, the Commission held the Energy Consultative Panel (PPT) Meeting attended by 150 participants from the industry players. The PPT serves as a platform for energy stakeholders to discuss issues and matters related to energy, aimed at strengthening and enhancing the energy supply industry in the Peninsula.

The initiatives undertaken indirectly create opportunities for sharing and exchanging views on skills, technology, and experiences, fostering bilateral cooperation that benefits both the organisation and the national energy supply industry.



Mesyuarat PPT di Kuala Lumpur
PPT Meeting at Kuala Lumpur

Inisiatif Penambahbaikan Penyampaian Perkhidmatan

Initiatives to Enhance Service Delivery

Menaik Taraf Sistem Pengurusan Aset, Inventori Dan Stok

Sistem Pengurusan Aset, Inventori dan Stok (SPAIS) dibangunkan bagi menggantikan Sistem e-Aset yang telah digunakan melebihi 10 tahun. Aktiviti berkaitan dengan pengurusan aset, inventori dan stok direkodkan ke dalam

Upgrading Asset, Inventory, and Stock Management System

The Asset, Inventory, and Stock Management System (SPAIS) was developed to replace the decade-old e-Asset System. Activities related to asset, inventory, and stock management are recorded in SPAIS and integrated with the Commission's

Sistem SPAIS dan berintegrasi dengan Sistem Perakaunan ST, menjadikan kerja-kerja pengurusan aset, inventori dan stok lebih efisien dan sistematik. Sistem ini digunakan bagi proses merekodkan pembelian, mengurus, mengemas kini dan memantau aset teknologi maklumat dan komunikasi (ICT) dan aset bangunan seperti perabot, kelengkapan pejabat, peralatan elektronik, lekapan dan ubah suai. Selain itu, proses aliran kerja di dalam Sistem SPAIS juga adalah berdasarkan Tatacara Pengurusan Aset dan Stor Kerajaan (TPA & TPS) (Pekeliling Perbendaharaan Tahun 2018).

Pembangunan Sistem Perolehan ST

Sistem Perolehan baharu ST disediakan menggunakan sistem Perolehan Elektronik Dinamik (SPEED) secara dalam talian. Sistem ini menyediakan proses perolehan yang sistematik dan antara muka yang mudah serta membolehkan pembekal menyediakan produk serta perkhidmatan mereka kepada ST secara dalam talian. Projek pembangunan sistem ini dimulakan pada sukuan keempat 2023 dan tersedia untuk warga ST menjelang akhir sukuan pertama 2024.

Modul utama yang terdapat dalam sistem Perolehan SPEED melibatkan Modul Pembelian Terus, Modul Prestasi Pembekal, Modul Pengurusan Pembekal, *Dashboard* dan Pelaporan. Sistem ini juga berintegrasi dengan Sistem Kewangan ST.

Accounting System, making asset, inventory, and stock management more efficient and systematic. This system is used for recording purchases, managing, updating, and monitoring information and communication technology (ICT) assets and building assets such as furniture, office equipment, electronic devices, fittings, and renovations. Additionally, the workflow processes in SPAIS are based on the Government Asset and Store Management Procedures (TPA & TPS) (Treasury Circular 2018).

Development of the Commission's Procurement System

The Commission's new procurement system is built using the Dynamic Electronic Procurement (SPEED) system online. This system provides a systematic procurement process with a user-friendly interface and enables suppliers to offer their products and services to the Commission online. The system development project commenced in the fourth quarter of 2023 and is scheduled to be available to the Commission's staff by the end of the first quarter of 2024.

The main modules included in the SPEED Procurement System involve Direct Purchase Module, Supplier Performance Module, Supplier Management Module, Dashboard, and Reporting. The system is also integrated with the Commission's Financial System.

Hab Maklumat Tenaga Malaysia (MEIH) Sebagai Sumber Rujukan Industri

Malaysia Energy Information Hub (MEIH) as the Industry Source of Reference

Projek penambahbaikan portal MEIH dan aplikasi mudah alih *MyEnergyStats* merupakan inisiatif yang dilaksanakan bagi meningkatkan kualiti antara muka serta fungsi portal dan aplikasi berkenaan setelah sedekad berinteraksi dengan pengguna. Tempoh pelaksanaan projek ini mengambil masa selama dua (2) tahun bermula 2022.

Portal baharu ini mengadaptasikan konsep warna dan susun atur yang lebih kemas dan menarik, serta menambah ciri-ciri

The enhancement project for the MEIH portal and MyEnergyStats mobile application is an initiative aimed at improving the user interface and functionality of these platforms after a decade of interaction with users. The project implementation period spans two (2) years, starting from 2022.

The new portal adopts a cleaner and more attractive colour scheme and layout, incorporating multimedia features such as infographic displays and interactive maps. Additionally,

multimedia seperti paparan infografik dan peta interaktif. Selain itu, portal baharu ini juga menambah baik modul penghantaran data untuk *National Energy Balance* (NEB), di mana kompilasi data dapat dijalankan dengan lebih teratur bagi mendapatkan keseimbangan data tenaga yang lebih berkualiti mengikut garis masa yang ditetapkan.

Terdapat ruangan baru iaitu *Energy for Kids* yang diperkenalkan untuk kanak-kanak berusia 12 tahun ke bawah. Melalui ruangan ini, mereka didedahkan kepada asas-asas tenaga yang terdapat di Malaysia dalam bentuk interaktif seperti video, kuiz serta permainan dalam talian.

Ciri-ciri ini adalah untuk menjadikan portal MEIH sebagai portal data yang berketerampilan, komprehensif dan berupaya memenuhi keperluan rujukan pelbagai kategori pengguna termasuk golongan profesional, penggubal dasar, penyelidik dan pertubuhan bukan kerajaan (NGO) serta orang awam. Selain itu, pembangunan semula aplikasi *MyEnergyStats* menggunakan sistem operasi yang terkini membolehkan ia beroperasi dengan lebih baik, di mana ia boleh dimuat turun oleh pengguna iOS, Android dan Huawei.

the new portal enhances the data submission module for the National Energy Balance (NEB), allowing for more systematic data compilation to achieve higher-quality energy data within specified timelines.

A new section called Energy for Kids is introduced for children aged 12 and below. Through this section, they are introduced to the basics of energy in Malaysia in interactive formats such as videos, quizzes, and online games.

These features aim to position the MEIH portal as an efficient, comprehensive data portal capable of meeting the reference needs of various user categories, including professionals, policymakers, researchers, non-governmental organisations (NGOs), and the general public. Furthermore, rebuilding the MyEnergyStats application using the latest operating systems enhances its performance, making it downloadable for iOS, Android, and Huawei users.

Audit Pemantauan Kedua ISO 9001:2015

Second Surveillance Audit ISO 9001:2015

Bagi menambah baik Sistem Pengurusan Kualiti (SPK) ST dan memastikan proses kerja di ST memenuhi keperluan standard ISO 9001:2015, audit pemantauan telah dijalankan pada 7–10 Februari 2023.

Audit Pemantauan Kedua ISO 9001:2015 ini dijalankan di Ibu Pejabat dan dua (2) Pejabat Kawasan yang terpilih iaitu Pejabat Kawasan Selangor & Wilayah Persekutuan dan Pejabat Kawasan Pahang. Hasil Audit Pemantauan Kedua daripada pihak *Lloyds Register Quality Assurance* (LRQA) adalah memuaskan dan tiada ketidakpatuhan, membolehkan ST kekal dengan pensijilan ISO 9001:2015 sebelum menghadapi Audit Pensijilan Semula pada 2024.

Kejayaan ini menunjukkan pelaksanaan SPK di ST diiktiraf oleh badan pensijilan bertaraf antarabangsa, namun penambahbaikan yang berterusan akan terus dilaksanakan bagi memastikan perkhidmatan bertaraf global dan memenuhi kehendak pihak-pihak berkepentingan.

To enhance the Commission's Quality Management System (QMS) and ensure compliance with ISO 9001:2015 standards, a surveillance audit was conducted from 7–10 February 2023.

The Second Surveillance Audit of ISO 9001:2015 was carried out at the Head Office, and two selected Regional Offices: the Selangor & Federal Territory Regional Office and the Pahang Regional Office. The results of the Second Surveillance Audit by Lloyds Register Quality Assurance (LRQA) were satisfactory, with no non-conformities found, allowing the Commission to maintain its ISO 9001:2015 certification prior to facing a Recertification Audit in 2024.

This success demonstrates that the Commission's implementation of QMS is recognised by an international certification body. However, continuous improvements will continue to be implemented to ensure global standard services and meet stakeholder requirements.

Sorotan Utama

Main Highlights

Pelaksanaan Projek Transformasi Digital

Projek Transformasi Digital ST telah memasuki fasa kedua pembangunan sistem *Integrated Regulatory Information System* (iRIST), yang dimulakan pada sukuan ketiga 2023. Sepanjang 2023, aktiviti fasa kedua iaitu penyediaan dokumen Spesifikasi Keperluan Pengguna (URS) telah siap dan dipersetujui oleh pemilik proses ST. Dokumen Reka Bentuk Sistem (SDD) untuk pembangunan sistem iRIST melibatkan 18 modul iaitu daripada sektor elektrik, gas dan kecekapan tenaga juga telah diselesaikan.

Perkhidmatan dalam talian yang disediakan dalam sistem iRIST akan melibatkan pembangunan 18 modul sistem utama ST iaitu perkhidmatan dalam *Online Application System* (OAS), *Energy Commission Online System* (ECOS), Kecekapan Tenaga (Pengurus Tenaga Elektrik), Penguatkuasaan dan Siasatan, *Dashboard* Pelaporan iRIST dan aplikasi mudah alih. Antara aktiviti-aktiviti Projek Transformasi Digital ST yang dilaksanakan adalah tertumpu kepada semakan prototaip sistem mengikut modul berdasarkan URS, penyediaan data migrasi dan analisa serta penyediaan Diagram Reka Bentuk Pangkalan Data iRIST (ERD).

Kajian Kepuasan Pemegang Taruh (SSI) 2023

Sebagai komitmen berterusan ST dalam memastikan tahap kualiti dan perkhidmatan ST, Kajian Kepuasan Pemegang Taruh (SSI) ST 2023 dijalankan bagi mengukur tahap kepuasan pemegang taruh ST terhadap kualiti perkhidmatan yang disediakan.

SSI ini dijalankan pada September hingga November 2023, melibatkan 100 responden dari kalangan pemegang taruh. Pada Disember 2023, data lengkap yang diterima telah dianalisa.

Implementation of the Digital Transformation Project

The Commission's Digital Transformation Project has entered its second phase of developing the Integrated Regulatory Information System (iRIST), which commenced in the third quarter of 2023. Throughout 2023, activities for the second phase included the completion and approval of User Requirement Specifications (URS) documents by the Commission's process owners. The System Design Document (SDD) for the iRIST system development encompassed 18 modules covering the electricity and gas sectors, as well as energy efficiency.

The online services provided by the iRIST system will involve the development of these 18 main ST system modules, including the Online Application System (OAS), Energy Commission Online System (ECOS), Energy Efficiency (Electricity Manager), Enforcement and Investigation, iRIST Reporting Dashboard, and mobile applications. Project activities focused on prototype system reviews by module based on URS, data migration preparation and analysis, and the preparation of the iRIST Database Design Diagram (ERD).

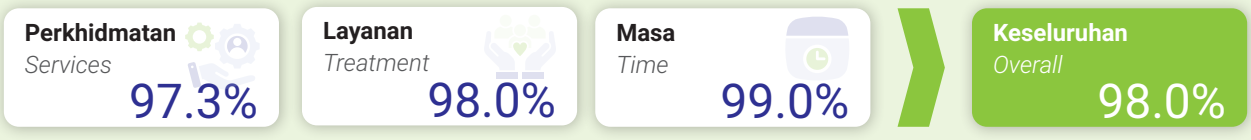
Stakeholder Satisfaction Survey (SSI) 2023

As part of the Commission's ongoing commitment in ensuring quality and service excellence, the Stakeholder Satisfaction Survey (SSI) for 2023 was conducted to assess the satisfaction level of the Commission's stakeholders with the quality of services provided.

The SSI was conducted from September to November 2023 and involved 100 respondents from among the Commission's stakeholders. By December 2023, the comprehensive data received had been analysed.

Tahap Kepuasan Pemegang Taruh, 2023

Stakeholder Satisfaction Level, 2023



Pengukuhan Kerjasama Antarabangsa

Sejajar dengan visi ST untuk menjadi badan kawal selia tenaga bertaraf dunia, komitmen dan penglibatan ST dalam program di peringkat antarabangsa dapat memperkasakan lagi imej dan kredibiliti ST.

Bagi 2023, pelbagai program kerjasama antarabangsa telah dilaksanakan, menunjukkan komitmen ST dalam industri tenaga secara holistik di peringkat antarabangsa.

Strengthening International Cooperation

Aligned with the Commission's vision to become a world-class energy regulator, the Commission's commitment and engagement in international programmes further enhance its image and credibility.

In 2023, various international cooperation programmes were implemented, demonstrating the Commission's holistic commitment to the energy industry on the global stage.

Program Kerjasama Antarabangsa, 2023
International Cooperation Programmes, 2023

Acara *Event*	**Tarikh** *Date*	**Tempat** *Location*	**Keterangan** *Description*
***14th ASEAN Energy Regulators' Network* (AERN)**	**24–26 Mei** *24–26 May*	**Luang Prabang, Lao PDR**	**Platform bagi perkongsian maklumat dalam bidang kawal selia pembekalan tenaga, jalinan kerjasama yang erat di kalangan badan kawal selia tenaga negara-negara ASEAN serta untuk menggalakkan kemampanan dan pembangunan ekonomi di rantau ASEAN.** *A platform for sharing information in the field of energy supply regulation, fostering close cooperation among ASEAN energy regulators, and promoting sustainability, as well as economic development in the ASEAN region.*
3rd ST-Energy Market Authority (EMA) Bilateral Dialogue	**13–16 Jun** *13–16 June*	**Langkawi, Malaysia**	**Platform perbincangan dua hala antara ST dan EMA Singapura yang diadakan dua (2) kali setahun. Platform ini ditubuhkan melalui Memorandum Persefahaman yang dimeterai oleh ST dan EMA pada 28 Oktober 2020.** *A bilateral discussion platform between the Commission and EMA Singapore held twice a year. This platform was established through a Memorandum of Understanding signed by the Commission and EMA on 28 October 2020.*
***41st ASEAN Senior Officials Meeting on Energy* (SOME)**	**19–23 Jun** *19–23 June*	**Jakarta, Indonesia**	**Mesyuarat peringkat pegawai-pegawai tinggi berkaitan tenaga ini bertindak sebagai jawatankuasa perundingan untuk mempromosi dan menyemak semula pelbagai aktiviti kerjasama dalam bidang tenaga yang dirangka dan dipersetujui oleh negara anggota ASEAN.** *The high-level energy officials meeting acts as a negotiation committee to promote and review various energy cooperation activities planned and agreed upon by ASEAN member countries.*
***41st ASEAN Ministers on Energy Meeting* (AMEM)**	**22–26 Ogos** *22–26 August*	**Bali, Indonesia**	**Platform peringkat menteri bagi membincangkan hala tuju pembangunan tenaga, khususnya berkenaan usaha peralihan tenaga di rantau ASEAN. Ia juga memberi peluang kepada semua negara anggota ASEAN bagi berkongsi pengalaman, polisi dan inisiatif, terutamanya bagi menggalakkan penggunaan tenaga boleh baharu (TBB) serta kelestarian tenaga.** *A ministerial-level platform to discuss the direction of energy development, particularly regarding energy transition efforts in the ASEAN region. It also provides an opportunity for all ASEAN member countries to share experiences, policies, and initiatives, especially in promoting the use of renewable energy (RE) and energy sustainability.*
***6th Asia Pacific Energy Regulatory* (APER) Forum**	**16–17 November**	**Shenzhen, China**	**Platform bagi badan-badan kawal selia tenaga di rantau Asia Pasifik untuk membincangkan isu-isu utama berkaitan tenaga dan bertukar-tukar maklumat mengenai amalan baik di negara masing-masing.** *A platform for energy regulators in the Asia-Pacific region to discuss key energy issues and exchange information on best practices in their respective countries.*

BrandLaureate BestBrands Award 2022-2023

ST telah terpilih sebagai penerima anugerah di *Brandlaureate BestBrands Award* 2022-2023 di bawah kategori *Nation's Pride – Energy Sector Regulation Excellence* oleh The World Brands Foundation berdasarkan prestasi dan pencapaiannya dalam memacu peralihan tenaga Malaysia ke arah sumber bersih dan TBB.

Penerimaan anugerah ini dinilai berdasarkan beberapa kriteria utama iaitu *brand performance, brand strategy, brand innovation, brand communication* dan *brand culture*. Ia termasuk:

- impak inisiatif yang dilaksanakan oleh ST dalam menyokong dasar-dasar Kerajaan
- strategi ST bagi mengukuh dan mengekalkan identiti serta penjenamaan ST
- kempen kesedaran keselamatan dan pembangunan mampan oleh ST
- peranan ST dalam memastikan peralihan yang lancar ke arah sumber tenaga bersih
- strategi komunikasi ST dalam mendidik dan menghebahkan kepada orang ramai berkaitan dengan isu-isu industri tenaga
- inisiatif ST dalam memupuk dan memperkukuhkan inklusiviti, kepelbagaian dan kemampanan di kalangan warga kerjanya.

Anugerah berprestij ini merupakan satu pengiktirafan terhadap usaha-usaha ST dalam mengawal selia dan memajukan sektor tenaga negara, dan merupakan pencapaian yang amat membanggakan buat seluruh warga ST.

BrandLaureate BestBrands Award 2022-2023

The Commission has been selected as the recipient of the BrandLaureate BestBrands Award 2022–2023 under the Nation's Pride – Energy Sector Regulation Excellence category by The World Brands Foundation, based on its performance and achievements in driving Malaysia's energy transition towards clean and RE sources.

The award recognition is evaluated based on several key criteria, including brand performance, brand strategy, brand innovation, brand communication, and brand culture. This includes:

- *the impact of initiatives implemented by the Commission in support of Government policies*
- *the Commission's strategies to strengthen and maintain its identity and branding*
- *awareness campaigns on safety and sustainable development by the Commission*
- *the Commission's role in ensuring a smooth transition towards clean energy sources*
- *the Commission's communication strategies to educate and inform the public on energy industry issues*
- *the Commission's initiatives to foster inclusivity, diversity, and sustainability among its workforce.*

This prestigious award is a recognition of the Commission's efforts in regulating and advancing the country's energy sector, and is a source of pride for all the Commission's members.



Anugerah dan Sijil *BrandLaureate BestBrands Award* 2022-2023
BrandLaureate BestBrands Award 2022–2023 Certificate and Award

7

Pembangunan Kapasiti dan Keupayaan

Capacity and Capability Building

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Mengoptimumkan Kapasiti Tenaga Kerja

Optimising the Workforce Capacity

Proses pengambilan untuk jawatan Eksekutif dan Bukan Eksekutif di ST dilaksanakan sepanjang tahun, bagi memastikan tenaga kerja yang optimum dalam memenuhi fungsi dan mandat ST, dan juga untuk membina rantaian bakat yang berterusan.

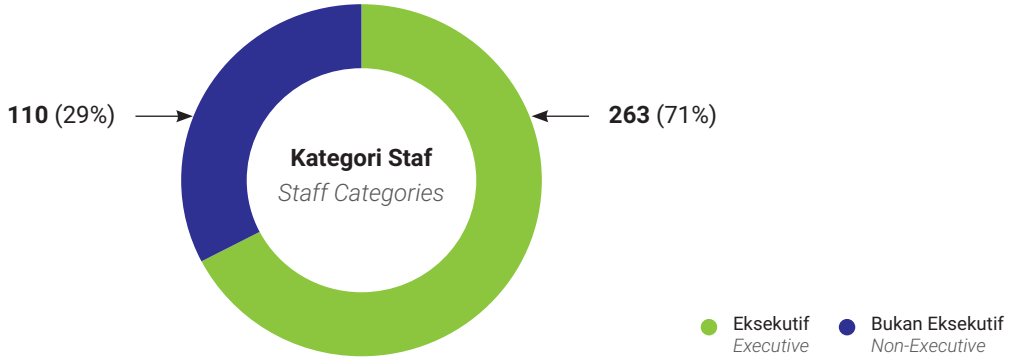
Untuk 2023, jumlah tenaga kerja ST ialah 383 orang, dengan 71% Eksekutif dan 29% lagi Bukan Eksekutif (kakitangan sokongan).

The recruitment process for Executives and Non-Executives positions at the Commission is carried out throughout the year to ensure an optimal workforce to fulfil the Commission's functions and mandates, as well as to build a cohesive talent pipeline.

Total complement for 2023 is 383, consist of 71% Executives and 29% Non-Executives (support staff).

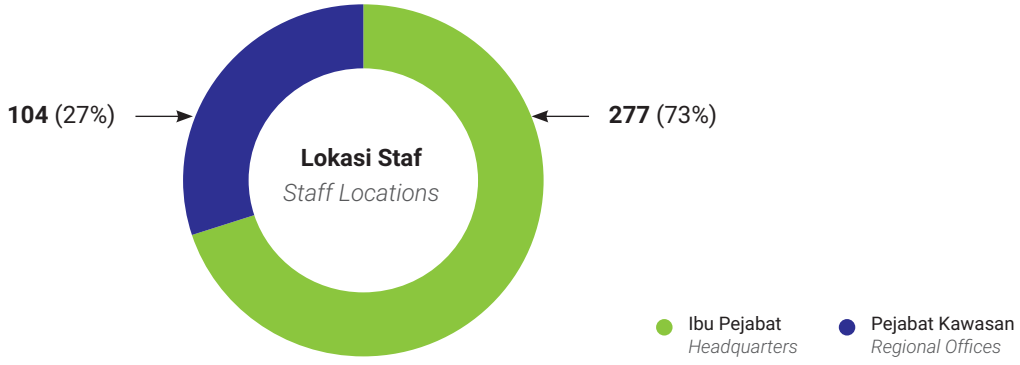
Pembahagian Warga Kerja Mengikut Kategori, 2023

Distribution of Workforce by Categories, 2023



Pembahagian Warga Kerja Mengikut Lokasi, 2023

Distribution of Workforce by Locations, 2023



Pada 2023, peluang kenaikan kerjaya terus diberikan kepada kakitangan yang berkelayakan, yang membuktikan ST sentiasa mengiktiraf dan memberi ganjaran kepada prestasi yang cemerlang. Seramai 16 Eksekutif dan lima (5) Bukan Eksekutif telah dinilai dan dinaikkan pangkat ke gred yang lebih tinggi dan sepadan dengan gaji yang sesuai.

Selain itu, ST juga melantik lapan (8) Pakar Teknikal daripada industri sebagai pakar rujukan dalam pelbagai bidang teknikal seperti perancangan dan penjanaan kuasa, penetapan harga tenaga, keperluan undang-undang kawal selia, pendigitalan dan juga kecekapan dalaman dan perekayasaan proses kerja. Langkah ini secara tidak langsung boleh meningkatkan keupayaan dalaman apabila pemindahan pengetahuan secara bimbingan dan tunjuk ajar berlaku di antara pakar-pakar tersebut dengan kakitangan ST.

In 2023, career progression opportunities continued to be extended to qualified staff, which proved that ST is always recognising and rewarding excellent performance. A total of 16 Executives and five (5) Non-Executives were assessed and promoted to higher grades commensurate with relevant pay.

In addition, the Commission also appointed eight (8) Technical Experts from the industry as reference experts in various technical fields, including power planning and generation, energy pricing, regulatory legal requirements, digitisation, and internal efficiency and re-engineering in work processes. This measure indirectly enhance internal capabilities when knowledge transfer through coaching and mentoring occurs between the experts and the Commission's staff.

Aktiviti Utama Sepanjang Tahun
Main Activities Throughout the Year



Pembangunan sistem dan kaedah Penilaian Prestasi Kakitangan yang lebih objektif dengan menggunakan kaedah penilaian 360 darjah siap dibangunkan dan sedia untuk digunakan mulai Januari 2024.
Development of a more objective Employee Performance Evaluation System using the 360-degree assessment method is completed and ready for implementation starting January 2024.



Penambahbaikan keupayaan bagi menangani perubahan ke arah digitalisasi termasuk:
Enhancement of capabilities to handle the shift towards digitisation including:

- Pembangunan Pelan Transformasi Organisasi (OTP).
  Development of the Organisational Transformation Plan (OTP).
- Penubuhan Unit *ST Operating Centre* (STOC) bagi menyokong Transformasi Digital ST.
  Establishment of the ST Operating Centre (STOC) unit to support the Commission's Digital Transformation.
- Pengisian kakitangan bagi mengendalikan sistem digital ST iaitu *Integrated Regulatory Information System* (iRIST) dan penempatan ke STOC.
  Staffing to manage the Commission's digital system, namely Integrated Regulatory Information System (iRIST), and placement into STOC.



Pelaksanaan Kajian Pelan Keperluan Tenaga Kerja untuk mengenal pasti bilangan optimum kakitangan yang diperlukan untuk mendukung inisiatif Peralihan Tenaga.
Implementation of Workforce Requirement Plan Study to identify the optimal number of staff required to support the Energy Transition initiatives.



Pelaksanaan penambahbaikan Rangka Kerja Pelan Penggantian bagi jawatan-jawatan utama dan kritikal di ST serta program-program pembangunan keupayaan kepimpinan bagi pegawai-pegawai yang dikenal pasti.
Implementation of the Succession Planning Framework improvement for key and critical positions and leadership development programmes for identified officers.

Pengukuhan Keupayaan Kakitangan

Strengthening the Employee Capability

Ke arah menjadi badan kawal selia sektor tenaga bertaraf dunia, serta bagi menyokong *National Energy Transition Roadmap* (NETR) yang diumumkan oleh Kerajaan, ST terus membangunkan keupayaan warga kerjanya dengan pengetahuan terkini dan kemahiran dalam pelbagai bidang.

ST menetapkan setiap kakitangan perlu menjalani latihan dan pembangunan sebagai sebahagian daripada pembangunan profesional masing-masing, iaitu minimum tujuh (7) hari setiap tahun bagi kakitangan Eksekutif dan empat (4) hari setiap tahun bagi kakitangan Bukan Eksekutif.

Program-program pembangunan dalaman seperti kursus kepimpinan, kursus kemahiran berkomunikasi dan lain-lain bidang kemahiran juga diteruskan, di mana sebanyak 224 kursus telah dilaksanakan termasuk sesi *Coaching and Mentoring* oleh *Subject Matter Experts* di ST. Tujuh (7) Program *Industry Familiarisation* bersama pemain industri seperti Tenaga Nasional Berhad (TNB), PETRONAS dan Gas Malaysia turut dilaksanakan.

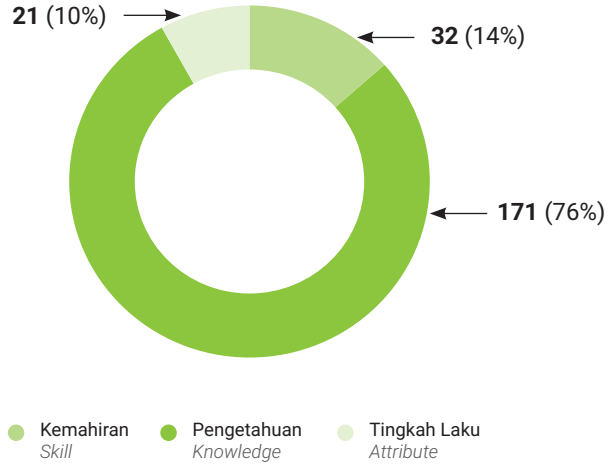
Towards becoming a world-class energy regulator and supporting the National Energy Transition Roadmap (NETR) announced by the Government, the Commission continues to develop the capabilities of its workforce with the latest knowledge and skills in various fields.

The Commission requires that each employee undergo training and development as part of their professional development, which includes a minimum of seven (7) days per year for Executives and four (4) days per year for Non Executives.

Internal development programmes such as leadership, communication skills and other areas are also continued, with a total of 224 courses implemented including Coaching and Mentoring sessions by the Commission's Subject Matter Experts. Seven (7) Industry Familiarisation Programmes with industry players such as Tenaga Nasional Berhad (TNB), PETRONAS, and Gas Malaysia were also conducted.

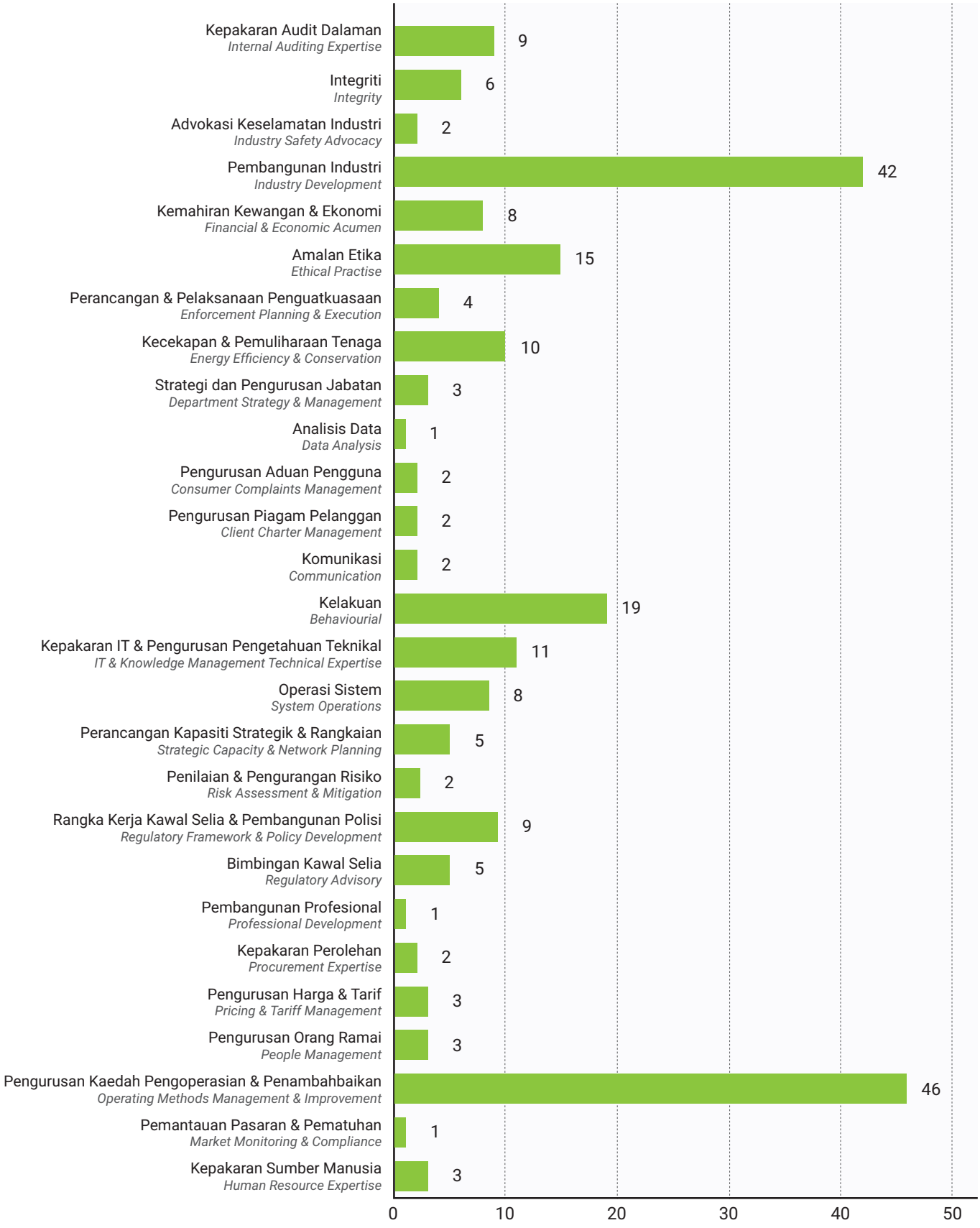
Jumlah Kursus Berasaskan Kemahiran, Pengetahuan dan Tingkah Laku, 2023

Number of Training Based on Skill, Knowledge and Attribute, 2023



Jumlah Kursus Berasaskan Kemahiran, Pengetahuan dan Tingkah Laku, 2023

Number of Training Based on Skill, Knowledge and Attribute, 2023



Bagi mengekalkan standard kecemerlangan yang tinggi, ST terus menggalakkan kakitangannya melanjutkan pelajaran ke peringkat yang lebih tinggi, dengan pemberian biasiswa dalam bidang-bidang berkaitan fungsi ST. Sehingga 2023, 20 kakitangan telah dianugerahkan dengan biasiswa ST dengan kos sebanyak RM402,601.00.

Selain itu, ST juga menyokong usaha kakitangannya untuk mendapatkan Pensijilan Professional seperti *Professional Engineer* (Ir) dan *Professional Technologist* (Ts) dengan membiayai kos pendaftaran dan fi ujian bagi bagi kelayakan-kelayakan ini. Sehingga kini, seramai 42 kakitangan ST telah mendapat pensijilan di dalam bidang-bidang professional ini.

To maintain a high standard of excellence, the Commission continues to encourage its employees to pursue higher education by providing scholarships in fields related to the Commission's functions. As of 2023, 20 employees have been awarded the Commission's scholarships totalling RM402,601.00.

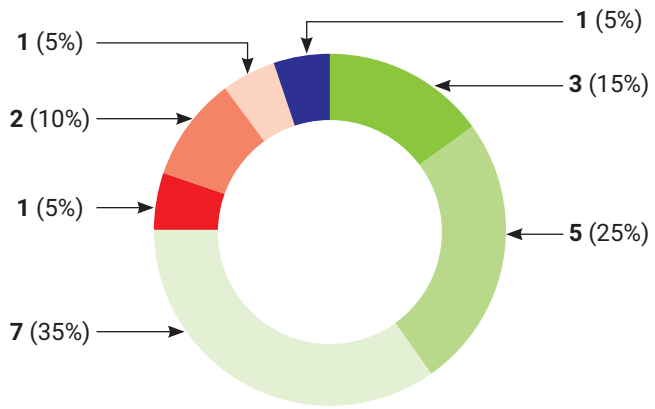
Additionally, the Commission supports its employees' efforts to obtain Professional Certifications such as Professional Engineer (Ir) and Professional Technologist (Ts) by funding the registration and examination fees for these qualifications. To date, a total of 42 employees of the Commission have obtained certifications in these professional fields.

Pemberian Biasiswa Mengikut Bidang Pengajian, Sehingga 2023

Scholarships Awarded by Field of Study, as of 2023

Bilangan Penerima Biasiswa

Number of Scholarship Receivers



- Sarjana Pentadbiran Perniagaan
  Master of Business Administration
- Sarjana Kejuruteraan Elektrik
  Master of Electrical Engineering
- Sarjana Sains (Pengurusan Tenaga)
  Master of Science (Energy Management)
- Sarjana Komunikasi Massa
  Master of Mass Communication
- Sarjana Sains (Profesional)
  Master of Science (Professional)
- Sarjana (Pengurusan Risiko Keselamatan dan Kesihatan Pekerjaan)
  Master of Occupational Safety & Health Risk Management
- PhD Kejuruteraan Elektrik dan Elektronik
  PhD in Electrical and Electronic Engineering

Program Kesedaran Undang-undang

Legal Awareness Programme

Bagi meningkatkan kefahaman undang-undang pembekalan tenaga di kalangan warga ST serta memberikan kesedaran berkenaan risiko-risiko perundangan yang dihadapi dalam menjalankan tugas, beberapa program telah diatur untuk meningkatkan kompetensi pegawai, selain memastikan warga ST menjalankan tugas selaras dengan peruntukan undang-undang serta mendalami isu-isu perundangan yang dihadapi warga-warga ST termasuklah di pejabat-pejabat kawasan ST.

To enhance the understanding of energy supply laws among the Commission's employees and raise awareness of legal risks encountered in carrying out duties, several programmes have been organised to enhance the competencies of officers. This ensures that the Commission's employees perform their duties in accordance with legal provisions and delve into legal issues faced by the Commission's employees, including those at the Commission's regional offices.

Program Kesedaran Undang-Undang, 2023
Legal Awareness Programme, 2023

Sesi Perkongsian Ilmu
Knowledge Sharing Sessions

- Perundangan Subsidiari di Bawah Akta Bekalan Elektrik 1990 [Akta 447]
  Subsidiary Legislation under the Electricity Supply Act 1990 [Act 447]
- Perbandingan Kes Sivil dan Kes Jenayah di Malaysia
  Comparison of Civil and Criminal Cases in Malaysia
- Undang-undang Fitnah di Malaysia
  Defamation Law in Malaysia



Lawatan Teknikal Jabatan Undang-Undang ST
The Commission Legal Department Technical Visits

- Stesen Jana Kuasa Putrajaya
  Putrajaya Power Station
- Stesen Jana Kuasa Cameron Highlands
  Cameron Highlands Power Station

Sesi Damping Pejabat Kawasan
Regional Office Visits

- Pejabat Kawasan Negeri Kelantan dan Terengganu
  Kelantan and Terengganu State Regional Offices

Sorotan Utama

Main Highlights

Analisis Data Sektor Tenaga

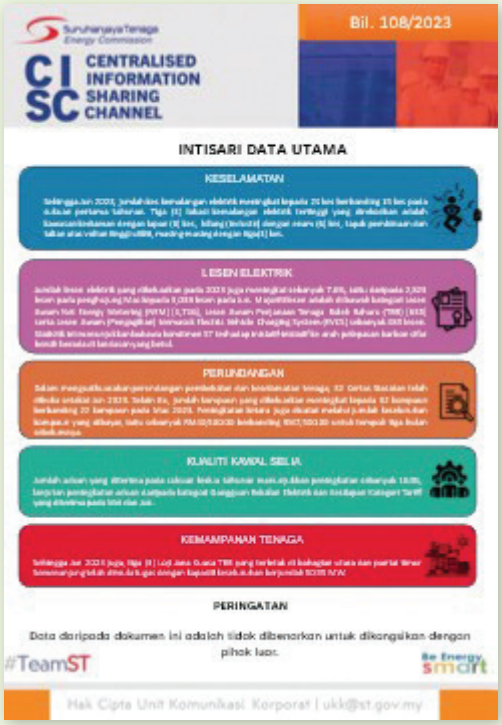
Bagi memastikan setiap warga kerja ST sentiasa cakna dengan maklumat dan perkembangan semasa industri tenaga, satu hebahan data ringkas dalam bentuk *Key Fact Sheet* dikeluarkan setiap suku tahunan. Antara data yang terkandung dalam *Key Fact Sheet* tersebut termasuk kes-kes kemalangan elektrik dan gas, jumlah lesen, jumlah tenaga, permintaan maksimum, jumlah aduan dan loji jana kuasa yang dimula tugas. *Key Fact Sheet* ini bertujuan membantu Anggota ST, pihak pengurusan dan semua warga kerja ST untuk menilai, mempertimbangkan dan membuat keputusan terbaik dengan sokongan data ringkas terkini dalam dokumen tersebut.

Untuk 2023, satu inisiatif baharu dilaksanakan di mana satu analisis turut dikeluarkan bersama *Key Fact Sheet* tersebut. Analisis ini membolehkan warga kerja ST melihat perubahan utama dalam sektor tenaga, meneliti perbandingan situasi semasa dengan situasi terdahulu, serta memahami punca-punca peningkatan atau penurunan data.

Energy Sector Data Analysis

To ensure that every employee of the Commission stays informed about the latest information and developments in the energy industry, a brief data dissemination in the form of a Key Fact Sheet is issued every quarter. Among the data contained in this Key Fact Sheet are cases of electrical and gas accidents, the number of licences, total energy, maximum demand, complaint counts, and power plants that have commenced operations. The purpose of this Key Fact Sheet is to assist the Commission Members, management and all the Commission employees in evaluating, considering, and making informed decisions supported by the latest concise data in the document.

For 2023, a new initiative has been carried out, where an analysis is also issued along with the Key Fact Sheet. This analysis allows the Commission's employees to observe major changes in the energy sector, examine the comparison between the current and previous situations, and understand the causes of increased or decreased data.



Perkongsian Maklumat Melalui *Centralised Information Sharing Channel* (CISC)

CISC merupakan sebuah platform perkongsian maklumat di kalangan warga kerja ST, dengan memfokuskan kejayaan, pencapaian dan hasil program atau aktiviti yang dilaksanakan terutama perkara-perkara yang melibatkan keputusan atau arah tuju ST. Platform ini juga membantu memastikan warga kerja ST untuk sentiasa melibatkan diri, peka dan menyokong perkembangan serta aktiviti yang berlaku di ST dan sektor tenaga secara amnya.

Pada 2023, sebanyak 239 hebahan CISC dikeluarkan, mencerminkan keaktifan dan kesungguhan warga kerja ST dalam berkongsi pengetahuan dan pengalaman, serta memberikan sumbangan kepada pembangunan dan kemajuan ST. Selain dihebahkan menerusi e-mel, ia juga dimuat naik ke aplikasi media sosial *#TeamST* bagi memperluaskan jaringan komunikasi pelbagai medium.

Sharing Information via the Centralised Information Sharing Channel (CISC)

CISC is a platform for information sharing among the Commission's employees, focusing on the successes, achievements and outcomes of programmes or activities implemented, especially those involving the Commission's decisions or directions. This platform also helps in ensuring that the Commission's employees are always engaged, aware, and supportive of developments and activities within the Commission and the energy sector in general.

In 2023, a total of 239 CISC announcements were issued, reflecting the active participation and commitment of the Commission's employees in sharing knowledge and experiences, as well as contributing to the development and progress of the Commission. In addition to being disseminated via email, it was also uploaded to the #TeamST social media application to expand communication networks across various mediums.

2022

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Inisiatif *Outreach*

Outreach Initiatives

191 **Kempen #Jadilah Bijak Tenaga**
#Be Energy Smart Campaign

196 **Program *Touchpoint***
Touchpoint Programme

199 **Penerbitan Industri Tenaga**
Energy Industry Publications



Kempen #Jadilah Bijak Tenaga

#Be Energy Smart Campaign

Kempen #Jadilah Bijak Tenaga diteruskan pada 2023 melalui pengiklanan papan iklan statik dan gegantung digital yang dilaksanakan bersempena Kempen Kelestarian dan Kecekapan Tenaga di bawah Kementerian Sumber Asli, Alam Sekitar dan Perubahan Iklim (NRECC).

Kempen yang dilaksanakan melalui Yayasan Hijau Malaysia dengan kerjasama Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) ini menggunakan konsep 'Pesan Mak', yang dipilih kerana ia lebih dekat di hati pengguna, mampu menarik perhatian serta menimbulkan perasaan nostalgia. Konsep ini juga berupaya menyentuh hati pengguna dengan penggunaan imej ikon emak di papan-papan iklan tersebut. Mesej yang digunakan adalah ringkas, mudah difahami, praktikal dan mudah diingati, mengenai langkah-langkah penjimatan tenaga tanpa melibatkan kos.

Sebagai usaha untuk menjadi lebih dekat dengan rakyat di setiap negeri, teks mesej di papan-papan iklan juga diolah mengikut loghat atau dialek tempatan. Kempen ini turut diuar-uarkan dalam rancangan Selamat Pagi Malaysia (Nadi Seri Pagi) di saluran TV1 pada 4 Disember 2023.

Konsep 'Pesan Mak' di papan-papan iklan ini terbukti berkesan dan berjaya mendapat maklum balas positif daripada orang awam sejak pelaksanaan kempen ini pada Oktober 2023. Ia turut menjadi tular di beberapa saluran media sosial terutama Tiktok, Instagram, Facebook dan juga di Twitter atau X.

The #Be Energy Smart Campaign continued in 2023 by implementing static billboard advertising and digital bunting, which was carried out in conjunction with the Sustainability and Energy Efficiency Campaign under the Ministry of Natural Resources, Environment and Climate Change (NRECC).

Implemented by the Yayasan Hijau Malaysia in collaboration with the Sustainable Energy Development Authority (SEDA), the campaign utilised the 'Mother's Advice' concept, which was chosen because it is closer to the hearts of consumers, able to attract attention and evoke feelings of nostalgia. This concept is also capable of touching consumers' hearts by using images of mother icons on the billboards. The message used was concise, easy to understand, practical and memorable, focusing on no-cost energy-saving measures.

In an effort to connect with people in each state, the message texts on the billboards were also tailored to local accents or dialects. The campaign was also publicised on the Selamat Pagi Malaysia (Nadi Seri Pagi) programme on TV1 on 4 December 2023.

The 'Mother's Advice' concept on these billboards was proven effective and has successfully received positive feedback from the public since the implementation of this campaign in October 2023. It has also gone viral on several social media channels, especially TikTok, Instagram, Facebook and also on Twitter or X.





Sesi Temu Bual Media

Sepanjang 2023, ST terus aktif menjalankan sesi temu bual radio dan rancangan TV melalui saluran BERNAMA Radio, rancangan Selamat Pagi Malaysia dan Tanya Terus di TV1 serta Biz Malaysia di RTM dan Malaysia Hari Ini (MHI) di TV3.

Topik am keselamatan elektrik termasuk Tips Ketika Musim Perayaan, Kecekapan Tenaga dan Keperluan Pematuhan Lantikan Kontraktor Berdaftar ST merupakan topik yang dibicarakan sepanjang tahun. Selain itu, topik berkenaan tarif elektrik, Program Tenaga Hijau Korporat (CGPP) dan Akta Kecekapan dan Pemuliharaan Tenaga (EECA) turut dikupas secara menyeluruh.

Antara perkara lain yang dibincangkan termasuk promosi berkenaan program-program ST serta pengiktirafan yang diterima oleh ST pada 2023.

Media Interviews

Throughout 2023, the Commission remained active in conducting radio and TV programmes interviews through BERNAMA Radio, Selamat Pagi Malaysia and Tanya Terus programmes on TV1, as well as Biz Malaysia on RTM and Malaysia Hari Ini (MHI) on TV3.

General topics on electrical safety, including Tips During Festive Seasons, Energy Efficiency and Compliance Requirements for the Commission's Registered Contractors were discussed throughout the year. Additionally, topics such as electricity tariffs, the Corporate Green Power Purchase Programme (CGPP) and the Energy Efficiency and Conservation Act (EECA) were thoroughly explored.

Other topics of discussion included promotions related to the Commission's programmes and the recognitions received by the Commission in 2023.



20 April – ST ditemu bual mengenai kepentingan mengutamakan keselamatan elektrik dan gas berpaip di musim perayaan di saluran BERNAMA Radio.

20 April – The Commission was interviewed on the importance of prioritising electrical and piped gas safety during festive seasons on BERNAMA Radio.



5 Mei – ST ditemu bual secara dalam talian di rancangan Biz Malaysia, RTM untuk mengupas berkenaan CGPP iaitu usaha Kerajaan dalam menyokong komitmen Alam Sekitar, Sosial, dan Tadbir Urus (ESG) Korporat.

5 May – The Commission was interviewed online on the Biz Malaysia programme, RTM, to discuss CGPP, which is the Government's effort to support Corporate Environmental, Social, and Governance (ESG) commitments.



23 Jun – ST ditemu bual secara langsung untuk topik Rasionalisasi Tarif Elektrik di rancangan Tanya Terus di saluran TV1, RTM.

23 June – The Commission was interviewed live on the Rationalisation of Electricity Tariffs topic on the Tanya Terus programme on TV1, RTM.



7 Julai – ST ditemu bual di rancangan Selamat Pagi Malaysia, RTM mengenai Penggunaan Tenaga Secara Cekap serta bagi mempromosikan program *EE Challenge* 2023.

7 July –The Commission was interviewed on the Selamat Pagi Malaysia programme, RTM, regarding Efficient Use of Energy as well as promoting the EE Challenge 2023 programme.



11 September – ST ditemu bual di rancangan Selamat Pagi Malaysia, RTM sempena penganugerahan *BrandLaureate Bestbrands* 2022-2023 buat julung kalinya.

11 September – The Commission was interviewed on the Selamat Pagi Malaysia programme, RTM, in conjunction with the inaugural BrandLaureate Bestbrands 2022-2023 award.



16 Oktober – ST ditemu bual di rancangan Selamat Pagi Malaysia, RTM berkenaan kepentingan melantik kontraktor yang berdaftar dengan ST.

16 October – The Commission was interviewed on the Selamat Pagi Malaysia programme, RTM, about the importance of appointing the Commission's registered contractors.



24 Oktober – ST ditemu bual di BERNAMA Radio untuk mengupas berkenaan Akta Kecekapan dan Pemuliharaan Tenaga (EECA).

24 October – The Commission was interviewed on BERNAMA Radio to discuss the Energy Efficiency and Conservation Act (EECA).



29 November – ST sekali lagi ditemu bual di rancangan MHI, TV3 berkenaan EECA, yang merupakan salah satu usaha kerajaan ke arah pelepasan gas rumah hijau bersih sifar.

29 November – The Commission was interviewed again on the MHI program, TV3, regarding the EECA, which is one of the Government's efforts towards achieving net-zero greenhouse gas emission.



4 Disember – ST ditemu bual di rancangan Selamat Pagi Malaysia, RTM berkenaan inisiatif kelestarian dan kecekapan tenaga serta mengenai kempen 'Pesan Mak' bersama Yayasan Hijau Malaysia.

4 December – The Commission was interviewed on the Selamat Pagi Malaysia programme, RTM, regarding energy sustainability and efficiency initiatives, as well as the 'Mother's Advice' campaign with the Yayasan Hijau Malaysia.

Reruai Pameran

Bagi mendekati orang ramai dalam menyampaikan maklumat dan pengetahuan mengenai sektor tenaga, ST turut menyertai beberapa reruai pameran yang dianjurkan oleh kementerian atau agensi yang berkenaan. Ia juga merupakan medan bagi mempromosikan peranan ST sebagai badan kawal selia sektor tenaga negara, sekali gus meningkatkan kesedaran orang ramai terhadap tugas dan tanggungjawab ST.

Exhibition Booths

To reach out to the public and disseminate information and knowledge about the energy sector, the Commission also participated in several exhibition booths organised by relevant ministries or agencies. These exhibitions provided a platform to promote the Commission's role as the regulatory body for the nation's energy sector, thereby increasing public awareness of the Commission's duties and responsibilities.

Reruai Pameran ST, 2023

The Commission's Exhibition Booths, 2023

Tarikh *Date*	Acara *Event*	Lokasi *Location*
11–12 Mei 2023 *11–12 May 2023*	**Karnival Alam Kita**	**Kota Bharu, Kelantan**
17–18 Mei 2023 *17–18 May 2023*	***Trenchless* Asia**	**Kuala Lumpur**
26–28 Jun 2023 *26–28 June 2023*	***Energy Asia***	**Kuala Lumpur**
28–29 Ogos 2023 *28–29 August 2023*	***Energy Transition Conference***	**Kuala Lumpur**
6–8 September 2023 *6–8 September 2023*	***IEM-JSM-ST Asean Electrotechnical Symposium & Exhibition 2023***	**Kuala Lumpur**
13 September 2023 *13 September 2023*	**Program Naratif Ekonomi Madani dan Dialog Belanjawan 2024 Peringkat NRECC**	**Kuala Lumpur**
4–6 Oktober 2023 *4–6 October 2023*	***International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) & International Electric Mobility Showcase (IEMS)***	**Kuala Lumpur**
10–11 Oktober 2023 *10–11 October 2023*	***TVET Hub & Industrial Engagement 2023***	**Perak**









Program *Touchpoint*

Touchpoint Programme

Program Touchpoint merupakan sebahagian daripada inisiatif Tanggungjawab Sosial Korporat (CSR) ST yang mula dijalankan sejak 2013. Ia bertujuan untuk meningkatkan kesedaran orang awam tentang keselamatan elektrik, di samping membantu golongan yang tidak berkemampuan memastikan pendawaian elektrik di premis yang mereka duduki mematuhi standard yang ditetapkan dan berada dalam keadaan selamat serta berfungsi dengan baik. Di samping itu, ia juga bertujuan memupuk kesedaran pelbagai peringkat lapisan masyarakat mengenai keselamatan elektrik serta memastikan tiada golongan yang terpinggir daripada maklumat mengenai aspek-aspek keselamatan yang perlu dititikberatkan, bagi mengelakkan kes-kes kemalangan elektrik yang tidak diingini.

Sehingga 31 Disember 2023, ST telah menjalankan program Touchpoint di 42 buah premis di Semenanjung dan Sabah. Premis-premis ini termasuk rumah kediaman, surau, sekolah agama/tahfiz, dan balai raya. Antara kerja-kerja yang dilaksanakan adalah:

- Penukaran kotak agihan elektrik yang baru.
- Pemasangan peranti arus baki (PAB) yang menepati kehendak Peraturan-peraturan Elektrik 1994.
- Ujian pembumian dan pemutus litar elektrik.
- Kerja-kerja penambahbaikan meliputi penyusunan litar agihan mengikut kesesuaian dan kapasiti beban bagi mengelakkan berlakunya kejadian pelantikan bekalan elektrik yang berpunca daripada lebihan beban.
- Penggantian kelengkapan elektrik seperti lampu LED dan kipas kepada yang lebih cekap tenaga.

Selain itu, melalui program ini, ST dapat berinteraksi dengan masyarakat secara lebih dekat untuk memberikan kesedaran tentang keselamatan elektrik termasuk untuk memilih kelengkapan elektrik yang mempunyai label ST-SIRIM dan label cekap tenaga, menguji PAB sekurang-kurangnya sekali sebulan serta mendapatkan perkhidmatan kontraktor elektrik yang berdaftar dengan ST untuk sebarang kerja pemeriksaan atau pendawaian elektrik di rumah.

The Touchpoint programme is part of the Commission's Corporate Social Responsibility (CSR) initiative, which has been implemented since 2013. It aims to increase public awareness of the importance of electrical safety, as well as assist disadvantaged groups in ensuring that the electrical wiring in their premises complies with established standards, operates safely and functions effectively. In addition, it also aims to foster awareness across various levels of society about electrical safety, to ensure that no one is left out of critical safety information, thereby preventing unwanted electrical accident cases.

As of 31 December 2023, the Commission has implemented the Touchpoint programme in 42 premises across the Peninsula and Sabah. These premises include residential homes, suraus, religious schools and community halls. Some of the activities carried out include:

- *Replacement of new electrical distribution boxes.*
- *Installation of residual current devices (RCDs) compliant with the Electrical Regulations 1994.*
- *Grounding and circuit breaker testing.*
- *Improvement works, encompassing the rearrangement of distribution circuits according to suitability and load capacity to prevent incidents of electrical supply failure due to overload.*
- *Replacement of electrical appliances such as LED lights and fans with more energy-efficient ones.*

Through this programme, the Commission engages closely with the community to raise awareness about electrical safety, including to choose electrical appliances bearing the ST-SIRIM label and energy-efficient labels, conduct RCD testing at least once a month, and engage registered electrical contractors for any inspection or electrical wiring work at home.

Lokasi dan Aktiviti Program *Touchpoint*, 2023

Touchpoint Programmes Locations and Activities, 2023

Lokasi *Location*	Aktiviti *Activities*
16 buah rumah orang kurang berkemampuan di Kg. Pamaguan, Sandakan *16 underprivileged homes in Kg. Pamaguan, Sandakan*	**Pembaikan dan pemasangan sistem pendawaian baharu serta kelengkapan cekap tenaga** *Repair and installation of new wiring systems and energy-efficient appliances*
Surau Kg. Pamaguan, Sandakan *Surau Kg. Pamaguan, Sandakan*	
Empat (4) buah rumah orang kurang berkemampuan di Kg. Melayu, Padang Besar, Perlis *Four (4) underprivileged homes in Kg. Melayu, Padang Besar, Perlis*	
Empat (4) buah rumah orang kurang berkemampuan di Kg. Kolam, Padang Besar, Perlis *Four (4) underprivileged homes in Kg. Kolam, Padang Besar, Perlis*	
Empat (4) buah rumah orang kurang berkemampuan di Kg. Batu 20, Padang Besar, Perlis *Four (4) underprivileged homes in Kg. Batu 20, Padang Besar, Perlis*	
Surau Ar-Rahman, Bagan Serai, Perak *Surau Ar-Rahman, Bagan Serai, Perak*	**Penggantian PAB, pembaikan sistem pendawaian sedia ada, penggantian dan pemasangan kelengkapan elektrik cekap tenaga** *Replacement of RCD, repair of existing wiring systems, replacement and installation of energy-efficient electrical appliances*
Surau Nurul Iman, Bagan Serai, Perak *Surau Nurul Iman, Bagan Serai, Perak*	
Sekolah Rendah Agama Rakyat Nur Hidayah, Parit Buntar, Perak *Sekolah Rendah Agama Rakyat Nur Hidayah, Parit Buntar, Perak*	
Empat (4) buah rumah orang kurang berkemampuan atau penghidap penyakit kronik di Kg. Bukit Senggeh, Selandar, Melaka *Four (4) underprivileged homes or individuals with chronic illnesses in Kg. Bukit Senggeh, Selandar, Melaka*	**Pemasangan sistem pendawaian baru dan penggantian beberapa kelengkapan elektrik serta pembaikan sistem pembumian** *Installation of new wiring systems and replacement of several electrical appliances, as well as repair of grounding systems*
Balai raya Kg. Bukit Senggeh, Selandar, Melaka *Balai raya Kg. Bukit Senggeh, Selandar, Melaka*	**Pemasangan sistem pendawaian baru dan penggantian beberapa kelengkapan elektrik cekap tenaga** *Installation of new wiring systems and replacement of several energy-efficient electrical appliances*
Maahad Tahfiz Ummul Qura Lilbanat (Perempuan), Permatang Perawan, Pekan, Pahang *Maahad Tahfiz Ummul Qura Lilbanat (Perempuan), Permatang Perawan, Pekan, Pahang*	**Penggantian kelengkapan elektrik cekap tenaga** *Replacement of energy-efficient electrical appliances*
Maahad Tahfiz Al Quran At Taufiq, Kg. Kelat Rendang, Pekan, Pahang *Maahad Tahfiz Al Furqan Lilbanat, Kg. Parit, Pekan, Pahang*	
Maahad Tahfiz Al Furqan Lilbanat, Kg. Parit, Pekan, Pahang *Maahad Tahfiz Al Furqan Lilbanat, Kg. Parit, Pekan, Pahang*	**Pendawaian semula** *Rewiring*
Surau Kg. Jalan Tegak, Kg. Beruas, Pekan, Pahang *Surau Kg. Jalan Tegak, Kg. Beruas, Pekan, Pahang*	
Surau Sekukuk, Tg. Agas, Pekan, Pahang *Surau Sekukuk, Tg. Agas, Pekan, Pahang*	











Program *Touchpoint*

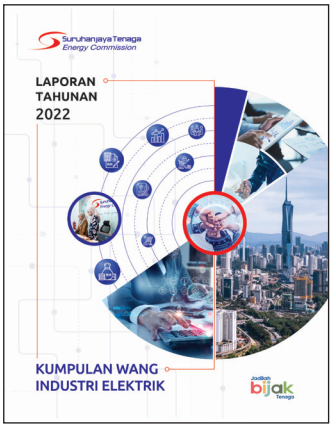
Penerbitan Industri Tenaga

Energy Industry Publications

Maklumat berkaitan sektor tenaga turut disalurkan melalui pelbagai penerbitan seperti laporan pencapaian dan pelan pembangunan di ST, termasuk maklumat landskap industri tenaga negara, serantau dan juga global.

Information related to the energy sector was also channelled through various publications, including the Commission's achievement reports and development plans. It also encompasses information regarding the national, regional and global energy industry landscape.





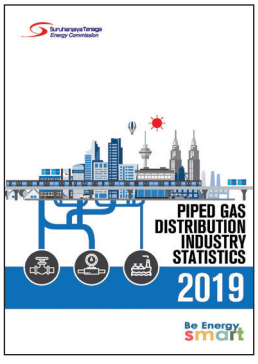
Laporan Tahunan 2022 dan
Laporan Kumpulan Wang Industri Elektrik 2022

Annual Report 2022 and Electricity Industry Fund (KWIE) Report 2022



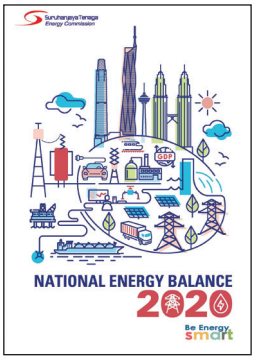
***Coffee Table Book* Sebagai Cenderahati Korporat**

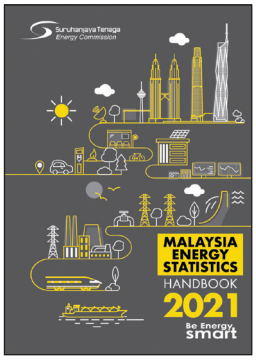
Coffee Table Book as Corporate Gift











Maklumat dan Statistik Sektor Tenaga

Energy Sector Information and Statistics



Garis Panduan Industri Elektrik dan Gas Berpaip

Electricity and Piped Gas Industry Guidelines



Rujukan Dalaman

Internal Reference



Memorabilia *#TeamST*

Memorabilia #TeamST

Energy Malaysia

Energy Malaysia

ST turut mempromosikan penerbitan terbaharu di dalam media sosial seperti Facebook, Instagram dan X (Twitter) dengan memuat naik poster berserta kapsyen dan tanda pagar #STenagaPublications, untuk memudahkan para pembaca merujuk dan memuat turun penerbitan terbaharu daripada laman web ST.

The Commission also promotes its latest publications on social media platforms such as Facebook, Instagram, and X (Twitter) by uploading posters along with captions and the hashtag #STenagaPublications, to facilitate readers in referencing and downloading the latest publications from the Commission's website.





Di samping itu, majalah Energy Malaysia, iaitu majalah industri tenaga yang diterbitkan oleh ST, turut mendapat perhatian media tempatan, The Sun, di mana artikel yang diterbitkan di dalam majalah berkenaan diadaptasi dan diterbitkan semula oleh akhbar berkenaan. Melalui kerjasama ini, artikel Energy Malaysia yang sarat dengan maklumat industri dapat disebarkan kepada khalayak yang lebih luas, sekali gus memupuk lebih kefahaman dan kesedaran mengenai industri tenaga dan fungsi pengawalseliaan ST.

In addition, Energy Malaysia magazine, an energy industry publication by the Commission, has also garnered attention from the local media, The Sun, where articles published in the magazine are adapted and republished by the newspaper. Through this collaboration, the information-rich articles in Energy Malaysia can be disseminated to a broader audience, thereby fostering greater understanding and awareness of the energy industry and the Commission's regulatory role.



Home rooftop solar energy system – a reality check

Suruhanjaya Tenaga
Energy Commission

MALAYSIA has been actively promoting rooftop solar generation since 2005, with various legislation and incentive schemes.

It began with the launch of the Building Integrated Photovoltaic (BIPV) programme in 2005 to increase the uptake of solar photovoltaic (PV) technology. Subsequently, the National Feed-in Tariff (FiT) programme was introduced in 2007 to encourage the installation of solar PV systems in residential and commercial properties.

This was followed by the Renewable Energy Act 2011 and the Sustainable Energy Development Authority Act 2011 that introduced the Feed-in Tariff (FiT) scheme, to purchase electricity generated from renewable resources at a fixed rate and period. FiT was well-received, particularly by oil palm estates and smallholdings because the mechanism is mainly for biogas, biomass and geothermal mini-hydro.

To increase the number of rooftop solar installations, the Net Energy Metering (NEM) was introduced in 2016, and it has undergone two extensions – NEM 2.0 and NEM 3.0 – to attract more commercial and residential consumers. Under NEM, a consumer installs a solar PV system on the rooftop primarily for self-consumption. Any excess energy generated is exported to the grid, and the value of the sale is offset by the value of electricity bought from the public utility, Tenaga Nasional Bhd (TNB).

In short, consumers only pay for the difference in amount between their monthly consumption and the solar energy sales, which will be credited in their TNB electricity bill.

"NEM has been successful in 2016 and it has run until 2022," says Rashdin Daud, deputy director of renewable energy capacity procurement unit at the Energy Commission or Suruhanjaya Tenaga (ST). "Consumers are encouraged to install solar PV systems to hedge against the rising cost of electricity," she adds.

Even then, solar panels remain a fairly new sight on residential rooftops because many homeowners feel it is not cost effective enough.

"I believe the price of solar PV systems is the main factor deterring Malaysian homeowners," says Nitrider, one of the former leapfrogging their savings to start considering reinvestment into such clean energy.

"It is estimated that when the monthly electricity bill exceeds RM400, installing a solar PV system may work out to be more cost-effective in the long run. But even that may not happen.

Nitrider points out that homes generally use less energy during the day but that is when the solar PV system generates optimally. Battery storage (usually an additional cost) is therefore required or else the energy produced is wasted and not accounted for as savings in electricity bill.

Rasdin says that satisfactory electricity bills and returns on investment differ from system to system. It also depends on the electricity consumed, rooftop space, installation capacity allowed, and capital expenditure incurred for installation.

She explains, "For example, a household with a monthly electricity bill of RM200, may save about RM125 on their bills based on a simple payback period of 10 years. But they have an upfront cost of RM14,000 for a 2.38 kWp installation. Homeowners in this category may not find any benefit in having a rooftop solar installation."

She adds that incentives such as FiT, NEM 2.0 and NEM 3.0, more can be done to boost rooftop solar PV installations in residential properties. Nitrider suggests allowing larger size solar PV systems, particularly for households contending with high electricity bills. This will enable them to actually recover a higher percentage of their investment costs. Currently, home solar PV systems are subject to size limitations.

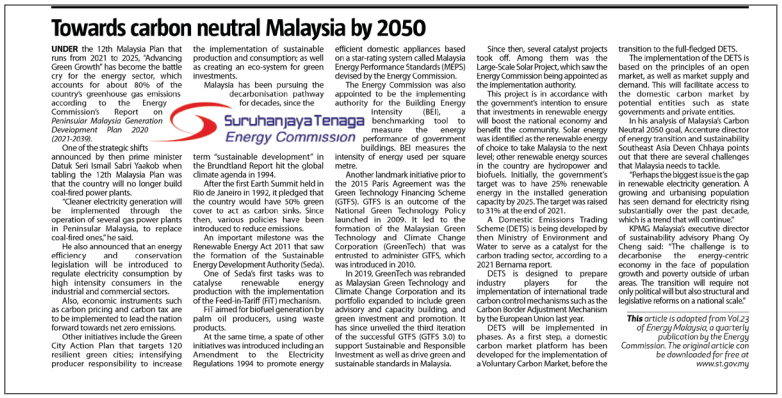
"In addition, the one-to-one offset ratio for excess energy exported to the grid could be raised to, say, 1:1.25 or 1:1.5 instead of the current 1:1 years," he adds. "The 10-year limit prevents homeowners from enjoying the sale of their solar energy; the current focus is on offsetting costs, not making a profit."

"The declining cost of solar PV systems owing to technology upgrades and market competition, together with supportive government policies and incentives, are expected to drive future growth in our renewable energy (RE) sector.

"Solar panel prices are not regulated by ST," says Rasdin. "Our role is to issue licences for installation and the size of the system – it must be safe and efficient."

"Usually, solar panels last 25 to 30 years, and after this period their efficiency starts to decline significantly, with solar production output falling at 0.8% annually. This rate of decline is called solar panel degradation rate, and it varies according to the quality of manufacturing," she added.

This article is adapted from Vol.20 of Energy Malaysia, a quarterly publication by the Energy Commission. The original article can be downloaded for free at www.st.gov.my



Towards carbon neutral Malaysia by 2050

Suruhanjaya Tenaga
Energy Commission

UNDER the 12th Malaysia Plan that runs from 2021 to 2025, "Advancing Green Growth" has become the battle cry for the energy sector, which accounts for about 80% of the country's greenhouse gas emissions according to the Energy Commission's Report on *Peninsular Malaysia Generation Development Plan 2020 (2021-2039)*.

One of the strategic shifts announced by then prime minister Datuk Seri Ismail Sabri Yaakob when tabling the 12th Malaysia Plan was that the country will no longer build coal-fired power plants.

"Cleaner electricity generation will be implemented through the operation of several gas power plants in Peninsular Malaysia, to replace coal-fired ones," he said.

He also announced that an energy efficiency and conservation legislation will be introduced to regulate electricity consumption by high intensity consumers in the industrial and commercial sectors.

Also, economic instruments such as carbon pricing and carbon tax are to be implemented to lead the nation forward towards net zero emissions.

Other initiatives include the Green City Action Plan that targets 120 resilient green cities; intensifying producer responsibility to increase the implementation of sustainable production and consumption; as well as creating an eco-system for green investments.

Malaysia has been pursuing the decarbonisation pathway for decades, since the term "sustainable development" in the Brundtland Report hit the global climate agenda in 1994.

After the first Earth Summit held in Rio de Janeiro in 1992, it pledged that the country would have 50% green cover to act as carbon sinks. Since then, various policies have been introduced to reduce emissions.

An important milestone was the Renewable Energy Act 2011 that saw the formation of the Sustainable Energy Development Authority (Seda).

One of Seda's first tasks was to catalyse renewable energy production with the implementation of the Feed-in-Tariff (FiT) mechanism.

FiT aimed for biofuel generation by palm oil producers, using waste products.

At the same time, a spate of other initiatives was introduced including an Amendment to the Electricity Regulations 1994 to promote energy efficient domestic appliances based on a star-rating system called Malaysia Energy Performance Standards (MEPS) devised by the Energy Commission.

The Energy Commission was also appointed to be the implementing authority for the Building Energy Intensity (BEI), a benchmarking tool to measure the energy performance of government buildings. BEI measures the intensity of energy used per square metre.

Another landmark initiative prior to the 2015 Paris Agreement was the Green Technology Financing Scheme (GTFS). GTFS is an outcome of the National Green Technology Policy launched in 2009. It led to the formation of the Malaysian Green Technology and Climate Change Corporation (GreenTech) that was entrusted to administer GTFS, which was introduced in 2010.

In 2019, GreenTech was rebranded as Malaysian Green Technology and Climate Change Corporation and its portfolio expanded to include green advisory and capacity building, and green investment and promotion. It has since unveiled the third iteration of the successful GTFS (GTFS 3.0) to support Sustainable and Responsible Investment as well as drive green and sustainable standards in Malaysia.

Since then, several catalyst projects took off. Among them was the Large-Scale Solar Project, which saw the Energy Commission being appointed as the implementation authority.

This project is in accordance with the government's intention to ensure that investments in renewable energy will boost the national economy and benefit the community. Solar energy was identified as the renewable energy of choice to take Malaysia to the next level; other renewable energy sources in the country are hydropower and biofuels. Initially, the government's target was to have 25% renewable energy in the installed generation capacity by 2025. The target was raised to 31% at the end of 2021.

A Domestic Emissions Trading Scheme (DETS) is being developed by then Ministry of Environment and Water to serve as a catalyst for the carbon trading sector, according to a 2021 Bernama report.

DETS is designed to prepare industry players for the implementation of international trade carbon control mechanisms such as the Carbon Border Adjustment Mechanism by the European Union last year.

DETS will be implemented in phases. As a first step, a domestic carbon market platform has been developed for the implementation of a Voluntary Carbon Market, before the transition to the full-fledged DETS.

The implementation of the DETS is based on the principles of an open market, as well as market supply and demand. This will facilitate access to the domestic carbon market by potential entities such as state governments and private entities.

In his analysis of Malaysia's Carbon Neutral 2050 goal, Accenture director of energy transition and sustainability Southeast Asia Dewen Chhaya points out that there are several challenges that Malaysia needs to tackle.

"Perhaps the biggest issue is the gap in renewable electricity generation. A growing and urbanising population has seen demand for electricity rising substantially over the past decade, which is a trend that will continue."

KPMG Malaysia's executive director of sustainability advisory Phang Oy Cheng said: "The challenge is to decarbonise the energy-centric economy in the face of population growth and poverty outside of urban areas. The transition will require not only political will but also structural and legislative reforms on a national scale."

This article is adapted from Vol.23 of Energy Malaysia, a quarterly publication by the Energy Commission. The original article can be downloaded for free at www.st.gov.my

Laporan Pencapaian Petunjuk Prestasi Utama (KPI) 2023

Key Performance Indicator (KPI) Achievement Report For 2023



Inisiatif dan Sasaran

Initiatives and Targets

Bagi meningkatkan lagi keberkesanan ST sebagai badan kawal selia sektor tenaga, satu set Petunjuk Prestasi Utama (KPI) Korporat telah diguna pakai pada 2023.

Secara keseluruhan, pencapaian purata bagi semua KPI 2023 ST berada pada tahap 94%.

To further enhance the effectiveness of the Commission as the regulatory body for the energy sector, a set of Corporate Key Performance Indicators (KPIs) was implemented in 2023.

Overall, the average achievement for all of the Commission's KPIs in 2023 was 94%.



Pencapaian KPI
KPI Achievements

2023

Objektif Strategik
Strategic Objectives
7

Teras Strategik
Strategic Pillars
5

Penggerak
Enablers
2

Sasaran Hasil
Target Results
26

Inisiatif
Initiatives
177

KPI Dicapai
KPI Achieved
94%

Sasaran Keberhasilan
Target Outcomes
84

Sasaran Penghasilan
Target Outputs
202



Objektif Strategik 1: Keselamatan dan Penguatkuasaan
Strategic Objective 1: Safety and Enforcement

- Sejumlah 44 kes kemalangan elektrik direkodkan sepanjang 2023 di mana 22 kes merupakan kes kemalangan maut.
- Sehingga 2023, jumlah perakuan kekompetenan elektrik yang dikeluarkan ialah sebanyak 164,413 perakuan, manakala untuk pemegang perakuan kekompetenan gas ialah sebanyak 1,249 orang.
- Maskot RoboST dan Komik Adiwira ST dilancarkan pada 8 Mei 2023.
- Capaian aktiviti kesedaran keselamatan elektrik dan gas kepada sekurang-kurangnya 12.8 juta orang pengguna.

- *A total of 44 electrical accident cases were recorded throughout 2023, out of which 22 cases were fatal accidents.*
- *As of 2023, the total number of electrical competency certificates issued was 164,413, while the total number of gas competency certificate holders was 1,249 individuals.*
- *The Commission's RoboST mascot and Adiwira Comic were launched on 8 May 2023.*
- *Electrical and gas safety awareness activities reached at least 12.8 million consumers.*



Objektif Strategik 2: Keberterusan Bekalan Tenaga
Strategic Objective 2: Energy Security

- Jumlah margin rizab ialah sebanyak 37% untuk kapasiti terpasang di Semenanjung dan 21% untuk kapasiti boleh harap di Sabah.
- *Herfindahl–Hirschman Index* (HHI) bagi campuran penjanaan adalah di bawah 0.5.
- Projek hidroelektrik 187.5 MW Upper Padas sedang dalam penilaian akhir tarif.

- *The total reserve margin for installed capacity in the Peninsula is 37%, and 21% for dependable capacity in Sabah.*
- *The Herfindahl–Hirschman Index (HHI) for the generation mix is below 0.5.*
- *The 187.5 MW Upper Padas hydroelectric project is in the final tariff evaluation stage.*



Objektif Strategik 3: Daya Harap Pembekalan Tenaga dan Kualiti Perkhidmatan Industri
Strategic Objective 3: Reliability of Energy Supply and Service Quality of the Industry

- Catatan *System Average Interruption Duration Index* (SAIDI) elektrik di Semenanjung ialah sebanyak 46.10 minit/pelanggan/tahun dan Sabah 266.35 minit/pelanggan/tahun.
- Catatan SAIDI sistem bekalan gas berpaip untuk sektor bukan tenaga di Semenanjung ialah sebanyak 0 minit/pelanggan/tahun.
- Tiada gangguan bekalan elektrik berskala besar berlaku.

- *System Average Interruption Duration Index (SAIDI) electricity records in the Peninsula and Sabah were at 46.10 minutes/customer/year and 266.35 minutes/customer/year, respectively.*
- *SAIDI piped gas supply system record for non-energy sectors in the Peninsula was at 0 minutes/customer/year.*
- *No major power supply disruptions occurred.*



Objektif Strategik 4: Kecekapan Ekonomi dan Kemampuan
Strategic Objective 4: Economic Efficiency and Affordability

- Penetapan kadar purata tarif asas elektrik di Semenanjung dilaksanakan berdasarkan parameter utama mengikut amalan-amalan terbaik untuk IBR TNB RP3 (2022-2024).
- Pelarasan tarif elektrik dan gas asli dilaksanakan di bawah mekanisme ICPT mencerminkan harga sebenar kos bahan api di pasaran.
- Penetapan kadar purata tarif asas elektrik di Sabah dilaksanakan berdasarkan parameter utama mengikut amalan-amalan terbaik untuk IBR SESB RP1 (2022-2024). Seterusnya ST telah membuat persediaan bagi menyerahkan kuasa kawal selia kepada Kerajaan Negeri Sabah.
- Pembaharuan dan penambahbaikan mekanisme Program Tarif Elektrik Hijau (GET) tawaran kuota 2023 dengan kadar premium sebanyak 21.8 sen/kWj.

- *The setting of the average electricity base tariff rate in the Peninsula was implemented based on key parameters following best practices for TNB's IBR RP3 (2022-2024).*
- *Adjustments of electricity and natural gas tariff rates were carried out under the ICPT mechanism, reflecting the actual market fuel costs.*
- *The setting of average electricity base tariff rates in Sabah was implemented based on key parameters following best practices for SESB's IBR RP1 (2022-2024). Subsequently, the Commission has made preparations to hand over regulatory authority to the Sabah State Government.*
- *Renewal and improvement of the Green Electricity Tariff (GET) Programme mechanism, offering quotas for 2023 at a premium rate of 21.8 sen/kWh.*



Objektif Strategik 5: Kemampanan Tenaga
Strategic Objective 5: Energy Sustainability

- Penilaian dan penganugerahan kuota dilaksanakan untuk Program Tenaga Hijau Korporat (CGPP) sebanyak 800 MW.
- Penjimatan tenaga elektrik tahunan sehingga 2023 di bawah Pelan Tindakan Kecekapan Tenaga Negara (NEEAP) ialah sebanyak 8,588 GWj.
- Akta Kecekapan dan Konservasi Tenaga (EECA) diluluskan oleh Dewan Rakyat pada 11 Oktober 2023.
- Pencapaian penjimatan tenaga sebanyak 1,515 GWj di bawah program *Minimum Energy Performance Standard* (MEPS).
- Penganjuran *EE Challenge* 2023 dilaksanakan dengan penerimaan sebanyak 2,677 penyertaan untuk semua kategori yang dipertandingkan.

- *Assessment and allocation of quotas have been carried out for the Corporate Green Power Programme (CGPP), totalling 800 MW.*
- *Annual electricity savings up to 2023 under the National Energy Efficiency Action Plan (NEEAP) amounted to 8,588 GWh.*
- *The Energy Efficiency and Conservation Act (EECA) was approved by the House of Representatives on 11 October 2023.*
- *Achievement of energy savings totalling 1,515 GWh under the Minimum Energy Performance Standard (MEPS) programme.*
- *The EE Challenge 2023 event was organised with a total of 2,677 entries received for all categories competed.*



Objektif Strategik 6: Kualiti Kawal Selia dan Penyampaian Perkhidmatan
Strategic Objective 6: Regulatory Quality and Service Delivery

- Peratus tahap kepuasan pemegang taruh melalui Kajian Kepuasan Pemegang Taruh (SSI) ST ialah sebanyak 98%.
- Keberterusan Pensijilan ISO9001:2015 diperakui *Lloyd's Register Quality Assurance* (LRQA) setelah audit pemantauan dilaksanakan.
- Projek Transformasi Digital ST untuk meningkatkan keberkesanan penyampaian perkhidmatan ST secara dalam talian melalui pembangunan sistem iRiST diteruskan dengan mencapai 80% pelaksanaan.

- *The percentage of stakeholder satisfaction through the Commission's Stakeholder Satisfaction Survey (SSI) stood at 98%.*
- *The continuity of ISO9001:2015 Certification was recognised by Lloyd's Register Quality Assurance (LRQA) after surveillance audits were conducted.*
- *The Commission's Digital Transformation Project to enhance the effectiveness of the Commission's online service delivery through the development of the iRiST system has reached 80% implementation.*



Objektif Strategik 7: Pembangunan Kapasiti dan Keupayaan
Strategic Objective 7: Capacity and Capability Development

- Bilangan kakitangan yang memperolehi Pensijilan Profesional meningkat kepada 31%. Program Pembangunan Kepimpinan diperluaskan dan sebanyak 243 sesi latihan dilaksanakan.
- 10 *Subject Matter Experts* (SME) dalaman baharu telah dikenal pasti bagi tujuan bimbingan & tunjuk ajar *(mentoring & coaching)*.

- *The number of staff obtaining Professional Certifications increased to 31%. The Leadership Development Programme was expanded, and a total of 243 training sessions were conducted.*
- *10 new internal Subject Matter Experts (SMEs) have been identified for mentoring and coaching purposes.*



Penyata Kewangan

Financial Statements



SIJIL KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
SURUHANJAYA TENAGA
BAGI TAHUN BERAKHIR 31 DISEMBER 2023

Sijil Mengenai Pengauditan Penyata Kewangan

Pendapat

Saya telah memberikan kuasa kepada firma audit swasta di bawah subseksyen 7(3) Akta Audit 1957 [*Akta 62*] untuk mengaudit Penyata Kewangan Suruhanjaya Tenaga. Penyata kewangan tersebut merangkumi Penyata Kedudukan Kewangan pada 31 Disember 2023 Suruhanjaya Tenaga dan Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih/Ekuiti, Penyata Aliran Tunai serta Penyata Prestasi Bajet bagi tahun berakhir pada tarikh tersebut dan nota kepada penyata kewangan termasuklah ringkasan polisi perakaunan yang signifikan seperti yang dinyatakan pada muka surat 1 hingga 38.

Pada pendapat saya, penyata kewangan ini memberikan gambaran yang benar dan saksama mengenai kedudukan kewangan Suruhanjaya Tenaga pada 31 Disember 2023 dan prestasi kewangan serta aliran tunai bagi tahun berakhir pada tarikh tersebut selaras dengan Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) dan keperluan Akta Suruhanjaya Tenaga 2001 [*Akta 610*] serta Akta Suruhanjaya Tenaga (Pindaan) 2010 [*Akta A1371*].

Asas Kepada Pendapat

Pengauditan telah dilaksanakan berdasarkan Akta Audit 1957 dan International Standards of Supreme Audit Institutions. Tanggungjawab saya dihuraikan selanjutnya di perenggan Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan dalam sijil ini. Saya percaya bahawa bukti audit yang diperoleh adalah mencukupi dan bersesuaian untuk dijadikan asas kepada pendapat saya.

Kebebasan dan Tanggungjawab Etika Lain

Saya adalah bebas daripada Suruhanjaya Tenaga dan telah memenuhi tanggungjawab etika lain berdasarkan International Standards of Supreme Audit Institutions.

Maklumat Lain Selain Daripada Penyata Kewangan dan Sijil Juruaudit Mengenainya

Anggota Suruhanjaya, Suruhanjaya Tenaga bertanggungjawab terhadap maklumat lain dalam Laporan Tahunan. Pendapat saya terhadap Penyata Kewangan Suruhanjaya Tenaga tidak meliputi maklumat lain selain daripada penyata kewangan dan Sijil Juruaudit mengenainya dan saya tidak menyatakan sebarang bentuk kesimpulan jaminan mengenainya.

Tanggungjawab Anggota Suruhanjaya Terhadap Penyata Kewangan

Anggota Suruhanjaya bertanggungjawab terhadap penyediaan Penyata Kewangan Suruhanjaya Tenaga yang memberi gambaran benar dan saksama selaras dengan Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) dan keperluan Akta Suruhanjaya Tenaga 2001 [*Akta 610*] serta Akta Suruhanjaya Tenaga (Pindaan) 2010 [*Akta A1371*]. Anggota Suruhanjaya juga bertanggungjawab terhadap penetapan kawalan dalaman yang perlu bagi membolehkan penyediaan Penyata Kewangan Suruhanjaya Tenaga yang bebas daripada salah nyata yang ketara, sama ada disebabkan fraud atau kesilapan.

Semasa penyediaan Penyata Kewangan Suruhanjaya Tenaga, Anggota Suruhanjaya bertanggungjawab untuk menilai keupayaan Suruhanjaya Tenaga untuk beroperasi sebagai satu usaha berterusan, mendedahkannya jika berkaitan serta menggunakannya sebagai asas perakaunan.

Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan

Objektif saya adalah untuk memperoleh keyakinan yang munasabah sama ada Penyata Kewangan Suruhanjaya Tenaga secara keseluruhannya adalah bebas daripada salah nyata yang ketara, sama ada disebabkan fraud atau kesilapan, dan mengeluarkan Sijil Juruaudit yang merangkumi pendapat saya. Jaminan yang munasabah adalah satu tahap jaminan yang tinggi, tetapi bukan satu jaminan bahawa audit yang dijalankan mengikut International Standards of Supreme Audit Institutions akan sentiasa mengesan salah nyata yang ketara apabila ia wujud. Salah nyata boleh wujud daripada fraud atau kesilapan dan dianggap ketara sama ada secara individu atau agregat sekiranya boleh dijangkakan dengan munasabah untuk mempengaruhi keputusan ekonomi yang dibuat oleh pengguna berdasarkan penyata kewangan ini.

Sebagai sebahagian daripada pengauditan mengikut International Standards of Supreme Audit Institutions, saya menggunakan pertimbangan profesional dan mengekalkan keraguan profesional sepanjang pengauditan. Saya juga:

a. mengenal pasti dan menilai risiko salah nyata ketara dalam Penyata Kewangan Suruhanjaya Tenaga, sama ada disebabkan fraud atau kesilapan, merangka dan

melaksanakan prosedur audit yang responsif terhadap risiko berkenaan serta mendapatkan bukti audit yang mencukupi dan bersesuaian untuk memberikan asas kepada pendapat saya. Risiko untuk tidak mengesan salah nyata ketara akibat daripada fraud adalah lebih tinggi daripada kesilapan kerana fraud mungkin melibatkan pakatan, pemalsuan, ketinggalan yang disengajakan, representasi yang salah, atau mengatasi kawalan dalaman;

b. memahami kawalan dalaman yang relevan untuk merangka prosedur audit yang bersesuaian tetapi bukan untuk menyatakan pendapat mengenai keberkesanan kawalan dalaman Suruhanjaya Tenaga;

c. menilai kesesuaian dasar perakaunan yang diguna pakai, kemunasabahan anggaran perakaunan dan pendedahan yang berkaitan oleh Anggota Suruhanjaya;

d. membuat kesimpulan terhadap kesesuaian penggunaan asas perakaunan untuk usaha berterusan oleh Anggota Suruhanjaya dan berdasarkan bukti audit yang diperoleh, sama ada wujudnya ketidakpastian ketara yang berkaitan dengan peristiwa atau keadaan yang mungkin menimbulkan keraguan yang signifikan terhadap keupayaan Suruhanjaya Tenaga sebagai satu usaha berterusan. Jika saya membuat kesimpulan bahawa ketidakpastian ketara wujud, saya perlu melaporkan dalam Sijil Juruaudit terhadap pendedahan yang berkaitan dalam Penyata Kewangan Suruhanjaya Tenaga atau, jika pendedahan tersebut tidak mencukupi, pendapat saya akan diubah. Kesimpulan saya dibuat berdasarkan bukti audit yang diperoleh sehingga tarikh Sijil Juruaudit. Bagaimanapun, peristiwa atau keadaan pada masa hadapan berkemungkinan menyebabkan Suruhanjaya Tenaga tidak lagi berupaya meneruskan operasi secara usaha berterusan; dan

e. menilai persembahan secara keseluruhan, struktur dan kandungan Penyata Kewangan Suruhanjaya Tenaga, termasuk pendedahannya, dan sama ada penyata kewangan tersebut telah melaporkan asas-asas urus niaga dan peristiwa-peristiwa yang memberikan gambaran saksama.

Anggota Suruhanjaya telah dimaklumkan, antaranya mengenai skop dan tempoh pengauditan yang dirancang serta penemuan audit yang signifikan termasuk kelemahan kawalan dalaman yang dikenal pasti semasa pengauditan.

Hal-hal Lain

Sijil ini dibuat untuk Anggota Suruhanjaya, Suruhanjaya Tenaga berdasarkan keperluan Akta Suruhanjaya Tenaga 2001 [*Akta 610*] serta Akta Suruhanjaya Tenaga (Pindaan) 2010 [*Akta A1371*] dan bukan untuk tujuan lain. Saya tidak bertanggungjawab terhadap pihak lain bagi kandungan sijil ini.

(DATUK WAN SURAYA BINTI WAN MOHD RADZI)
KETUA AUDIT NEGARA
MALAYSIA

PUTRAJAYA
19 JULAI 2024

PENYATA PENGERUSI DAN SEORANG ANGGOTA SURUHANJAYA TENAGA

Kami Mohammed Rashdan bin Mohd Yusof dan Y.M. Raja Azura binti Raja Mahayuddin yang merupakan Pengerusi dan salah seorang Anggota Suruhanjaya Tenaga dengan ini menyatakan bahawa, pada pendapat Anggota, Penyata Kewangan yang mengandungi Penyata Kedudukan Kewangan, Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih/Ekuiti, Penyata Aliran Tunai dan Penyata Prestasi Bajet Suruhanjaya Tenaga yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya, adalah disediakan untuk menunjukkan pandangan yang benar dan saksama berkenaan kedudukan Suruhanjaya Tenaga pada 31 Disember 2023 dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun berakhir pada tarikh tersebut.

Bagi pihak Anggota,

.....

Mohammed Rashdan bin Mohd Yusof
Pengerusi

Tarikh: 11 Julai 2024

Tempat: Suruhanjaya Tenaga
Presint 2, Putrajaya

Bagi pihak Anggota,

.....

Y.M. Raja Azura binti Raja Mahayuddin
Anggota

Tarikh: 11 Julai 2024

Tempat: Suruhanjaya Tenaga
Presint 2, Putrajaya

PENGAKUAN OLEH PEGAWAI UTAMA YANG BERTANGGUNGJAWAB KE ATAS PENGURUSAN KEWANGAN SURUHANJAYA TENAGA

Saya, Dato' Ir. Ts. Abdul Razib bin Dawood, pegawai utama yang bertanggungjawab ke atas pengurusan kewangan dan rekod-rekod perakaunan Suruhanjaya Tenaga, dengan ikhlasnya mengakui bahawa Penyata Kedudukan Kewangan, Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih/Ekuiti, Penyata Aliran Tunai dan Penyata Prestasi Bajet Suruhanjaya Tenaga dalam kedudukan kewangan yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya mengikut sebaik-baik pengetahuan dan kepercayaan saya, adalah betul dan saya membuat ikrar ini dengan sebenarnya mempercayai bahawa ia adalah benar dan atas kehendak-kehendak Akta Akuan Berkanun 1960.

Sebenarnya dan sesungguhnya)
diakui oleh penama di atas)
di KUALA LUMPUR)
pada 11 JUL 2024)

.....

Di hadapan saya,

PESURUHJAYA SUMPAH
No. W790
Nama: ZAINUL ABIDIN BIN AHMAD
1 JAN 2023 - 31 DIS 2025
MALAYSIA

.....

22nd Floor, Wisma Hamzah Kwong Hing
No. 1, Jalan Raja Laut
50100 Kuala Lumpur

PESURUHJAYA SUMPAH

SURUHANJAYA TENAGA

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371)

PENYATA KEDUDUKAN KEWANGAN
Pada 31 Disember 2023

	Nota	2023 RM	2022 RM
ASET			
Aset Semasa			
Tunai dan Kesetaraan Tunai	4	165,069,431	151,991,166
Pelaburan Jangka Pendek	5	428,272,899	413,378,762
Pelbagai Akaun Belum Terima, Deposit dan Pendahuluan	6	1,260,112	670,009
Pendapatan Faedah Belum Terima	7	4,308,841	3,428,328
Cukai Terdahulu	8	-	1,692,162
Jumlah Aset Semasa		598,911,283	571,160,427
Aset Bukan Semasa			
Hartanah, Kelengkapan dan Peralatan	9	73,625,191	75,377,978
Aset Tak Ketara	10	11,678	-
Jumlah Aset		**672,548,152**	**646,538,405**
LIABILITI			
Liabiliti Semasa			
Pelbagai Akaun Belum Bayar dan Perbelanjaan Terakru	11	14,584,408	15,357,509
Peruntukan Manfaat Pekerja Jangka Pendek	12	5,255,798	3,282,678
Kumpulan Wang Khas	13	2,273,311	2,326,682
Cukai Kena Bayar	8	1,833,438	-
Jumlah Liabiliti Semasa		23,946,955	20,966,869
Liabiliti Bukan Semasa			
Peruntukan Manfaat Pekerja Jangka Panjang	12	19,642,806	20,127,476
Jumlah Liabiliti		**43,589,761**	**41,094,345**
Aset Bersih		**628,958,391**	**605,444,060**
ASET BERSIH/EKUITI			
Dana Terkumpul		**628,958,391**	**605,444,060**

Nota-nota yang disertakan dari muka surat 6 hingga 38 adalah sebahagian daripada Penyata Kewangan ini.

SURUHANJAYA TENAGA

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371)

PENYATA PRESTASI KEWANGAN
Bagi Tahun Berakhir 31 Disember 2023

	Nota	2023 RM	2022 RM
PENDAPATAN			
Hasil Daripada Urus Niaga Bukan Pertukaran			
Yuran dan Caj	14	117,689,697	131,352,893
Hasil Daripada Urus Niaga Pertukaran			
Faedah		19,950,719	12,415,997
Lain-lain Pendapatan	15	212,394	131,879
JUMLAH PENDAPATAN		137,852,810	143,900,769
PERBELANJAAN			
Gaji, Elaun dan Manfaat Pekerja	16	70,040,776	70,149,182
Perjalanan dan Sara Hidup		4,170,044	2,850,449
Perhubungan dan Utiliti		3,189,884	2,505,445
Sewaan		3,015,666	2,847,937
Hospitaliti		432,666	420,576
Bekalan Pejabat		1,171,046	1,039,796
Penyenggaraan	17	7,087,484	7,171,112
Perkhidmatan Ikhtisas	18	10,484,733	9,625,543
Susut Nilai Hartanah, Kelengkapan dan Peralatan		2,917,299	2,761,679
Pelunasan Aset Tak Ketara		386	-
Perbelanjaan Lain	19	6,006,423	5,939,588
JUMLAH PERBELANJAAN		(108,516,407)	(105,311,307)
Lebihan Sebelum cukai		29,336,403	38,589,462
Cukai	20	(5,822,072)	(3,647,676)
Lebihan Bersih Semasa		23,514,331	34,941,786

Nota-nota yang disertakan dari muka surat 6 hingga 38 adalah sebahagian daripada Penyata Kewangan ini.

SURUHANJAYA TENAGA

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371)

PENYATA PERUBAHAN ASET BERSIH/EKUITI
Bagi Tahun Berakhir 31 Disember 2023

	Jumlah RM
2022	
Baki pada 1 Januari	570,502,274
Lebihan bagi tahun	34,941,786
Baki pada 31 Disember	605,444,060
2023	
Baki pada 1 Januari	605,444,060
Lebihan bagi tahun	23,514,331
Baki pada 31 Disember	628,958,391

Nota-nota yang disertakan dari muka surat 6 hingga 38 adalah sebahagian daripada Penyata Kewangan ini.

SURUHANJAYA TENAGA

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371)

PENYATA ALIRAN TUNAI
Bagi Tahun Berakhir 31 Disember 2023

	Nota	2023 RM	2022 RM
ALIRAN TUNAI DARIPADA AKTIVITI OPERASI			
Lebihan Pendapatan Sebelum Cukai		29,336,403	38,589,462
Pelarasan Untuk Perkara Yang Tidak Melibatkan Tunai:			
Pendapatan Faedah Diterima		(19,950,719)	(12,415,997)
Susut Nilai Hartanah, Kelengkapan dan Peralatan	9	2,917,299	2,761,679
Pelunasan Aset Tak Ketara	10	386	-
Pelupusan Hartanah, Kelengkapan dan Peralatan		1,074	4
Peruntukan Manfaat Pekerja	12	5,996,385	7,421,440
Keuntungan Operasi Sebelum Perubahan Modal Kerja		18,300,828	36,356,588
Perubahan Dalam Modal Kerja dan Kumpulan Wang Khas:			
Peningkatan di dalam Pelbagai Akaun Belum Terima dan Faedah Belum Terima		(1,470,616)	(1,173,818)
(Kurangan)/Peningkatan di dalam Pelbagai Akaun Belum Bayar dan Perbelanjaan Terakru		(773,101)	418,305
Pemberian Kerajaan/Agensi	13	494,538	153,000
Faedah Kumpulan Wang Khas	13	21,974	53,339
Perbelanjaan Kumpulan Wang Khas	13	(569,883)	(3,585,876)
Tunai Dijana Daripada Aktiviti Operasi		16,003,740	32,221,538
Bayaran Cukai		(2,296,472)	(4,105,545)
Bayaran Manfaat Pekerja		(4,507,935)	(4,162,358)
Aliran Tunai Bersih Dijana Daripada Aktiviti Operasi		**9,199,333**	**23,953,635**
ALIRAN TUNAI DARIPADA AKTIVITI PELABURAN			
Pelaburan Jangka Pendek		(14,894,137)	(6,057,690)
Pembelian Hartanah, Kelengkapan dan Peralatan	9	(1,165,586)	(1,480,045)
Pembelian Aset Tak Ketara	10	(12,064)	-
Pendapatan Faedah Diterima		19,950,719	12,415,997
Aliran Tunai Bersih Daripada Aktiviti Pelaburan		**3,878,932**	**4,878,262**
Peningkatan Bersih Dalam Tunai Kesetaraan Tunai		13,078,265	28,831,897
Tunai dan Kesetaraan Tunai Pada Awal Tahun		**151,991,166**	**123,159,269**
Tunai dan Kesetaraan Tunai Pada Akhir Tahun	4	**165,069,431**	**151,991,166**

Nota-nota yang disertakan dari muka surat 6 hingga 38 adalah sebahagian daripada Penyata Kewangan ini.

SURUHANJAYA TENAGA

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371)

PENYATA PRESTASI BAJET
Bagi Tahun Berakhir 31 Disember 2023

Sebenar 2022	Perihal	Sebenar 2023	Bajet Akhir 2023	Bajet Asal 2023	Perbezaan Bajet Akhir dengan Sebenar
RM		RM	RM	RM	RM
	HASIL				
131,352,893	Hasil Operasi	117,689,697	120,087,065	120,087,065	(2,397,368)
12,547,876	Pendapatan Faedah, Keuntungan Hibah dan Lain-lain Pendapatan	20,163,113	11,210,000	11,210,000	8,953,113
143,900,769	**Jumlah Hasil**	**137,852,810**	**131,297,065**	**131,297,065**	**6,555,745**
	PERBELANJAAN				
70,092,812	Emolumen	70,040,776	77,283,300	77,283,300	7,242,524
2,850,449	Perjalanan dan Sara Hidup	4,170,044	4,352,800	3,500,000	182,756
2,505,445	Perhubungan dan Utiliti	3,189,884	3,190,300	3,000,000	416
2,847,937	Sewaan	3,015,666	3,512,100	3,591,800	496,434
420,576	Hospitaliti	432,666	477,500	450,000	44,834
729,275	Bekalan Pejabat	873,175	1,619,500	2,110,900	746,325
5,151,426	Penyenggaraan	5,980,098	8,107,900	8,600,000	2,127,802
10,298,167	Perkhidmatan Ikhtisas	12,150,739	16,690,600	20,098,000	4,539,861
5,919,608	Perbelanjaan Lain	636,483	10,393,000	6,993,000	9,756,517
906,639	Aset	394,527	2,385,200	2,385,200	1,990,673
101,722,334	**Jumlah Perbelanjaan**	**100,884,058**	**128,012,200**	**128,012,200**	**27,128,142**
42,178,435	**Lebihan/(Kurangan)**	**36,968,752**	**3,284,865**	**3,284,865**	**(20,572,397)**

Nota-nota yang disertakan dari muka surat 6 hingga 38 adalah sebahagian daripada Penyata Kewangan ini.

Nota-nota kepada Penyata Kewangan

1. Kegiatan Utama

Suruhanjaya Tenaga adalah sebuah badan berkanun yang beroperasi di No. 12, Jalan Tun Hussein, Presint 2, 62100 Putrajaya.

Suruhanjaya Tenaga merupakan agensi pengawal selia tunggal bagi pengawalseliaan dan pembangunan sektor tenaga. Suruhanjaya Tenaga mempunyai tanggungjawab langsung bagi menyelia dan mengawasi kegiatan penjanaan tenaga termasuk mengawal selia setiap individu yang berlesen bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371).

Penyata Kewangan ini telah diluluskan dan diperakukan oleh Suruhanjaya Tenaga untuk ditandatangan pada 11 Julai 2024.

2. Asas Penyediaan Penyata Kewangan

(I). Keterangan Pematuhan

Pelaporan penyata kewangan Suruhanjaya Tenaga telah disediakan pada asas akruan mengikut Piawaian Perakaunan untuk Sektor Awam Malaysia (MPSAS - *Malaysian Public Sector Accounting Standards*).

(II). Asas Pengukuran

Penyata Kewangan ini telah disediakan dengan menggunakan asas kos sejarah melainkan dinyatakan sebaliknya di dalam Nota 3.

(III). Matawang Persembahan dan Fungsian

Penyata kewangan ini dinyatakan dalam Ringgit Malaysia (RM), iaitu matawang fungsian untuk Suruhanajaya Tenaga.

Nota-nota kepada Penyata Kewangan...sambungan

2. Asas Penyediaan Penyata Kewangan...sambungan

(IV). Anggaran dan Pertimbangan Perakaunan Signifikan

Penyediaan penyata kewangan yang mematuhi MPSAS memerlukan pihak pengurusan membuat pertimbangan, anggaran dan andaian yang memberi kesan kepada penggunaan polisi perakaunan dan amaun aset, liabiliti, pendapatan dan perbelanjaan. Walaupun pertimbangan, anggaran dan andaian adalah berdasarkan kepada pengetahuan dan tindakan semasa pihak pengurusan yang terbaik, keputusan sebenar mungkin berbeza daripada anggaran ini.

Anggaran dan andaian asas disemak secara berterusan. Semakan ke atas anggaran perakaunan diiktiraf dalam tempoh di mana anggaran tersebut disemak dan dalam mana-mana tempoh masa depan yang terlibat.

Tiada bahagian signifikan dalam ketidakpastian anggaran dan pertimbangan kritikal dalam mengguna pakai dasar perakaunan yang mempunyai kesan ketara ke atas amaun yang diiktiraf dalam penyata kewangan selain daripada yang dinyatakan dalam nota-nota kepada penyata kewangan.

3. Polisi Perakaunan

(I). Hartanah, Kelengkapan dan Peralatan

Hartanah, Kelengkapan dan Peralatan dinyatakan pada kos ditolak susut nilai terkumpul dan rosot nilai, jika ada.

Susut nilai bagi hartanah, kelengkapan dan peralatan dikira berdasarkan kaedah asas garis lurus ke atas anggaran jangka masa guna aset berkenaan.

Kadar tahunan susut nilai adalah seperti berikut:

Bangunan	2%
Kenderaan bermotor	20%
Perabot, kelengkapan, ubah suai dan peralatan penguatkuasaan	20%
Peralatan pejabat (elektronik)	15%
Sistem aplikasi dan komputer	33 1/3%
Lekapan dan kelengkapan	20%

Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(I). Hartanah, Kelengkapan dan Peralatan...sambungan

Tanah pada nilai kos adalah jenis pegangan untuk selama-lamanya dan tidak disusutnilaikan.

Nilai sisa, jangka hayat dan kaedah susut nilai dikaji semula pada setiap akhir tahun kewangan bagi memastikan amaunnya, kaedah dan tahun susut nilai adalah selaras dengan anggaran sebelumnya serta corak penggunaan manfaat ekonomi hartanah dan peralatan tersebut.

(II). Aset Tak Ketara

Aset tak ketara hendaklah diiktiraf jika, dan hanya jika:

(a). Terdapat kebarangkalian bahawa jangkaan manfaat ekonomi masa hadapan atau potensi perkhidmatan yang berkaitan dengan aset tersebut akan mengalir kepada entiti; dan

(b). Kos atau nilai saksama aset boleh diukur dengan pasti.

Aset Tak Ketara Suruhanjaya Tenaga terdiri daripada Hak Cipta dan Cap Dagangan yang diiktiraf pada harga kos pendaftaran di Perbadanan Harta Intelek Malaysia (MyIPO) ke atas Maskot RoboST dan Adiwira ST.

Tempoh jangka hayat Aset Tak Ketara bagi Hak Cipta ditentukan selama 50 tahun dan Cap Dagangan adalah 10 tahun.

Pelunasan Aset Tak Ketara adalah menggunakan kaedah garis lurus sepanjang anggaran hayat usia guna aset. Aset tak ketara dinyahiktiraf:

(a). Semasa pelupusan (termasuk pelupusan melalui urus niaga bukan pertukaran); atau

(b). Apabila tiada manfaat ekonomi masa hadapan atau potensi perkhidmatan yang dijangka daripada penggunaan atau pelupusannya.

Keuntungan atau kerugian atas nyahiktiraf Aset Tak Ketara ditentukan dengan membandingkan nilai pelupusan bersih dengan nilai buku bersih di mana perbezaannya akan diambil kira sebagai keuntungan atau kerugian di dalam Penyata Prestasi Kewangan.

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Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(III). Aset Kewangan

Aset kewangan diiktiraf dalam Penyata Kedudukan Kewangan apabila Suruhanjaya menjadi pihak kepada peruntukan kontrak instrumen.

Pada pengiktirafan awal, Aset Kewangan adalah diukur pada nilai saksama, termasuk kos urus niaga untuk Aset Kewangan yang tidak diukur pada nilai saksama menerusi lebihan atau kurangan, yang terlibat secara langsung di dalam menerbit Aset Kewangan.

Selepas pengiktirafan awal, Aset Kewangan akan dikelaskan kepada salah satu daripada empat kategori Aset Kewangan iaitu Aset Kewangan diukur pada nilai saksama melalui lebihan atau kurangan, pinjaman dan belum terima, pelaburan dipegang hingga matang dan Aset Kewangan sedia untuk dijual.

Pembelian atau penjualan Aset Kewangan yang memerlukan penyerahan aset dalam tempoh masa yang ditetapkan oleh peraturan atau konvensyen di dalam pasaran akan diiktiraf pada tarikh urus niaga itu dibuat, iaitu tarikh di mana Suruhanjaya membuat komitmen untuk membeli atau menjual aset tersebut.

Pihak Suruhanjaya mempunyai Kategori Aset Kewangan seperti berikut:

(a). Akaun Belum Terima

Akaun Belum Terima adalah Aset Kewangan bukan derivatif dengan bayaran tetap atau pembayaran yang tidak tersiar harga di dalam pasaran aktif. Selepas pengiktirafan awal, Aset Kewangan tersebut kemudiannya diukur pada nilai kos dilunaskan dengan menggunakan kaedah faedah efektif dan ditolak rosot nilai. Kos dilunaskan dikira dengan mengambil kira apa-apa diskaun atau premium atas pembelian aset tersebut serta yuran atau kos yang merupakan sebahagian daripada kadar faedah efektif. Kerugian yang timbul daripada kemerosotan nilai diiktiraf dalam lebihan atau kurangan. Akaun Belum Terima diklasiflkasikan sebagai aset semasa kecuali Akaun Belum Terima di mana tarikh matang adalah melebihi 12 bulan selepas tarikh laporan yang diklasifikasikan sebagai Aset Bukan Semasa.

Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(III). Aset Kewangan...sambungan

(b). Aset Kewangan Pada Nilai Saksama Melalui Lebihan atau Kurangan

Bagi mana-mana derivatif terbenam yang tidak boleh dinilai dengan yakin secara berasingan sama ada pada tarikh pengambilalihan atau pada tarikh akhir tempoh laporan yang berikutnya, keseluruhan instrumen tersebut ditetapkan pada Nilai Saksama Melalui Lebihan atau Kurangan.

Walau bagaimanapun, jika keseluruhan instrumen tidak boleh dinilai dengan yakin, instrumen tersebut dinyatakan pada nilai kos selepas ditolak rosot nilai.

(c). Pelaburan Dipegang Hingga Matang

Aset Kewangan bukan derivatif dengan tempoh matang pembayaran tetap atau boleh ditentukan dan tetap diklasifikasikan sebagai dipegang untuk matang apabila Suruhanjaya mempunyai niat positif dan keupayaan untuk memegang sehingga matang. Selepas pengukuran awal, pelaburan dipegang hingga matang diukur pada kos yang dilunaskan menggunakan kaedah faedah berkesan dan ditolak rosot nilai. Kos pelunasan dikira dengan mengambil kira apa-apa diskaun atau premium atas pengambilalihan dan yuran atau kos yang merupakan sebahagian daripada kadar faedah efektif. Kerugian yang timbul daripada kemerosotan nilai diiktiraf dalam Penyata Prestasi Kewangan.

Suruhanjaya akan menyahiktiraf Aset Kewangan atau, jika berkenaan, sebahagian daripada Aset Kewangan atau sebahagian daripada sekumpulan Aset Kewangan apabila:

(i). Hak untuk menerima aliran tunai daripada aset telah luput atau dikecualikan;

(ii). Suruhanjaya telah memindahkan haknya untuk menerima aliran tunai daripada aset atau telah menerima obligasi untuk membayar aliran tunai yang diterima secara penuh tanpa kelewatan material kepada pihak ketiga; dan sama ada: (i) Suruhanjaya telah memindahkan sebahagian besar risiko dan ganjaran aset; atau (ii) Suruhanjaya tidak memindahkan atau mengekalkan sebahagian besar risiko dan ganjaran aset, tetapi telah memindahkan kawalan aset tersebut.

Sebarang perbezaan di antara nilai dibawa aset kewangan yang dinyahiktiraf dan pertimbangan diterima adalah diiktiraf di dalam Penyata Prestasi Kewangan dalam tempoh penyahiktirafan

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Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(III). Aset Kewangan...sambungan

(d). Aset Kewangan Sedia Dijual

Aset Kewangan Sedia Dijual adalah Aset Kewangan yang ditetapkan sebagai sedia untuk dijual atau tidak diklasifikasikan dalam mana-mana kategori Aset Kewangan lain. Selepas pengiktirafan asal, Aset Kewangan sedia dijual dinyatakan pada nilai saksama. Keuntungan atau kerugian daripada perubahan nilai saksama Aset Kewangan tersebut diiktiraf melalui Penyata Aset Bersih, kecuali kerugian rosot nilai, kerugian dan keuntungan pertukaran mata wang asing atas instrumen kewangan dan faedah yang dikira di bawah kaedah faedah efektif.

Pelaburan dalam instrumen ekuiti di mana nilai saksama tidak boleh dinilai dengan yakin dinyatakan pada nilai kos setelah ditolak kerugian rosot nilai.

(IV). Liabiliti Kewangan

Liabiliti Kewangan diiktiraf dalam Penyata Kedudukan Kewangan apabila Suruhanjaya menjadi pihak kepada peruntukan kontrak instrumen.

Pada pengiktirafan awal, Liabiliti Kewangan adalah diukur pada nilai saksama, termasuk kos urus niaga untuk Liabiliti Kewangan yang tidak diukur pada nilai saksama menerusi lebihan atau kurangan, yang terlibat secara langsung di dalam menerbitkan Liabiliti Kewangan.

Selepas pengiktirafan awal, Liabiliti Kewangan dikelaskan kepada salah satu daripada dua kategori Liabiliti Kewangan iaitu Liabiliti Kewangan diukur pada nilai saksama menerusi lebihan atau kurangan, akaun belum bayar.

Suruhanjaya mempunyai kategori Liabiliti Kewangan seperti berikut:

<u>Akaun Belum Bayar</u>

Selepas pengiktirafan awal, Akaun Belum Bayar adalah diukur pada kos dilunaskan menggunakan kaedah faedah efektif. Keuntungan atau kerugian diiktiraf di dalam lebihan atau kurangan apabila Liabiliti Kewangan dinyahiktiraf atau dirosotnilai.

Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(IV). Liabiliti Kewangan...sambungan

Akaun Belum bayar...sambungan

Liabiliti Kewangan dinyahiktiraf apabila obligasi yang dinyatakan dalam kontrak telah dilepaskan, dibatalkan atau tamat tempoh.

Sebarang perbezaan di antara nilai dibawa Liabiliti Kewangan yang dinyahiktiraf dan pertimbangan dibayar adalah diiktiraf di dalam lebihan atau kurangan dalam tempoh penyahiktirafan.

(V). Pertimbangan Perakaunan Kritikal dan Ketidakpastian dalam Sumber Utama Anggaran

Tiada sebarang pertimbangan perakaunan kritikal dan ketidakpastian dalam sumber utama anggaran yang digunakan ketika menyediakan Penyata Kewangan Suruhanjaya yang mempunyai kesan ketara ke atas jumlah yang dilaporkan selain yang dinyatakan di bawah:

(a). Elaun Rosot Nilai bagi Belum Terima

Suruhanjaya menilai pada setiap tarikh pelaporan sama ada terdapat sebarang bukti objektif bahawa Aset Kewangan terjejas. Untuk menentukan sama ada terdapat bukti objektif rosot nilai, Suruhanjaya menganggap faktor seperti ketidakmampuan bayar si berhutang dan keingkaran atau kelewatan pembayaran yang ketara. Jika terdapat bukti potensi hutang tak mampu dibayar, jumlah dan masa aliran tunai masa hadapan dianggarkan berdasarkan sejarah pengalaman kerugian untuk aset yang mempunyai ciri-ciri risiko kredit yang serupa.

(b). Perubahan Anggaran Jangka Hayat bagi Hartanah, Kelengkapan dan Peralatan

Semua Hartanah, Kelengkapan dan Peralatan disusutnilaikan mengikut kaedah garis lurus sepanjang jangka hayat aset tersebut. Perubahan dalam anggaran corak penggunaan aset dan pembangunan teknologi boleh memberi kesan kepada jangka hayat dan nilai sisa aset tersebut. Ini akan menyebabkan susut nilai aset pada masa hadapan akan disemak semula.

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Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(V). Pertimbangan Perakaunan Kritikal dan Ketidakpastian dalam Sumber Utama Anggaran... sambungan

(c). Pengukuran Peruntukan

Suruhanjaya sentiasa menggunakan anggaran terbaik sebagai asas untuk mengukur suatu peruntukan itu. Anggaran itu dibuat berdasarkan kepada pengalaman lalu, lain-lain petunjuk atau andaian, perkembangan terkini dan peristiwa masa hadapan yang munasabah dalam menentukan suatu peruntukan.

(VI). Penjejasan Aset Bukan Kewangan

(a). Penjejasan Nilai Aset Menjana Tunai

Pada setiap tarikh Penyata Kedudukan Kewangan, Suruhanjaya mengkaji semula nilai dibawa aset-asetnya bagi menentukan sama ada terdapat sebarang petunjuk kemerosotan nilai. Jika wujud sebarang petunjuk, rosot nilai dikira dengan membandingkan nilai dibawa aset dengan amaun boleh pulih. Amaun boleh pulih adalah nilai tertinggi di antara nilai saksama ditolak kos untuk dijual dan nilai dalam penggunaan.

Dalam menentukan nilai dalam penggunaan aliran tunai masa hadapan akan didiskaunkan kepada nilai semasanya menggunakan kadar diskaun sebelum cukai yang menggambarkan nilai pasaran semasa nilai masa wang dan risiko khusus kepada aset tersebut. Di dalam menentukan nilai saksama ditolak kos untuk dijual pula, urus niaga pasaran terkini akan diambil kira, jika ada. Jika tiada urus niaga pasaran terkini berlaku, model penilaian yang sesuai hendaklah digunakan.

Kerugian kemerosotan diiktiraf sebagai perbelanjaan dalam Penyata Prestasi Kewangan serta-merta apabila nilai dibawa aset melebihi amaun boleh pulihnya.

Kerugian kemerosotan nilai yang diiktiraf dalam tempoh terdahulu bagi sesuatu aset hendaklah dibalikkan jika, dan hanya jika terdapat perubahan dalam anggaran yang digunakan untuk menentukan amaun boleh pulih. Pembalikan tersebut diiktiraf dalam Penyata Prestasi Kewangan.

Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(VI). Penjejasan Aset Bukan Kewangan...sambungan

(b). Penjejasan Nilai Aset Bukan Menjana Tunai

Suruhanjaya akan menilai pada setiap tarikh pelaporan sama ada terdapat petunjuk bahawa Aset Penjanaan Bukan Tunai mungkin terjejas. Jika sebarang petunjuk wujud, maka Suruhanjaya akan membuat anggaran ke atas jumlah perkhidmatan boleh pulih aset. Jumlah perkhidmatan boleh pulih aset adalah nilai tertinggi di antara nilai saksama ditolak kos untuk dijual dan nilai dalam penggunaan.

Kerugian kemerosotan diiktiraf sebagai perbelanjaan dalam Penyata Prestasi Kewangan serta-merta apabila nilai dibawa aset melebihi jumlah perkhidmatan boleh pulihnya.

Dalam menentukan nilai dalam penggunaan, Suruhanjaya telah mengguna pakai pendekatan kos penggantian yang disusut nilai. Di dalam pendekatan ini, nilai semasa baki potensi perkhidmatan aset ditentukan sebagai kos penggantian aset yang telah disusut nilai.

Kos penggantian yang disusut nilai akan diukur dengan mengambil kira kos penggantian aset ditolak susut nilai terkumpul yang dikira atas kos itu bagi mencerminkan potensi perkhidmatan aset yang telah digunakan atau sudah luput.

Dalam menentukan nilai saksama ditolak kos untuk dijual pula, harga aset dalam perjanjian yang mengikat akan dilaraskan dengan harga pelupusan aset tersebut. Jika tiada perjanjian yang mengikat, tetapi aset tersebut diniagakan di pasaran secara aktif, maka nilai saksama ditolak kos untuk dijual adalah ditentukan dengan merujuk kepada nilai pasaran terkini ditolak kos pelupusan. Jika tiada perjanjian jual yang mengikat atau pasaran aktif bagi aset, Ahli Lembaga menentukan nilai saksama ditolak kos untuk menjual berdasarkan maklumat yang ada yang terbaik.

Bagi setiap aset, penilaian dibuat pada setiap tarikh laporan sama ada terdapat sebarang petunjuk yang sebelum ini kerugian rosot nilai yang diiktiraf mungkin tidak lagi wujud atau telah berkurangan. Jika petunjuk sedemikian wujud, Suruhanjaya menganggarkan jumlah perkhidmatan boleh pulih aset. Kerugian kemerosotan nilai yang diiktiraf sebelumnya dibalikkan hanya jika terdapat perubahan dalam andaian yang digunakan untuk menentukan jumlah perkhidmatan boleh pulih aset sejak kerugian kemerosotan nilai

Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(VI). Penjejasan Aset Bukan Kewangan...sambungan

(b). Penjejasan Nilai Aset Bukan Menjana Tunai...sambungan

terakhir diiktiraf. Pembalikan adalah terhad setakat nilai dibawa aset tidak melebihi jumlah perkhidmatan boleh pulih atau tidak melebihi nilai dibawa yang mungkin setelah susut nilai terkumpul seperti tiada kerugian kemerosotan nilai diiktiraf bagi aset tersebut dalam tahun sebelumnya. Pembalikan tersebut diiktiraf dalam Penyata Prestasi Kewangan.

(VII). Tunai dan Kesetaraan Tunai

Tunai dan Kesetaraan Tunai merangkumi tunai di tangan dan baki bank, deposit di bank dan institusi kewangan lain serta pelaburan berjangka pendek yang mempunyai kecairan tinggi dengan tempoh matang 3 bulan dan kurang dari tarikh pembelian dan sedia ditukar dalam bentuk tunai dengan risiko perubahan nilai yang rendah.

Penyata Aliran Tunai disediakan menggunakan kaedah secara tidak langsung.

(VIII). Pelaburan Jangka Pendek

Pelaburan Jangka Pendek merupakan deposit di bank dan institusi kewangan lain serta pelaburan berjangka pendek yang mempunyai kecairan tinggi dengan tempoh matang lebih 3 bulan dan sehingga setahun dari tarikh pembelian dan sedia ditukar dalam bentuk tunai dengan risiko perubahan nilai yang rendah.

(IX). Kumpulan Wang Khas

Kumpulan Wang Khas merupakan peruntukan khas yang diterima daripada Akaun Amanah Industri Bekalan Elektrik (AAIBE) di bawah Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA) yang mana kini dikendalikan oleh Kementerian Peralihan Tenaga dan Transformasi Air (PETRA) dan Agensi Kerajaan

Nota-nota kepada Penyata Kewangan...sambungan

bagi tujuan-tujuan yang khusus.

3. Polisi Perakaunan...sambungan

(X). Percukaian

Cukai pendapatan ke atas untung atau rugi bagi tahun berkenaan ialah cukai semasa. Cukai semasa ialah amaun cukai pendapatan dijangka yang perlu dibayar atas untung boleh cukai bagi tahun berkenaan dan diukur dengan menggunakan kadar cukai yang digunakan pada tarikh Penyata Kedudukan Kewangan.

Perbelanjaan cukai semasa adalah bayaran cukai yang dijangkakan ke atas pendapatan yang boleh dikenakan cukai bagi tahun semasa, dengan menggunakan kadar cukai yang diwartakan atau sebahagian besarnya diwartakan pada tarikh Penyata Kedudukan Kewangan, dan sebarang perubahan pada bayaran cukai untuk tahun terdahulu.

Cukai tertunda diperuntukkan dengan menggunakan kaedah tanggungan untuk semua perbezaan masa terhasil di antara kadar cukai aset dan tanggungan dan nilai dibawa dalam penyata kewangan. Perbezaan bersifat sementara tidak diiktiraf bagi muhibah, yang tidak dibenarkan bagi tujuan percukaian, dan pada permulaan pengiktirafan aset atau tanggungan di mana pada masa transaksi ianya tidak mempengaruhi keuntungan berkanun dan keuntungan yang boleh dikenakan cukai. Jumlah cukai tertunda yang diperuntukkan adalah berdasarkan kepada jangkaan cara realisasi atau penyelesaian bagi nilai dibawa aset dan tanggungan, menggunakan kadar cukai diwartakan atau sebahagian besarnya diwartakan pada tarikh Penyata Kedudukan Kewangan.

Aset cukai tertunda diiktiraf hanya pada mana ianya berkemungkinan keuntungan yang boleh dikenakan cukai di masa hadapan boleh diperolehi dari aset yang digunakan.

(XI). Manfaat Pekerja

(a). Manfaat Pekerja Jangka Pendek

Upah, gaji dan bonus diiktiraf sebagai perbelanjaan dalam tahun di mana perkhidmatan dilaksanakan oleh pekerja-pekerja Suruhanjaya Tenaga. Cuti berganjaran terkumpul jangka pendek seperti cuti

Nota-nota kepada Penyata Kewangan...sambungan

tahunan berbayar diiktiraf apabila perkhidmatan dilaksanakan

3. Polisi Perakaunan...sambungan

(XI). Manfaat Pekerja...sambungan

(a). Manfaat Pekerja Jangka Pendek...sambungan

oleh pekerja yang akan meningkatkan kelayakan pekerja ke atas cuti berbayar hadapan, dan cuti berganjaran jangka pendek tidak terkumpul seperti cuti sakit hanya diiktiraf apabila cuti berlaku. Pengiktirafan Gantian Cuti Rehat adalah menggunakan *Actuarial Valuation Method*. Kemudahan perubatan seperti kemudahan rawatan pesakit luar, kemudahan skim hospital dan pembedahan berkumpulan dan kemudahan bersalin adalah diberikan kepada semua kakitangan tetap dan kontrak berdasarkan peruntukan yang telah ditetapkan di dalam Terma dan Syarat Perkhidmatan Suruhanjaya Tenaga yang sedang berkuat kuasa.

Manakala, manfaat pekerja seperti pemberian faedah persaraan berbentuk gratuiti dan subsidi bagi pinjaman perumahan, kenderaan dan peribadi yang akan dibayar dalam tahun kewangan akan datang dan diiktiraf secara akruan di dalam Penyata Prestasi Kewangan tahun semasa sebagai perbelanjaan dan di dalam Penyata Kedudukan Kewangan sebagai Liabiliti Semasa.

(b). Pelan Sumbangan Tetap

Mengikut undang-undang, majikan di Malaysia yang berkelayakan diwajibkan memberi sumbangan tetap ke atas Kumpulan Wang Simpanan Pekerja dan PERKESO. Sumbangan tersebut diiktiraf sebagai perbelanjaan di dalam Penyata Prestasi Kewangan. Tanggungan untuk pelan sumbangan tetap, diiktiraf sebagai perbelanjaan semasa di dalam Penyata Prestasi Kewangan.

(c). Manfaat Pekerja Jangka Panjang

Manfaat Pekerja Jangka Panjang ialah pemberian faedah persaraan berbentuk Gantian Cuti Rehat dan Gratuiti kepada kakitangan-kakitangan tetap yang telah berkhidmat minimum 10 tahun dengan kadar pengiraan gratuiti seperti yang diluluskan oleh YB Menteri. lanya merupakan bayaran manfaat pekerja yang dibayar selepas bersara dan diiktiraf secara akruan dalam Penyata Prestasi Kewangan tahun

Nota-nota kepada Penyata Kewangan...sambungan

semasa sebagai

3. Polisi Perakaunan...sambungan

(XI). Manfaat Pekerja...sambungan

(c). Manfaat Pekerja Jangka Panjang...sambungan

perbelanjaan dan di dalam Penyata Kedudukan Kewangan sebagai Liabiliti Bukan Semasa. Pengiktirafan dengan menggunakan *Actuarial Valuation Method*.

(XII). Pengiktirafan Pendapatan

(a). Hasil daripada Urusniaga Pertukaran

Hasil daripada urusniaga pertukaran diiktiraf apabila terdapat kemungkinan bahawa manfaat ekonomi masa hadapan atau potensi perkhidmatan akan mengalir kepada entiti dan manfaat ini boleh diukur dengan pasti. Hasil daripada urusniaga pertukaran Suruhanjaya Tenaga adalah seperti berikut:

(i). Pendapatan faedah bagi simpanan semasa di bank yang dikira berasaskan tunai.
(ii). Pendapatan faedah daripada simpanan tetap di bank dengan tempoh matang tiga (3) bulan atau kurang dari tempoh pembelian diiktiraf atas dasar akruan.
(iii). Pendapatan faedah daripada pelaburan jangka pendek yang mempunyai tempoh matang lebih dari tiga (3) bulan dan sehingga setahun diiktiraf atas dasar akruan.
(iv). Lain-lain pendapatan yang terdiri daripada jualan dokumen tender, jualan buku-buku berkaitan industri, jualan aset tetap dan caj/penalti.

(b). Hasil daripada Urusniaga Bukan Pertukaran

Hasil daripada urusniaga bukan pertukaran akan diiktiraf sebagai aset apabila terdapat manfaat ekonomi masa depan atau potensi perkhidmatan dijangka mengalir ke dalam entiti, ianya berpunca daripada peristiwa lampau serta nilai saksama aset dapat diukur dengan munasabah.

Urusniaga bukan pertukaran yang diiktiraf sebagai aset hendaklah diiktiraf sebagai hasil, kecuali setakat liabiliti yang juga diiktiraf berkenaan dengan aliran masuk yang sama sebagai tertunda di dalam Penyata Kewangan.

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Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(XII). Pengiktirafan Pendapatan...sambungan

(b). Hasil daripada Urusniaga Bukan Pertukaran...sambungan

Apabila obligasi terhadap sesuatu liabiliti itu telah dipenuhi, entiti hendaklah mengurangkan amaun bawaan liabiliti yang diiktiraf itu, dan mengiktiraf amaun hasil yang sama dengan pengurangan itu. Hasil daripada urusniaga bukan pertukaran Suruhanjaya Tenaga adalah seperti berikut:

(i). Pendapatan daripada Pelesenan Awam dan Persendirian diambil kira mengikut asas tunai memandangkan tanggungjawab pembayaran tahunan adalah pada pemegang-pemegang lesen.

(ii). Pendapatan daripada Pendaftaran dan Pembaharuan Fi Operasi, serta Lain-Lain Fi Operasi diambilkira mengikut asas tunai.

(XIII). Pendedahan Pihak Berkaitan

Pihak-pihak yang dianggap berkaitan jika satu pihak mempunyai keupayaan untuk mengawal pihak lain atau melaksanakan pengaruh ke atas pihak lain, setakat mana ia menghalang pihak lain dari mengejar kepentingan sendiri yang berasingan dalam membuat keputusan kewangan dan operasi.

(XIV). Peruntukan

Peruntukan diiktiraf apabila Suruhanjaya Tenaga mempunyai obligasi semasa yang konstruktif dari segi undang-undang, kesan daripada peristiwa lalu dan berkemungkinan bahawa aliran keluar sumber yang melibatkan manfaat ekonomi akan diperlukan untuk menyelesaikan obligasi tersebut dan amaun obligasi itu boleh dianggarkan dengan pasti.

Peruntukan disemak pada setiap tarikh pelaporan dan diselaraskan untuk membayangkan anggaran semasa terbaik. Jika tiada lagi kemungkinan bahawa aliran keluar sumber ekonomi akan diperlukan untuk menyelesaikan obligasi itu, peruntukan tersebut akan dibalikkan. Sekiranya kesan nilai masa wang adalah ketara, peruntukan akan didiskaunkan menggunakan kadar sebelum cukai semasa yang menggambarkan, bila mana bersesuaian, risiko khusus

Nota-nota kepada Penyata Kewangan...sambungan

3. Polisi Perakaunan...sambungan

(XIV). Peruntukan...sambungan

kepada liabiliti tersebut. Apabila pendiskaunan digunakan, peningkatan dalam peruntukan yang disebabkan oleh peredaran masa diiktiraf sebagai kos kewangan.

(XV). Tukaran Wang Asing

Urus niaga yang dibuat dengan menggunakan mata wang asing telah ditukarkan kepada Ringgit Malaysia dengan kadar yang ditetapkan pada masa urus niaga dilaksanakan.

(XVI). Liabiliti dan Aset Luar Jangka

Liabiliti luar jangka adalah obligasi semasa yang tidak diiktiraf kerana tiada kebarangkalian aliran keluar sumber akan diperlukan untuk menyelesaikan obligasi atau dalam kes yang sangat jarang berlaku di mana liabiliti tidak dapat diiktiraf kerana ia tidak boleh diukur secara pasti. Liabiliti luar jangka tidak diiktiraf tetapi didedahkan dalam Nota 21 kepada Penyata Kewangan.

Obligasi yang muncul dari peristiwa yang lepas, yang kewujudannya hanya dapat disahkan melalui berlakunya atau tidak berlakunya satu atau lebih peristiwa akan datang yang belum pasti, tidak di bawah kawalan Suruhanjaya Tenaga juga didedahkan sebagai liabiliti luar jangka melainkan kebarangkalian aliran keluar sumber ekonomi adalah kecil.

Aset luar jangka adalah aset yang berkemungkinan wujud daripada peristiwa lalu yang kewujudannya akan hanya disahkan apabila berlaku atau tidak berlakunya satu atau lebih peristiwa yang tidak pasti pada masa hadapan yang bukan dalam kawalan penuh Suruhanjaya Tenaga.

Suruhanjaya Tenaga tidak mengiktiraf aset luar jangka dalam penyata kewangan tetapi mendedahkan

SURUHANJAYA TENAGA

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Nota-nota kepada Penyata Kewangan...sambungan

kewujudannya di mana aliran masuk manfaat ekonomi adalah berkemungkinan, tetapi tidak pasti.

3. Polisi Perakaunan...sambungan

(XVII). Maklumat Bajet

Bajet tahunan disediakan pada asas tunai. Memandangkan penyata kewangan disediakan menggunakan asas akruan, maka satu Penyata Prestasi Bajet telah disediakan yang membandingkan bajet tahun semasa dan juga sebenar tahun semasa.

Penyata ini telah disediakan menggunakan asas penyediaan bajet tahunan dan hanya merujuk kepada bajet mengurus dan pembangunan. Jumlah bajet hanya dibentangkan bagi pihak Suruhanjaya Tenaga dan ia telah diluluskan oleh Menteri Tenaga dan Sumber Asli (kini dikenali sebagai Menteri Peralihan Tenaga dan Transformasi Air).

4. Tunai dan Kesetaraan Tunai

	2023 RM	2022 RM
Wang Tunai dan Baki di Bank	49,655,352	42,530,246
Deposit di Bank Berlesen	115,414,079	109,460,920
JUMLAH	**165,069,431**	**151,991,166**

Wang Tunai dan Baki di Bank adalah termasuk dana Kumpulan Wang Khas sebanyak RM2,273,311 (2022: RM2,326,682).

5. Pelaburan Jangka Pendek

	2023 RM	2022 RM
Deposit Berjangka-i	265,737,286	282,951,009
Deposit Komoditi Murabahah	162,535,613	130,427,753
JUMLAH	**428,272,899**	**413,378,762**

Pelaburan Jangka Pendek mempunyai tempoh matang lebih 3 bulan dan sehingga 12 bulan dengan kadar faedah berbeza untuk setiap institusi kewangan dari 4.00% sehingga 4.15% (2022: 2.35% sehingga 4.00%).

Nota-nota kepada Penyata Kewangan...sambungan

6. Pelbagai Akaun Belum Terima, Deposit dan Pendahuluan

	2023 RM	2022 RM
Pendahuluan Kakitangan	41,998	4,373
Deposit Keahlian Kelab	92,000	92,000
Lain-lain deposit dan Penghutang	1,126,114	573,636
JUMLAH	**1,260,112**	**670,009**

Lain-lain Deposit dan Penghutang adalah terdiri daripada deposit sewa tujuh pejabat kawasan, pejabat kawasan baharu iaitu Pejabat Kawasan Wilayah Persekutuan, stor, tempat letak kenderaan serta deposit penggunaan fasiliti lain seperti deposit bagi perkhidmatan perubatan (*Third Party Administrator*), ruang iklan pejabat kawasan, elektrik dan lain-lain.

7. Pendapatan Faedah Belum Terima

	2023 RM	2022 RM
Hasil Faedah Terakru	4,308,841	3,428,328
JUMLAH	**4,308,841**	**3,428,328**

Pendapatan Faedah Belum Terima adalah faedah belum matang bagi simpanan tetap yang diambil kira sehingga 31 Disember setiap tahun.

SURUHANJAYA TENAGA

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371)

Nota-nota kepada Penyata Kewangan...sambungan

8. Cukai Terdahulu

	2023 RM	2022 RM
Cukai Terdahulu pada 1 Januari	1,692,162	1,234,293
Pelarasan cukai tahun sebelum	(72,356)	-
	1,619,806	1,234,293
Bayaran CP500	2,462,993	4,105,545
Bayaran cukai terdahulu terkumpul	4,082,799	5,339,838
Peruntukan Cukai Tahun Semasa (Nota 20)	(5,916,237)	(3,647,676)
(Cukai Kena Bayar)/Cukai Terdahulu pada 31 Disember	(1,833,438)	1,692,162

Pelarasan cukai tahun sebelum dibuat oleh pihak Lembaga Hasil Dalam Negeri bagi Tahun Taksiran 2021.

Nota-nota kepada Penyata Kewangan...sambungan

9. Hartanah, Kelengkapan dan Peralatan

2023

	Tanah	Bangunan	Kenderaan Bermotor	Perabot, Kelengkapan, Ubahsuai dan Peralatan Penguatkuasaan	Peralatan Pejabat (Elektronik)	Sistem Aplikasi dan Komputer	Lekapan dan Kelengkapan	Jumlah
	RM	RM	RM	RM	RM	RM	RM	RM
Kos								
Pada 1 Januari	8,299,405	79,205,160	4,549,931	7,390,236	5,590,889	6,193,000	1,585,140	112,813,761
Penambahan	-	-	555,435	99,027	297,692	213,432	-	1,165,586
Pelupusan/Pindahan	-	-	(1,243,834)	-	(8,910)	(191,987)	-	(1,444,731)
Pada 31 Disember	8,299,405	79,205,160	3,861,532	7,489,263	5,879,671	6,214,445	1,585,140	112,534,616
Susut Nilai Terkumpul								
Pada 1 Januari	-	15,048,979	3,780,118	6,731,452	4,995,642	5,316,883	1,562,709	37,435,783
Susut Nilai Tahun Semasa	-	1,584,103	362,691	299,439	162,369	497,696	11,001	2,917,299
Pelupusan/Pindahan	-	-	(1,243,829)	-	(8,909)	(190,919)	-	(1,443,657)
Pada 31 Disember	-	16,633,082	2,898,980	7,030,891	5,149,102	5,623,660	1,573,710	38,909,425
Nilai Buku Bersih								
Pada 31 Disember	**8,299,405**	**62,572,078**	**962,552**	**458,372**	**730,569**	**590,785**	**11,430**	**73,625,191**

Nota-nota kepada Penyata Kewangan...sambungan

9. Hartanah, Kelengkapan dan Peralatan

	Tanah	Bangunan	Kenderaan Bermotor	Perabot, Kelengkapan, Ubahsuai dan Peralatan Penguatkuasaan	Peralatan Pejabat (Elektronik)	Sistem Aplikasi dan Komputer	Lekapan dan Kelengkapan	Jumlah
	RM	RM	RM	RM	RM	RM	RM	RM
Kos								
Pada 1 Januari	8,299,405	79,205,160	4,144,439	7,232,401	5,335,731	5,552,560	1,585,140	111,354,836
Penambahan	-	-	405,492	157,835	255,158	661,560	-	1,480,045
Pelupusan/Pindahan	-	-	-	-	-	(21,120)	-	(21,120)
Pada 31 Disember	8,299,405	79,205,160	4,549,931	7,390,236	5,590,889	6,193,000	1,585,140	112,813,761
Susut Nilai Terkumpul								
Pada 1 Januari	-	13,464,876	3,565,494	6,419,110	4,822,964	4,871,067	1,551,709	34,695,220
Susut Nilai Tahun Semasa	-	1,584,103	214,624	312,342	172,678	466,932	11,000	2,761,679
Pelupusan/Pindahan	-	-	-	-	-	(21,116)	-	(21,116)
Pada 31 Disember	-	15,048,979	3,780,118	6,731,452	4,995,642	5,316,883	1,562,709	37,435,783
Nilai Buku Bersih								
Pada 31 Disember	**8,299,405**	**64,156,181**	**769,813**	**658,784**	**595,247**	**876,117**	**22,431**	**75,377,978**

Nota-nota kepada Penyata Kewangan...sambungan

2022

10. Aset Tak Ketara

2023

	Hak Cipta RM	Cap Dagangan RM	Jumlah RM
Kos			
Pada 1 Januari	-	-	-
Penambahan	600	11,464	12,064
Pada 31 Disember	600	11,464	12,064
Pelunasan Terkumpul			
Pada 1 Januari	-	-	-
Perbelanjaan Pelunasan	4	382	386
Pada 31 Disember	4	382	386
Nilai Buku Bersih			
Pada 31 Disember	596	11,082	11,678

Aset Tak Ketara Suruhanjaya Tenaga adalah untuk Hak Cipta dan Cap Dagangan yang didaftarkan ke atas RoboST dan Adiwira ST pada tahun 2023.

11. Pelbagai Akaun Belum Bayar dan Perbelanjaan Terakru

	2023 RM	2022 RM
Akaun Belum Bayar	38,206	9,765
Akaun Belum Bayar Terakru	14,493,191	15,270,182
Kompaun Kumpulan Wang Disatukan di bawah Kementerian	-	27,000
Yuran Audit	53,011	50,562
JUMLAH	**14,584,408**	**15,357,509**

Akaun Belum Bayar dan Belum Bayar Terakru adalah tidak dikenakan faedah dan pada kebiasaannya diselesaikan atas terma 30 hari.

Nota-nota kepada Penyata Kewangan...sambungan

12. Peruntukan Manfaat Pekerja

	2023 RM	2022 RM
Pada 1 Januari	23,410,154	20,151,072
Peruntukan bagi Tahun Semasa	5,996,385	7,421,440
Bayaran pada Tahun Semasa	(4,507,935)	(4,162,358)
Pada 31 Disember	**24,898,604**	**23,410,154**

Struktur kematangan Peruntukan Manfaat Pekerja adalah seperti berikut:

	2023 RM	2022 RM
Matang dalam Tempoh 12 Bulan	5,255,798	3,282,678
Matang dalam Tempoh Melebihi 12 bulan	19,642,806	20,127,476
JUMLAH	**24,898,604**	**23,410,154**

Andaian Aktuari yang digunakan untuk pengiraan Peruntukan Manfaat Pekerja bagi Gratuiti adalah menggunakan kadar purata kenaikan gaji tahunan iaitu 5.0% (2022: 5.0%) dan kadar purata diskaun iaitu 4.29% (2022: 4.29%) manakala pengiraan bagi Gantian Cuti Rehat adalah menggunakan kadar purata kenaikan gaji tahunan iaitu 5.0% (2022: 5.0%) dan kadar purata diskaun iaitu 4.26% (2022: 4.26%).

Nota-nota kepada Penyata Kewangan...sambungan

13. Kumpulan Wang Khas

2023

	Akaun Wang Khas PPKTL	Akaun Wang Khas MyPower	Akaun Wang Khas PR&PLL	Akaun Wang Khas MEIH dan MyEnergy Stats	Akaun Wang Khas NEEAP	Jumlah
	RM	**RM**	**RM**	**RM**	**RM**	**RM**
Baki pada 1 Januari 2023	65,750	1,961	2,105,952	153,019	-	**2,326,682**
Pendapatan:						
Pemberian Kerajaan/ Agensi	-	-	-	249,585	244,953	**494,538**
Faedah Bank	670	3	21,166	140	7	**21,986**
	670	3	21,166	249,725	244,960	**516,524**
(-) Perbelanjaan						
Caj bank	(2)	(10)	-	-	-	**(12)**
Perbelanjaan/ Pelunasan dalam tahun	-	-	-	(324,930)	(244,953)	**(569,883)**
	(2)	(10)	-	(324,930)	(244,953)	**(569,895)**
(Kurangan)/Lebihan	668	(7)	21,166	(75,205)	7	**(53,371)**

Nota-nota kepada Penyata Kewangan...sambungan

Baki pada 31 Disember 2023	**66,418**	**1,954**	**2,127,118**	**77,814**	**7**	**2,273,311**

13. Kumpulan Wang Khas...sambungan

2022

	Akaun Wang Khas PPKTL	Akaun Wang Khas MyPower	Akaun Wang Khas PR&PLL	Akaun Wang Khas MEIH dan MyEnergy Stats	Jumlah
	RM	RM	RM	RM	RM
Baki pada 1 Januari 2022	158,547	1,968	5,545,704	-	**5,706,219**
Pendapatan:					
Pemberian Kerajaan/Agensi	-	-	-	153,000	**153,000**
Faedah Bank	1,603	3	51,724	19	**53,349**
	1,603	3	51,724	153,019	**206,349**
(-) Perbelanjaan					
Caj bank	-	(10)	-	-	**(10)**
Perbelanjaan/Pelunasan dalam tahun	(94,400)	-	(3,491,476)	-	**(3,585,876)**
	(94,400)	(10)	(3,491,476)	-	**(3,585,886)**
(Kurangan)/Lebihan	(92,797)	(7)	(3,439,752)	153,019	**(3,379,537)**
Baki pada 31 Disember 2022	**65,750**	**1,961**	**2,105,952**	**153,019**	**2,326,682**

Kumpulan Wang Khas merupakan peruntukan khas yang diterima daripada Akaun Amanah Industri Bekalan Elektrik (AAIBE) di bawah Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA) yang mana kini dikendalikan oleh Kementerian Peralihan Tenaga dan Transformasi Air (PETRA) bagi tujuan-tujuan yang khusus. Butiran setiap akaun di bawah Kumpulan Wang Khas adalah seperti berikut:

(i). **Akaun Wang Khas PPKTL:** bertujuan membiayai Projek Pelan Komunikasi Tenaga Lestari untuk mempromosi tenaga lestari yang merangkumi bidang kecekapan tenaga dan tenaga boleh baharu, serta memupuk kesedaran dan meningkatkan pengetahuan orang ramai terhadap kerangka perundangan dan kawal selia tenaga lestari.

(ii). **Akaun Wang Khas MyPower:** bertujuan membiayai pelaksanaan inisiatif bagi projek di bawah RMKe-10 iaitu *Stabilization Mechanism, Ring Fencing Single Buyer, Fuel Supply and Security* dan *Industry Structure*.

Nota-nota kepada Penyata Kewangan...sambungan

(iii). **Akaun Wang Khas PR & PLL:** bagi membiayai Projek Retrofit dan Pemasangan Lampu LED di bangunan kementerian terpilih yang mula dilaksanakan pada awal tahun 2015.

13. Kumpulan Wang Khas...sambungan

(iv). **Akaun Wang Khas MEIH dan MyEnergyStats:** peruntukan diperolehi daripada AAIBE untuk membiayai projek penambahbaikan portal Malaysia Energy Hub (MEIH) dan Aplikasi Mobile MyEnergyStats yang bermula pada 1 Oktober 2022 iaitu sebanyak RM153,000. Pada tahun 2023, tambahan sebanyak RM249,585 telah diterima untuk pembayaran kemajuan pertama dan menjadikan jumlah perbelanjaan tahun 2023 berjumlah RM324,930 bagi pembayaran kemajuan pertama dan lain-lain perbelanjaan berkaitan keperluan projek.

(v). **Akaun Wang Khas NEEAP:** peruntukan diperolehi daripada AAIBE untuk membiayai kajian pembangunan Pelan Tindakan Kecekapan Tenaga Negara 2.0 oleh Suruhanjaya Tenaga. Pada tahun 2023, sebanyak RM244,953 telah diperolehi bagi membuat pembayaran kemajuan pertama projek.

14. Yuran dan Caj

	2023 RM	2022 RM
Pelesenan Awam dan Persendirian	82,083,847	95,353,682
Pendaftaran/Pembaharuan Fi Operasi	34,338,760	34,913,740
Lain-lain Fi Operasi	1,267,090	1,085,471
JUMLAH	**117,689,697**	**131,352,893**

15. Lain-lain Pendapatan

	2023 RM	2022 RM
Hasil Jualan Dokumen Tender dan Laporan Siasatan	17,100	113,100
Hasil daripada Pelupusan Aset Tetap	186,558	690
Hasil Jualan Buku dan Lain-Lain	8,736	18,089

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Nota-nota kepada Penyata Kewangan...sambungan

JUMLAH	**212,394**	**131,879**

16. Gaji, Elaun dan Manfaat Pekerja

	2023 RM	2022 RM
Gaji dan Elaun Kakitangan	41,125,748	40,714,348
Elaun Anggota Suruhanjaya Tenaga	718,192	663,224
Sumbangan Berkanun	8,365,412	8,240,223
Subsidi Faedah Pinjaman	3,540,124	3,055,053
Gratuiti	2,204,633	4,582,854
Panel Perubatan	3,799,129	3,058,579
Bonus Kakitangan	8,675,160	8,577,693
Lain-lain Faedah Kewangan	1,612,378	1,257,208
JUMLAH	**70,040,776**	**70,149,182**

Bilangan kakitangan Suruhanjaya Tenaga pada 31 Disember 2023 adalah seramai 380 orang manakala pada tahun 2022 adalah seramai 369 orang. Bilangan Anggota Suruhanjaya Tenaga bagi tahun 2023 adalah seramai 9 orang sama seperti tahun 2022. Sumbangan Berkanun adalah merangkumi caruman kepada Kumpulan Wang Simpanan Pekerja (KWSP) berjumlah RM7,981,422 (2022: RM7,921,614), Pertubuhan Keselamatan sosial (PERKESO) berjumlah RM373,975 (2022: RM313,119) dan Kumpulan Wang Persaraan (Diperbadankan) berjumlah RM10,015 (2022: RM5,490).

17. Penyenggaraan

	2023 RM	2022 RM
Penyenggaraan Sistem Aplikasi	5,188,036	4,788,758

Nota-nota kepada Penyata Kewangan...sambungan

Penyenggaraan Alatan, Kenderaan dan Bangunan Pejabat	1,899,448	2,382,354
JUMLAH	**7,087,484**	**7,171,112**

18. Perkhidmatan Ikhtisas

	2023 RM	2022 RM
Fi Audit	53,011	50,562
Fi Profesional dan Konsultan	7,455,296	7,270,388
Pembangunan Kompetensi dan Pengurusan Prestasi	956,040	705,415
Perbelanjaan-perbelanjaan lain	2,020,386	1,599,178
JUMLAH	**10,484,733**	**9,625,543**

19. Perbelanjaan Lain

	2023 RM	2022 RM
Kumpulan Wang Disatukan Persekutuan	5,340,000	5,250,000
Touch point	179,482	305,213
Tanggungjawab Sosial Korporat	362,356	246,980
Energy Efficiency Challenge	124,585	137,395

Nota-nota kepada Penyata Kewangan...sambungan

	6,006,423	**5,939,588**

Perbelanjaan Lain merangkumi perbelanjaan sumbangan atau penajaan yang dibuat oleh Suruhanjaya Tenaga.

20. Cukai

	2023 RM	2022 RM
Perbelanjaan Cukai		
Tahun Semasa	5,916,237	3,647,676
Pelarasan Tahun Sebelum	(94,165)	-
	5,822,072	3,647,676
Penyesuaian Kadar Cukai Efektif		
Lebihan Pendapatan Sebelum Cukai	29,336,403	38,589,462
Cukai pada Kadar 30%	8,800,921	11,576,839
Pendapatan yang Dikecualikan Cukai	(2,884,684)	(7,929,163)
Pelarasan Tahun Sebelum	(94,165)	-
	5,822,072	**3,647,676**

Suruhanjaya Tenaga telah mendapat pengecualian cukai pendapatan di bawah Seksyen 127(3)b Akta Cukai Pendapatan 1967 yang diberikan oleh Kementerian Kewangan pada 19 Oktober 2004. Pengecualian cukai tersebut diberikan hanya ke atas pendapatan berkanun yang berikut:

(i). Pendapatan yang diterima daripada Kerajaan Persekutuan atau Kerajaan Negeri dalam bentuk suatu pemberian atau subsidi;
(ii). Pendapatan yang diterima berkenaan dengan suatu amaun yang boleh dikenakan ke atas atau dipungut daripada mana-mana orang mengikut peruntukan Akta yang mengawal selia pihak berkuasa berkanun; dan
(iii). Derma atau sumbangan yang diterima.

21. Maklumat Bajet

Nota-nota kepada Penyata Kewangan...sambungan

Bajet Suruhanjaya Tenaga diluluskan oleh Kementerian Peralihan Tenaga dan Transformasi Air (PETRA) untuk meliputi tempoh fiskal bermula dari 1 Januari 2023 hingga 31 Disember 2023.

Berikut adalah perbezaan material bagi perbelanjaan tertentu di antara amaun Bajet Akhir dan Sebenar pada tahun 2023:

21. Maklumat Bajet ...sambungan

	Sebenar 2023	Bajet Akhir 2023	Perbezaan Bajet Akhir dengan Sebenar
	RM	RM	RM
HASIL			
Hasil Operasi	117,689,697	120,087,065	(2,397,368)
Pendapatan Faedah, Keuntungan Hibah dan Lain-lain Pendapatan	20,163,113	11,210,000	8,953,113
PERBELANJAAN			
Emolumen	70,040,776	77,283,300	7,242,524
Penyenggaraan	5,980,098	8,107,900	2,127,802
Perkhidmatan lkhtisas	12,150,739	16,690,600	4,539,861
Perbelanjaan Lain	636,483	10,393,000	9,756,517
Aset	394,527	2,385,200	1,990,673

Kutipan hasil daripada Pelesenan Awam Elektrik dan Gas menyumbang kepada peningkatan Hasil Operasi sebenar bagi tahun 2023 berbanding bajet akhir. Pengurangan kutipan hasil adalah kerana terdapat penamatan Lesen Awam pada tahun 2023.

Pendapatan Faedah tahun 2023 berbanding bajet akhir tahun 2023 adalah kerana kadar hibah simpanan tetap yang meningkat dengan kadar purata 3.89% berbanding tahun 2022 iaitu 3.10%.

Perbezaan Bajet Akhir dengan Bajet Asal tahun 2023 adalah setelah mengambil kira pindahan bajet yang dibenarkan berdasarkan Had Kuasa Kewangan dan Manual Prosedur Kewangan Suruhanjaya Tenaga (Pindaan 2017). Bagaimanapun, jumlah pindahan bajet adalah mengikut keperluan dan tidak melebihi jumlah keseluruhan bajet yang telah diluluskan untuk tahun 2023.

Sehingga 31 Disember 2023, terdapat perbezaan jumlah bajet akhir dengan perbelanjaan sebenar Emolumen kerana perbelanjaan yang telah dibuat adalah untuk bilangan kakitangan seramai 380 orang manakala bajet yang

Nota-nota kepada Penyata Kewangan...sambungan

diluluskan adalah untuk 394 orang.

Perbelanjaan Penyenggaraan dibuat adalah secara berkala. Sebahagian daripada jumlah perbezaan bajet akhir dengan perbelanjaan sebenar Penyenggaraan telah direkodkan sebagai komitmen bagi kerja-kerja penyenggaraan yang telah dijadualkan dengan menggunakan bajet tahun 2023.

21. Maklumat Bajet...sambungan

Perbezaan perbelanjaan sebenar tahun 2023 dengan bajet akhir bagi Perkhidmatan Ikhtisas adalah kerana pembayaran dibuat berdasarkan kerja-kerja yang dilaksanakan mengikut kemajuan dan baki kerja yang belum selesai direkodkan sebagai Komitmen.

Perbezaan perbelanjaan sebenar tahun 2023 dengan bajet akhir bagi Perbelanjaan Lain disebabkan oleh peruntukan Sumbangan kepada Kumpulan Wang Disatukan Persekutuan bagi tahun 2023 yang berjumlah RM9,730,000 direkodkan sebagai Komitmen.

Nota-nota kepada Penyata Kewangan...sambungan

Sebahagian daripada baki bajet akhir Aset direkodkan sebagai Komitmen bagi Ubahsuai ruang pejabat *Suruhanjaya Tenaga Operation Centre* (STOC) sebanyak RM491,660 manakala baki sebanyak RM514,982 adalah untuk perolehan aset lain iaitu kelengkapan pejabat, perabot, peralatan elektrik dan elektronik serta komputer.

22. Komitmen

	2023 RM	2022 RM
Hartanah, Kelengkapan dan Peralatan	1,006,642	790,706
Perkhidmatan lkhtisas	14,954,596	15,589,571
Bekalan Pejabat dan Penyenggaraan	2,434,286	1,696,318
Perbelanjaan lain - Sumbangan	9,730,000	5,370,000
Sewaan	31,950	-
JUMLAH	**28,157,474**	**23,446,595**

Komitmen bagi tahun berakhir 31 Disember 2023 di bawah Hartanah, Kelengkapan dan Peralatan berjumlah RM1,006,642 adalah termasuk perolehan ubahsuai ruang pejabat, komputer dan perkakasan, kelengkapan perabot dan peralatan elektronik. Perkhidmatan lkhtisas adalah terdiri daripada perkhidmatan bagi projek yang sedang dilaksanakan di bawah kajian dan pembangunan ST berjumlah RM12,905,774 dan perkhidmatan ikhtisas mengurus seperti perkhidmatan penerbitan, pengujian barang kecekapan tenaga, perkhidmatan pengangkutan dan lain-lain berjumlah RM2,048,822.

Komitmen untuk Penyenggaraan bagi tahun berakhir 31 Disember 2023 adalah untuk aktiviti menyenggara peralatan pejabat, khidmat sokongan sistem rangkaian ICT dan penyenggaraan bangunan berjumlah RM2,073,529 manakala kos Bekalan Pejabat berjumlah RM360,757. Selain itu, terdapat juga Komitmen untuk Sumbangan Kumpulan Wang

Nota-nota kepada Penyata Kewangan...sambungan

Disatukan Persekutuan (KWDP) berjumlah RM9,730,000 serta Sewaan kenderaan berjumlah RM31,950.

Jumlah Komitmen bagi tahun 2022 sebanyak RM23,446,595 meliputi kos berkaitan Hartanah, Kelengkapan dan Peralatan, Perkhidmatan lkhtisas, Penyenggaraan, Bekalan Pejabat dan Sumbangan.

23. Liabiliti Luar Jangka

1. Strong Elegance Sdn Bhd

Pada 18 Disember 2020, suatu tindakan sivil telah difailkan di Mahkamah Tinggi Kuala Lumpur terhadap ST oleh Strong Elegance Sdn Bhd ("SE") untuk, antara lainnya, suatu deklarasi bahawa penarikan balik Surat Awad untuk projek Large Scale Solar 1 bertarikh 2 Mei 2017 oleh ST adalah tidak sah dan ganti rugi umum dan ganti rugi teladan untuk dinilai oleh Mahkamah. Pada 15 Mac 2023, Hakim Mahkamah Tinggi telah membenarkan permohonan SE untuk perintah deklarasi tersebut, dan seterusnya mengarahkan SE dan ST untuk meneruskan dengan prosiding bicara taksiran ganti rugi.

ST telah memfailkan Notis Usul di Mahkamah Rayuan untuk penggantungan pelaksanaan pada 31 Mei 2023 serta Notis Rayuan ke Mahkamah Rayuan untuk merayu terhadap keputusan Mahkamah Tinggi tersebut. Pada 2 November 2023, perintah penggantungan telah diberikan oleh Mahkamah Rayuan dan Mahkamah Rayuan menetapkan tarikh Keputusan bagi rayuan pada 29 Februari 2024. Pada tarikh tersebut, Mahkamah Rayuan telah memutuskan bahawa rayuan ST dibenarkan dengan membatalkan perintah deklarasi yang diberikan oleh Mahkamah Tinggi, dan mengenepikan keputusan Mahkamah Tinggi untuk pihak-pihak meneruskan bicara taksiran ganti rugi.

Di peringkat Mahkamah Tinggi pula, Hakim Mahkamah Tinggi semasa Pengurusan Kes pada 5 Mac 2024 mengambil maklum Keputusan Mahkamah Rayuan pada 29 Februari 2024 tersebut. Namun memandangkan salinan perintah termeterai (*sealed order*) bagi Keputusan Mahkamah Rayuan masih belum diterima oleh Mahkamah Tinggi, maka Hakim Mahkamah Tinggi telah menetapkan tarikh bicara taksiran ganti rugi pada 12 dan 13 September 2024. Setelah salinan perintah termeterai Keputusan Mahkamah Rayuan diterima Mahkamah Tinggi, tarikh-tarikh bicara akan dilapangkan.

2. Icon City JMB v Mah Sing Utilities, Icon City Development Sdn Bhd Suruhaniaya Tenaga

Plaintif, sebuah Badan Pengurusan Bersama (JMB) di pembangunan bercampur Icon City. Icon City yang dibangunkan oleh Defendan kedua. Pemindahan obligasi dari Defendan kedua kepada JMB adalah pada Disember 2016 termasuklah pemindahan 9 pepasangan bersama dengan kewajipan menyelenggara kesemua pepasangan tersebut.

Nota-nota kepada Penyata Kewangan...sambungan

Plaintif merasakan telah berlakunya "unjust enrichment" dan "undue benefit" apabila pihak Defendan kedua telah mengenakan caj yang terlalu tinggi bagi pembekalan elektrik (perubahan tarif CI ke tarif B) kepada 9 buah pepasangan bagi tenaga elektrik yang digunakan di 10 kawasan awam dan caj yang tinggi bagi perkhidmatan penyenggaran dan servis 9 buah pepasangan. Dalam tindakan ini, ST telah dinamakan sebagai Defendan ketiga dan disaman dalam kapasiti nominal.

23. Liabiliti Luar Jangka...sambungan

2. Icon City JMB v Mah Sing Utilities, Icon City Development Sdn Bhd Suruhaniaya Tenaga...sambunqan
Pada 29 Ogos 2023, Mahkamah telah membenarkan permohonan ST untuk mengenepikan tuntutan Plaintif dengan kos sebanyak RM5,000.00. Walau bagaimanapun, pihak Plaintif telah memfailkan rayuan terhadap perintah Mahkamah tersebut dimana rekod rayuan telah difailkan oleh Perayu pada 23 November 2023.

CERTIFICATE OF THE AUDITOR GENERAL
ON THE FINANCIAL STATEMENTS OF
ENERGY COMMISSION
FOR THE YEAR ENDED 31 DECEMBER 2023

Certificate on the Audit of the Financial Statements

Opinion

I have authorised a private audit firm pursuant to subsection 7(3) of the Audit Act 1957 [*Act 62*] to undertake an audit of the Financial Statements of the Energy Commission. The financial statements comprise the Statement of Financial Position as at 31 December 2023 of the Energy Commission and the Statement of Financial Performance, Statement of Changes in Net Assets/Equity, Statement of Cash Flows and Statement of Budget Performance for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, as set out on pages 1 to 36.

In my opinion, the accompanying financial statements give a true and fair view of the financial position of the Energy Commission as at 31 December 2023, and of its financial performance and its cash flows for the year then ended in accordance with the Malaysian Public Sector Accounting Standards (MPSAS) and the Energy Commission Act 2001 [*Act 610*] and Energy Commission (Amendment) Act 2010 [*Act A1371*] requirements.

Basis for Opinion

The audit was conducted in accordance with the Audit Act 1957 and the International Standards of Supreme Audit Institutions. My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my certificate. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Independence and Other Ethical Responsibilities

I am independent of the Energy Commission and I have fulfilled my other ethical responsibilities in accordance with the International Standards of Supreme Audit Institutions.

Information Other than the Financial Statements and Auditor's Certificate Thereon

The Members of the Energy Commission are responsible for the other information in the Annual Report. My opinion on the Financial Statements of the Energy Commission does not cover the other information than the financial statements and Auditor's Certificate thereon and I do not express any form of assurance conclusion thereon.

Responsibilities of the Members of the Energy Commission for the Financial Statements

The Members of the Energy Commission are responsible for the preparation of Financial Statements of the Energy Commission that give a true and fair view in accordance with the Malaysian Public Sector Accounting Standards (MPSAS) and the Energy Commission Act 2001 [*Act 610*] and Energy Commission (Amendment) Act 2010 [*Act A1371*] requirements. The Members of the Energy Commission are also responsible for such internal control as the Members of the Energy Commission determines is necessary to enable the preparation of the Financial Statements of the Energy Commission that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements of the Energy Commission, the Members of the Energy Commission are responsible for assessing the Energy Commission's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the Financial Statements of the Energy Commission as a whole are free from material misstatement, whether due to fraud or error, and to issue an Auditor's Certificate that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the International Standards of Supreme Audit Institutions will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the International Standards of Supreme Audit Institutions, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

a. identify and assess the risks of material misstatement of the Financial Statements of the Energy Commission, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;

b. obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Energy Commission's internal control;

c. evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Members of the Energy Commission;

d. conclude on the appropriateness of the Members of the Energy Commission's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Energy Commission's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my Auditor's Certificate to the related disclosures in the Financial Statements of the Energy Commission or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of Auditor's Certificate. However, future events or conditions may cause the Energy Commission to cease to continue as a going concern; and

e. evaluate the overall presentation, structure and content of the Financial Statements of the Energy Commission, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

The Members of the Energy Commission have been informed regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I have identify during the audit.

Other Matters

This certificate is made solely to the Members of the Energy Commission in accordance with the Energy Commission Act 2001 [*Act 610*] and Energy Commission (Amendment) Act 2010 [*Act A1371*] requirements, and for no other purpose. I do not assume responsibility to any other person for the content of this certificate.

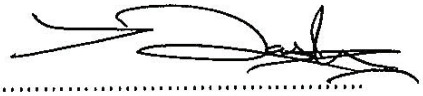
(DATUK WAN SURAYA BINTI WAN MOHD RADZI)
AUDITOR GENERAL
MALAYSIA

PUTRAJAYA
19 JULY 2024

STATEMENT OF CHAIRMAN AND A MEMBER OF THE ENERGY COMMISSION

We Mohammed Rashdan bin Mohd Yusof and Y.M. Raja Azura binti Raja Mahayuddin being the Chairman and one of the Members of the Energy Commission hereby declare, that in the opinion of the Members, the Financial Statements comprising the Statement of Financial Position, Statement of Financial Performance, Statement of Changes in Net Assets/Equity, Statement of Cash Flows, Statement of Budget Performance of the Energy Commission and the Notes to the Financial Statements have been prepared so as to give a true and fair view of the state of affairs of the Energy Commission as at 31 December 2023 and of its results and changes in the financial position for the year ended on that date.

On behalf of the Members,



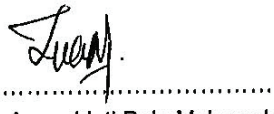
.....

Mohammed Rashdan bin Mohd Yusof
Chairman

Date: 11 July 2024

Place: Energy Commission
Precinct 2, Putrajaya

On behalf of the Members,



.....

Y.M. Raja Azura binti Raja Mahayuddin
Member

Date: 11 July 2024

Place: Energy Commission
Precinct 2, Putrajaya

DECLARATION BY THE OFFICER PRIMARILY RESPONSIBLE FOR THE FINANCIAL MANAGEMENT OF THE ENERGY COMMISSION

I, Dato' Ir. Ts. Abdul Razib bin Dawood, being the officer primarily responsible for the financial management and accounting records of the Energy Commission, solemnly declare that the Statement of Financial Position, Statement of Financial Performance, Statement of Changes in Net Assets/Equity, Statement of Cash Flows and the Statement of Budget Performance of the Energy Commission in the following financial position together with the Notes to the Financial Statements to the best of my knowledge and belief, correct and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Statutory Declaration Act 1960.

Subscribed and solemnly declared)
by the above-named)
in KUALA LUMPUR)
on 11 JUL 2024)

.....

Before me,

PESURUHJAYA SUMPAH
No. W790
Nama: ZAINUL ABIDIN BIN AHMAD
1 JAN 2023 - 31 DIS 2025
MALAYSIA

.....
COMMISSIONER OF OATH

22nd Floor, Wisma Hamzah Kwong Hing
No. 1, Lebuh Ampang,
50100 Kuala Lumpur

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

STATEMENT OF FINANCIAL POSITION
As At 31 December 2023

	Note	2023 RM	2022 RM
ASSETS			
Current Assets			
Cash and Cash Equivalents	4	165,069,431	151,991,166
Short Term Investment	5	428,272,899	413,378,762
Other Receivables, Deposit and Advance	6	1,260,112	670,009
Accrued Interest Income	7	4,308,841	3,428,328
Tax in Advance	8	-	1,692,162
Total Current Assets		598,911,283	571,160,427
Non-Current Assets			
Property, Fittings and Equipment	9	73,625,191	75,377,978
Intangible Assets	10	11,678	-
Total Assets		**672,548,152**	**646,538,405**
LIABILITIES			
Current Liabilities			
Other Payables and Accrued Expenses	11	14,584,408	15,357,509
Provision for Short Term Employee Benefits	12	5,255,798	3,282,678
Special Funds	13	2,273,311	2,326,682
Tax Provisions	8	1,833,438	-
Total Current Liabilities		23,946,955	20,966,869
Non-Current Liabilities			
Provision for Long Term Employee Benefits	12	19,642,806	20,127,476
Total Liabilities		**33,467,460**	**41,094,345**
Net Assets		**628,958,391**	**605,444,060**
NET ASSETS/EQUITIES			
Retained Profits		**628,958,391**	**605,444,060**

The attached notes from pages 6 to 36 are an integral part of this Financial Statement.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

STATEMENT OF FINANCIAL PERFORMANCE
For The Year Ended 31 December 2023

	Note	2023 RM	2022 RM
INCOME			
Income from Non-Exchangeable Transactions			
Fees and Charges	14	117,689,697	131,352,893
Income from Exchangeable Transactions			
Interests		19,950,719	12,415,997
Other Income	15	212,394	131,879
TOTAL INCOME		137,852,810	143,900,769
EXPENSES			
Wages, Allowances and Employee Benefits	16	70,040,776	70,149,182
Traveling and Subsistence Allowances		4,170,044	2,850,449
Communications and Utilities		3,189,884	2,505,445
Rental		3,015,666	2,847,937
Hospitalities		432,666	420,576
Office Supplies		1,171,046	1,039,796
Maintenance	17	7,087,484	7,171,112
Professional Services	18	10,484,733	9,625,543
Depreciation of Property, Fittings and Equipment		2,917,299	2,761,679
Amortization of Intangible Assets		386	-
Other Expenses	19	6,006,423	5,939,588
TOTAL EXPENSES		(108,516,407)	(105,311,307)
Profit Before Tax		29,336,403	38,589,462
Taxation Expense	20	(5,822,072)	(3,647,676)
Profit for The Year		23,514,331	34,941,786

The attached notes from pages 6 to 36 are an integral part of this Financial Statement.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

STATEMENT OF CHANGES IN NET ASSETS/EQUITY
For The Year Ended 31 December 2023

	Total RM
2022	
Balance as at 1 January	570,502,274
Surplus for the year	34,941,786
Balance as at 31 December	605,444,060
2023	
Balance as at 1 January	605,444,060
Surplus for the year	23,514,331
Balance as at 31 December	628,958,391

The attached notes from pages 6 to 36 are an integral part of this Financial Statement.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

STATEMENT OF CASH FLOWS
For The Year Ended 31 December 2023

	Note	2023 RM	2022 RM
CASH FLOWS FROM OPERATING ACTIVITIES			
Surplus of Income Before Tax		29,336,403	38,589,462
Adjustments for Non-Cash Items:			
Income from Interest Received		(19,950,719)	(12,415,997)
Depreciation of Property, Fittings and Equipment	9	2,917,299	2,761,679
Amortization of Intangible Assets	10	386	-
Disposal of Property, Fittings and Equipment		1,074	4
Provisions for Employee Benefits	12	5,996,385	7,421,440
Operating Surplus Before Changes in Working Capital		18,300,828	36,356,588
Changes in Working Capital and Special Funds:			
Increase in Other Receivables and Accrued Interest Income		(1,470,616)	(1,173,818)
(Decrease)/Increase in Other Payables and Accrued Expenses		(773,101)	418,305
Government/Agency Allocations	13	494,538	153,000
Bank Interest from Special Funds	13	21,974	53,339
Expenditure of Special Funds	13	(569,883)	(3,585,876)
Cash Flows from Operating Activities		16,003,740	32,221,538
Tax Paid		(2,296,472)	(4,105,545)
Payment for Employee Benefits		(4,507,935)	(4,162,358)
Net Cash Generated from Operating Activities		**9,199,333**	**23,953,635**
CASH FLOWS FROM INVESTING ACTIVITIES			
Short Term Investment		(14,894,137)	(6,057,690)
Purchase of Property, Fittings and Equipment	9	(1,165,586)	(1,480,045)
Purchase of Intangible Assets	10	(12,064)	-
Interest Income Received		19,950,719	12,415,997
Net Cash from Investing Activities		**3,878,932**	**4,878,262**
Net Increase in Cash and Cash Equivalents		13,078,265	28,831,897
Cash and Cash Equivalents at The Beginning of The Year		**151,991,166**	**123,159,269**
Cash and Cash Equivalents at The End of The Year	4	**165,069,431**	**151,991,166**

The attached notes from pages 6 to 36 are an integral part of this Financial Statement.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

STATEMENT OF BUDGET PERFORMANCE
For The Year Ended 31 December 2023

Actual 2022	Details	Actual 2023	Final Budget 2023	Original Budget 2023	Differences between Final Budget and Actual
RM		RM	RM	RM	RM
	INCOME				
131,352,893	Income from Operation	117,689,697	120,087,065	120,087,065	(2,397,368)
12,547,876	Interests Income, Profits from *Hibah* and Other Income	20,163,113	11,210,000	11,210,000	8,953,113
143,900,769	**Total Income**	**137,852,810**	**131,297,065**	**131,297,065**	**6,555,745**
	EXPENSES				
70,092,812	Emolument	70,040,776	77,283,300	77,283,300	7,242,524
2,850,449	Traveling and Subsistence Allowances	4,170,044	4,352,800	3,500,000	182,756
2,505,445	Communications and Utilities	3,189,884	3,190,300	3,000,000	416
2,847,937	Rental	3,015,666	3,512,100	3,591,800	496,434
420,576	Hospitality	432,666	477,500	450,000	44,834
729,275	Office Supplies	873,175	1,619,500	2,110,900	746,325
5,151,426	Maintenance	5,980,098	8,107,900	8,600,000	2,127,802
10,298,167	Professional Services	12,150,739	16,690,600	20,098,000	4,539,861
5,919,608	Other Expenses	636,483	10,393,000	6,993,000	9,756,517
906,639	Assets	394,527	2,385,200	2,385,200	1,990,673
101,722,334	**Total Expenses**	**100,884,058**	**128,012,200**	**128,012,200**	**27,128,142**
42,178,435	**Surplus/(Deficit)**	**36,968,752**	**3,284,865**	**3,284,865**	**(20,572,397)**

The attached notes from pages 6 to 36 are an integral part of this Financial Statement.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

Notes on the Financial Statements

1. Principal Activities

The Energy Commission is a statutory body operating at No. 12, Jalan Tun Hussein, Presint 2, 62100 Putrajaya.

The Energy Commission is the sole regulatory agency for the energy sector's regulation and development. Under the Energy Commission Act 2001, the Energy Commission is directly responsible to supervise and monitor the energy generation activities, including regulating each licensed individuals under the Energy Commission Act 2001 (Act 610) and the Energy Commission (Amendment) Act 2010 (Act A1371).

The Financial Statements were approved and certified for signature by the Energy Commission on 11 July 2024.

2. Basis of Preparation of Financial Statements

(I). Statement of Compliance

The Energy Commission's Financial Statements were prepared in compliance with the Malaysian Public Sector Accounting Standards (MPSAS).

(II). Basis of Measurement

The Financial Statements were prepared based on the historical cost convention unless otherwise specified in Note 3.

(III). Presentation and Functional Currency

The Financial Statements were stated in Malaysian Ringgit (RM), which is the functional currency for the Energy Commission.

Notes on the Financial Statements...continued

2. Basis of Preparation of Financial Statements...continued

(IV). Significant Accounting Estimates and Judgements

The preparation of the Financial Statements requires management to make judgements, estimates and assumptions that affect the application of accounting policies and to report the amounts of assets, liabilities, income and expenses. Although judgements, estimates and assumptions are based on the best current knowledge and actions of the management, actual results may vary.

Estimates and assumptions are reviewed on a continuous basis. A revised accounting estimates is recognized in the period in which the estimates is revised, and in any relevant future period.

There is no significant part of the estimation uncertainty and critical judgment in adopting accounting policies that have a material effect on the amounts recognized in the financial statements other than those disclosed in the notes to the financial statements.

3. Accounting Policies

(I). Property, Fittings and Equipment

Property, Fittings and Equipment are stated at cost less accumulated depreciation and impairment, if any.

Depreciation for property, fittings and equipment are calculated based on the straight line method over the estimated useful life span of the assets.

The annual depreciation rates are as follows:

Buildings	2%
Motor vehicles	20%
Furniture, equipment, renovations and enforcement instrumentation	20%
Office equipment (electronics)	15%
Application systems and computers	33 1/3%
Fixtures and equipment	20%

Freehold land is measured at cost and not depreciated.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(I). Property, Fittings and Equipment...continued

The residual value, useful lives and rate of depreciation are reviewed at the end of each financial year to ensure that the amounts, methods and year of depreciation are in line with previous estimates and expected economic benefits of utilising the property and equipment.

(II). Intangible Assets

An intangible asset shall be recognised if, and only if:

(a). It is probable that the expected future economic benefits or service potential that are attributable to the asset will flow to the entity; and

(b). The cost or fair value of the asset can be measured reliably.

The Energy Commission's Intangible Assets consist of Copyrights and Trademarks recognized at the cost of registration at the Malaysian Intellectual Property Corporation (MyIPO) for the Maskot RoboST and Adiwira ST.

Intangible Assets' life span for Copyrights is determined to be 50 years and Trademarks is at 10 years.

Amortization of Intangible Assets is done using the straight-line method throughout the estimated useful life of the asset. An intangible asset shall be derecognized:

(a). On disposal (including disposal through a non-exchange transaction); or

(b). When no future economic benefits or service potential are expected from its use or disposal.

The gain or loss arising from the derecognition of an Intangible Asset is determined by comparing the net disposal value with the net book value where the difference will be considered as a gain or loss in the Statement of Financial Performance.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(III). Financial Asset

Financial Asset is recognized in Statement of Financial Position when the Commission becomes a party to the contractual provisions of the instrument.

On initial recognition, Financial Assets are measured at fair value, including transaction costs for Financial Assets not measured at fair value through surplus or deficit, which are directly involved in issuing the Financial Asset.

After initial recognition, Financial Assets are classified into one of four categories of Financial Assets which are Financial Assets at 'fair value through profit or loss', loans and receivables, 'held-to-maturity' investments and 'available-for-sale' Financial Assets.

Regular purchases and sales of financial assets which requires the delivery of assets within the period set by the rules or conventions in the market are recognised on the trade-date of which the date the Commission commits to purchase or sell the asset.

Financial Asset Categories by the Commission are as follows:

(a). Receivables

Receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial recognition, the Financial Asset are then measured at amortised cost using the effective interest method less any accumulated impairment losses. Amortized cost is calculated by taking into account any discounts or premiums on the purchase of the asset as well as fees or costs which form a part of the effective interest rate. Losses arising from impairment are recognised in profit or loss. Receivables are classified as current assets except Receivables which the maturity date is more than 12 months after the reporting date which is classified as non-current assets.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(III). Financial Asset...continued

(b). Financial Asset on Fair Value Through Surplus or Deficit

For any embedded derivatives that cannot be valued reliably separately either on the acquisition date or at the end dale of the next reporting period, the entire instrument is designated at Fair Value Through Surplus or Deficit. However, if the entire instrument cannot be measured reliably, the instrument is stated at cost less impairment.

Investments in equity instruments which fair value cannot be measured reliably are stated at cost less impairment losses.

(c). Investment Held Until Maturity

Non-derivative Financial Assets with a fixed or determinable payment maturity period and remain classified as held to maturity when the Commission has the positive intent and ability to hold until maturity. After initial measurement, held-to-maturity investments are measured at amortized cost using the effective interest method and less impairment. Amortization cost is calculated by taking into account any discounts or premiums on acquisition and fees or costs that form part of the effective interest rate. Losses arising from impairment are recognized in the Statement of Financial Performance.

The Commission will derecognise a Financial Asset or, if applicable, part of a Financial Asset or part of a group of Financial Assets when:

(i). The right to receive cash flows from assets has expired or is excluded;

(ii). The Commission has transferred its right to receive cash flows from assets or has accepted an obligation to pay the cash flows received in full without material delay to a third party; and whether: (i) the Commission has transferred substantially all the risks and rewards of the assets; or (ii) the Commission has not transferred or retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

Any difference between the carrying amount of the derecognised Financial Asset and the consideration received is recognized in the Statement of Financial Performance in the period of derecognition.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(III). Financial Asset...continued

(d). Available-for-Sale Financial Asset

Available-for-Sale Financial Asset is a Financial Asset that is designated as available for sale or is not classified in any other Financial Asset category. Subsequent to original recognition, available-for-sale Financial Assets are stated at fair value. Gains or losses on changes in the fair value of such Financial Assets are recognised through the Statement of Changes in Net Assets, except for impairment losses, gains and losses on foreign exchange upon financial instruments and interest calculated under the effective interest method.

Investments in equity instruments where fair value cannot be measured reliably are stated at cost less impairment losses.

(IV). Financial Liabilities

Financial Liabilities are recognised in the Statement of Financial Position when the Commission becomes a party to the contractual provisions of the instrument.

On initial recognition, financial liabilities are measured at fair value, less transaction costs for financial liabilities not at 'fair value through profit or loss'.

Subsequent to initial recognition, Financial Liabilities are classified into one of two categories of Financial Liabilities which are Financial Liabilities measured at fair value through surplus or deficit and receivables.

The Commission has the following Financial Liabilities categories:

Receivables

Subsequent to initial recognition, Receivables are measured at amortized cost using the effective interest method. Gains or losses are recognized in surplus or deficit when the Financial Liabilities are derecognised or impaired.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(IV). Financial Liabilities...continued

Receivables...continued

Financial Liabilities are derecognised when the obligations specified in the contract are discharged, cancelled or expired.

Any difference between the carrying amount of the derecognized Financial Liabilities and the consideration paid is recognized in surplus or deficit in the period of derecognition.

(V). Critical Accounting Judgements and Uncertainties in the Primary Sources of Estimates

There are no critical accounting judgements and uncertainties in the primary sources of estimates used in preparing the Commission's Financial Statements that have a material effect on reported amounts other than those set out below:

(a). Impairment Receivables Allowances

The Commission assesses at each reporting date whether there is any objective evidence that Financial Assets are impaired. To determine whether there is objective evidence of impairment, the Commission considers factors such as insolvency of the debtor and default or significant late payment. If there is evidence of potential insolvency debt, the amount and timing of future cash flows are estimated based on historical loss experience for assets with similar credit risk characteristics.

(b). Changes in Estimated Lifespan of Property, Fittings and Equipment

All Property, Fittings and Equipment are depreciated on a straight-line basis over the life span of the asset. Changes in estimated patterns of asset utilization and technological development can affect the useful life and residual value of those assets. This will cause the depreciation of assets in the future to be reviewed.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(V). Critical Accounting Judgements and Uncertainties in the Primary Sources of Estimates... continued

(c). Allocation Measurement

The Commission always uses the best estimate as the basis for measuring a provision. The estimate is made based on past experience, other indications or assumptions, recent developments and reasonable future events in determining a provision.

(VI). Impairment of Non-Financial Asset

(a). Impairment of Cash Generating Asset Value

At each date of Statement of Financial Position, the Commission reviews the carrying amounts of its assets to determine whether there is any indication of impairment. If any indication exists, impairment is calculated by comparing the asset's carrying amount with its recoverable amount. Recoverable amount is the highest of fair value less costs to sell and value in use.

In determining value in use future cash flows will be discounted to their present value using a pre-tax discount rate that reflects the current market value of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, the latest market transactions will be taken into account, if any. If no recent market transactions occur, an appropriate valuation model should be used.

An impairment loss is recognized as an expense in the Statement of Financial Performance immediately when the carrying amount of the asset exceeds its recoverable amount.

Impairment losses recognized in prior periods for an asset are reversed if, and only if, there is a change in the estimates used to determine the recoverable amount. The reversal is recognized in the Statement of Financial Performance.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(VI). Impairment of Non-Financial Asset...continued

(b). Impairment of non-cash-generating assets

The Commission will assess at each reporting date, whether there is any indication that Non-Cash Generating Assets may be impaired. If any indication exists, then the Commission will make an estimate of the amount of the asset's recoverable service. The asset's recoverable service amount is the highest amount of fair value less selling costs and value in use.

An impairment loss is recognized as an expense in the Statement of Financial Performance, immediately when the carrying value of the asset exceeds its recoverable amount.

In determining value in use, the Commission has adopted the depreciated replacement cost approach. In this approach, the present value of the asset's remaining service potential is determined as the replacement cost of the depreciated asset.

Depreciated replacement cost is measured by taking into account the asset's replacement cost less accumulated depreciation calculated on that cost to refiect the service potential of the asset that has been used or has expired.

In determining the fair value less costs to sell, the price of the asset in the binding agreement is adjusted to determine the disposal price of the asset. If there is no binding agreement, but the asset is actively traded in the market, then the fair value less costs to sell is determined by reference to current market value less costs to dispose of. In the absence of a binding sale agreement or active market for the asset, the Board determines the fair value less costs to sell based on the best available information.

For each asset, an assessment is made at each reporting date as to whether there is any indication that a previously recognised impairment loss may no longer exist or has decreased. If such an indication exists, the Commission estimates the amount of the asset's recoverable service. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount of service since the last impairment loss was recognized. Reversals are limited to

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(VI). Impairment of Non-Financial Asset...continued

(b). Impairment of non-cash-generating assets...continued

the extent that the carrying amount of the asset does not exceed the recoverable amount of service or does not exceed the carrying amount that would have been possible after accumulated depreciation as no impairment loss was recognised for the asset in the previous year. The reversal is recognised in the Statement of Financial Performance.

(VII). Cash and Cash Equivalents

Cash and Cash Equivalents consist of cash in hand and bank balances, deposits in banks and other financial institutions, and also high liquidity short term investments with a maturity period of three (3) months or less from the date of purchase and can be readily redeemed in the form of cash and with low risks of value flunctuations.

The Cash Flow Statements are prepared using the indirect method.

(VIII). Short Term Investments

Short Term Investments are deposits in bank and other financial institutions, and also short term investments with high liquidity with maturity periods of more than three (3) months and up to a year from the date of purchase and which can be readily redeemed in the form of cash with low risks of value fluctuation.

(IX). Special Funds

Special Funds are provisions received from the Electricity Supply Industries Trust Fund (AAIBE) under the Ministry of Energy, Green Technology and Water (KeTTHA), which is currently administered by the Ministry of Energy Transition and Water Transformation (PETRA), and Government agencies for specific purposes.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(X). Taxation

Current tax is the taxation charged on the income surplus or deficit for the year. Current tax is the expected amount payable on taxable income for the year and is measured using rates applicable on the date of the Balance Sheet.

Current tax expenses are the expected tax payable on the taxable income for the year, using tax rates gazetted or substantially gazetted at the Statement of Financial Position's date, and any adjustments to tax payable in respect of the previous year.

Provisions for deferred tax is made, by the liability method, for all timing differences between tax rates of assets and liabilities and their carrying amount in the financial statements. Temporary differences are not recognised for goodwill, is not deductible for taxation purposes, and the initial recognition of an asset or liability at the time of the transaction does not affect the statutory income surplus and taxable income surplus. The total provision for deferred tax is based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates gazetted or substantially gazetted on the date of the Statement of Financial Position.

Deferred tax assets are recognised only when it is probable that taxable income surplus can be derived in the future from the assets used.

(XI). Employee Benefits

(a). Short Term Employee Benefits

Wages, salaries and bonuses are recognised as expenses in the current year services performed by employees of the Energy Commission. Short term accumulated compensations such as paid annual leave are recognised when employees render services that increase their entitlement for paid leave in the future, and short term non-accumulative compensations such as paid sick leave are only recognised when such leave of absence occur. The recognition of Provisions for Staff Leave is using the Actuarial Valuation Method. Medical facilities such as outpatient treatment facilities, hospitalization scheme and group surgery facilities and maternity facilities are provided to all permanent and

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(XI). Employee Benefits...continued

(a). Short Term Employee Benefits...continued

contract personnel based on the provisions set out in the terms and conditions of the Energy Commission's service in force.

Meanwhile, employee benefits such as gratuity and subsidised pension benefits for mortgages, vehicles and personal loans payable in the next financial year will be recognised on an accrual basis in the current Statement of Income as an expense and in the Balance Sheet as Current Liabilities.

(b). Compulsory Contribution Plan

The law requires qualified Malaysian employers to make compulsory contributions to the Employees Provident Fund and Social Security Organisation (SOCSO). The contributions are recognised as expenses in the income statement. Liabilities for the compulsory contribution plans are recognised as current expenses in the Statement of Financial Performance.

(c). Long-Term Employee Benefits

Long-Term Employee Benefits are the provision of retirement benefits in the form of Provisions for Staff Leave and Gratuity to the permanent staff serving for a minimum of ten years with the gratuity calculation rate as per approved by the Minister. It is considered as an employee's benefit payment; paid upon retirement and is recognised on an accrual basis in the current year's Statement of Financial Performance as expenses, and is stipulated as Non-Current Liabilities in the Balance Sheet. Recognition is by the use of Actuarial Valuation Method.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(XII). Recognition of Income

(a). Income from Exchange Transactions

Income from exchange transactions is recognized when there is a probable future economic benefits or service potential will flow to the entity and these benefits can be measured reliably. The Energy Commission's income from exchange transactions are as follows:

(i). Interest income from currents account deposits in the bank calculated on cash basis.

(ii). Interest income from fixed deposits in banks with a maturity period of three (3) months or less from the placement period is recognized on accrual basis.

(iii). Interest income from short term investments in banks with a maturity of more than three (3) months and up to one (1) year from the placement period is recognized on accrual basis.

(iv). Any other income from sale of tender documents, sale of industry-related books, sale of fixed assets and charges/penalties.

(b). Income from Non-Exchange Transactions

Income from non-exchange transactions is recognized as assets when there is a future economic benefits or service potential is expected flow to the entity, a result of past events and the fair value of the asset can be measured reliably.

Non-exchange transactions recognized as assets should also be recognized as income, except to the extent that liabilities are also recognized in respect of the same inflows as accrual in the Financial Statements.

When the obligation upon a liability has been fulfilled, the entity should reduce the carrying amount of the recognized liability, and recognize an amount of income which is equal to the reduction amount. The Energy Commission's income from non-exchange transactions are as follows:

(i). Income from Public and Private Licensing are accounted for on a cash basis since the annual payment responsibility lies under the license holders.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(XII). Recognition of Income...continued

(b). Income from Non-Exchange Transactions...continued

(ii). Income from Registration and Renewal of Operating Fees, as well as Other Operating Fees are accounted for on a cash basis.

(XIII). Related Party Disclosures

The parties deemed to be related if one party has the ability to control the other party or exercise influence over another party, to the extent that it prevents others from pursuing separate personal interests in making financial and operating decisions.

(XIV). Provisions

Provisions are recognized when the Energy Commission has a legal current and constructive obligation, the effects of past events and a possible outflow of resources involving economic benefits is required to settle the obligation, and the amount of the obligation can be estimated with certainty.

Provisions are reviewed at each reporting date and adjusted to reflect the best current estimate. If there is no possibility that an outflow of economic resources will be required to settle the obligation, the provision will be reversed. If the effect of time value of money is significant, the provision will be discounted using the current pre-tax rate which reflects, where appropriate, the risks specific to the liability. Whenever discounting is used, the increase in provisions caused by time-pass is recognized as a finance cost.

(XV). Foreign Exchange

Transactions made in foreign currencies are converted into Ringgit Malaysia based on the rate prescribed at the time of the transactions were executed.

Notes on the Financial Statements...continued

3. Accounting Policies...continued

(XVI). Contingent Liabilities and Contingent Assets

Contingent liabilities are current obligations which are not recognized as there is no probability of fund outflow is required to fulfill the obligation, or in extremely rare cases where a liability cannot be recognized as it cannot be measured reliably. Contingent liabilities are not recognized but are disclosed in Note 21 to the Financial Statements.

Obligations arising from past events of which the existence can only be confirmed through the occurrence or non-occurrence of one or more uncertain future events, and not under the control of the Energy Commission are also disclosed as contingent liabilities, unless the probability of economic resources outflow is small.

Contingent assets are assets that are likely to exist resulting from past events of which the existence will only be confirmed through the occurrence or non-occurrence of one or more uncertain future events and it is not under full control of the Energy Commission.

The Energy Commission does not recognize contingent assets in the financial statements but disclosed their existence where there is a probability of economic benefits inflow, but is not certain.

(XVII). Budget Information

The annual budget is prepared on a cash basis. Considering the financial statements is prepared on accrual basis, a Statement of Budget Performance being prepared to show the comparison between the current year budget and the current year's actual utilization.

This statement has been prepared using the annual budget preparation basis and only refers to the operational and development budget. The total budget is only presented on behalf of the Energy Commission which it has been approved by the Ministry of Energy and Natural Resources (currently known as Ministry of Energy Transition and Water transformation).

ENERGY COMMISSION

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Notes on the Financial Statements...continued

4. Cash and Cash Equivalents

	2023 RM	2022 RM
Cash and Bank Balances	49,655,352	42,530,246
Deposits in Licensed Bank	115,414,079	109,460,920
TOTAL	**165,069,431**	**151,991,166**

Cash and Bank Balances includes the Special Fund of RM2,273,311 (2022: RM2,326,682).

5. Short Term Investment

	2023 RM	2022 RM
Term Deposit-i	265,737,286	282,951,009
Commodity Murabahah Deposit	162,535,613	130,427,753
TOTAL	**428,272,899**	**413,378,762**

Short Term Investment have a maturity period of more than 3 months and up to 12 months with different interest rates from each financial institution ranging from 4.00% to 4.15% (2022: 2.35% to 4.00%).

6. Other Receivables, Deposit and Advance

	2023 RM	2022 RM
Staff Advance	41,998	4,373
Club Membership Deposits	92,000	92,000
Other Deposits and Receivables	1,126,114	573,636
TOTAL	**1,260,112**	**670,009**

Notes on the Financial Statements...continued

6. Other Receivables, Deposit and Advance...continued

Other Receivables, Deposit and Advance includes rental deposit for seven regional offices, new regional office which is Federal Territories Regional Office, stores, parking, other facilities used such as deposits for medical services (Third Party Administrator), advertisements spaces for regional offices, electricity, and others.

7. Accrued Interest Income

	2023 RM	2022 RM
Accrued Interest Income	4,308,841	3,428,328
TOTAL	**4,308,841**	**3,428,328**

Accrued Interest Income is the immature benefit of fixed deposits which is accounted for as at 31 December each year.

8. Tax in Advance

	2023 RM	2022 RM
Tax in Advance as at 1 January	1,692,162	1,234,293
Prior year tax adjustment	(72,356)	-
	1,619,806	1,234,293
Payment of CP500	2,462,993	4,105,545
Accumulated previous tax payments	4,082,799	5,339,838
Current Year's Tax Provision (Note 20)	(5,916,237)	(3,647,676)
(Tax Payable)/Tax in Advance as at 31 December	(1,833,438)	1,692,162

Prior year tax adjustment was done by the Inland Revenue Board for Year Assessment 2021.

Notes on the Financial Statements...continued

9. Property, Fittings and Equipment

2023

	Land	Building	Motor Vehicles	Furniture, Fittings, Renovations and Enforcement Equipment	Office Equipment (Electronic)	Application Systems and Computers	Fixtures and Equipment	Total
	RM	RM	RM	RM	RM	RM	RM	RM
Cost								
At 1 January	8,299,405	79,205,160	4,549,931	7,390,236	5,590,889	6,193,000	1,585,140	112,813,761
Addition	-	-	555,435	99,027	297,692	213,432	-	1,165,586
Disposal/Transfer	-	-	(1,243,834)	-	(8,910)	(191,987)	-	(1,444,731)
At 31 December	8,299,405	79,205,160	3,861,532	7,489,263	5,879,671	6,214,445	1,585,140	112,534,616
Accumulated Depreciation								
At 1 January	-	15,048,979	3,780,118	6,731,452	4,995,642	5,316,883	1,562,709	37,435,783
Current Year Depreciation	-	1,584,103	362,691	299,439	162,369	497,696	11,001	2,917,299
Disposal/Transfer	-	-	(1,243,829)	-	(8,909)	(190,919)	-	(1,443,657)
At 31 December	-	16,633,082	2,898,980	7,030,891	5,149,102	5,623,660	1,573,710	38,909,425
Net Book Value								
At 31 December	**8,299,405**	**62,572,078**	**962,552**	**458,372**	**730,569**	**590,785**	**11,430**	**73,625,191**

Notes on the Financial Statements...continued

9. Property, Fittings and Equipment...continued

2022

	Land	Building	Motor Vehicles	Furniture, Fittings, Renovations and Enforcement Equipment	Office Equipment (Electronic)	Application Systems and Computers	Fixtures and Equipment	Total
	RM	RM	RM	RM	RM	RM	RM	RM
Cost								
At 1 January	8,299,405	79,205,160	4,144,439	7,232,401	5,335,731	5,552,560	1,585,140	111,354,836
Addition	-	-	405,492	157,835	255,158	661,560	-	1,480,045
Disposal/Transfer	-	-	-	-	-	(21,120)	-	(21,120)
At 31 December	8,299,405	79,205,160	4,549,931	7,390,236	5,590,889	6,193,000	1,585,140	112,813,761
Accumulated Depreciation								
At 1 January	-	13,464,876	3,565,494	6,419,110	4,822,964	4,871,067	1,551,709	34,695,220
Current Year Depreciation	-	1,584,103	214,624	312,342	172,678	466,932	11,000	2,761,679
Disposal/Transfer	-	-	-	-	-	(21,116)	-	(21,116)
At 31 December	-	15,048,979	3,780,118	6,731,452	4,995,642	5,316,883	1,562,709	37,435,783
Net Book Value								
At 31 December	**8,299,405**	**64,156,181**	**769,813**	**658,784**	**595,247**	**876,117**	**22,431**	**75,377,978**

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Notes on the Financial Statements...continued

10. Intangible Assets

2023

	Trademark RM	Copyright RM	Total RM
Cost			
As at 1 January	-	-	-
Addition	600	11,464	12,064
As at 31 December	600	11,464	12,064
Accumulated Amortization			
As at 1 January	-	-	-
Amortization Expenses	4	382	386
As at 31 December	4	382	386
Net Book Value			
As at 31 December	596	11,082	11,678

The Energy Commission's Intangible Assets are for Copyrights and Trademarks registered for RoboST and Adiwira ST in the year 2023.

11. Other Payables and Accrued Expenses

	2023 RM	2022 RM
Payables	38,206	9,765
Accrued Payables	14,493,191	15,270,182
Compounds for Consolidated Fund under The Ministry	-	27,000
Audit Fees	53,011	50,562
TOTAL	**14,584,408**	**15,357,509**

Payables and Accrued Payables are interest free and settlements made normally within 30-days term.

Notes on the Financial Statements...continued

12. Provision for Employee Benefits

	2023 RM	2022 RM
At 1 January	23,410,154	20,151,072
Current Year Provision	5,996,385	7,421,440
Current Year Payments	(4,507,935)	(4,162,358)
At 31 December	**24,898,604**	**23,410,154**

The maturity structure for Provisions for Employees Benefits are as follows:

	2023 RM	2022 RM
Maturity within 12 months	5,255,798	3,282,678
Maturity exceeding 12 months	19,642,806	20,127,476
TOTAL	**24,898,604**	**23,410,154**

The Actuarial assumption used to calculate the Provision for Employee Benefits for Gratuity is the average of annual salary increment rate of 5.0% (2022: 5.0%) and the average discount rate of 4.29% (2022: 4.29%) while the calculation for Provisions for Staff Leave is using the average annual salary increment rate of 5.0% (2022: 5.0%) and the average discount rate of 4.26% (2022: 4.26%).

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Notes on the Financial Statements...continued

13. Special Funds

2023

	PPKTL Special Funds Account	MyPower Special Funds Account	PR&PLL Special Funds Account	MEIH and MyEnergy Stats Special Funds Account	NEEAP Special Funds Account	Total
	RM	RM	RM	RM	RM	RM
Balance as at 1 January 2023	**65,750**	**1,961**	**2,105,952**	**153,019**	**-**	**2,326,682**
Income:						
Government/Agency Contribution	-	-	-	249,585	244,953	**494,538**
Bank Interest	670	3	21,166	140	7	**21,986**
	670	3	21,166	249,725	244,960	**516,524**
(-) Expenditure:						
Bank Charges	(2)	(10)	-	-	-	**(12)**
Expenses/Repayment for The Year	-	-	-	(324,930)	(244,953)	**(569,883)**
	(2)	(10)	-	(324,930)	(244,953)	**(569,895)**
(Deficit)/Surplus	668	(7)	21,166	(75,205)	7	**(53,371)**
Balance as at 31 December 2023	**66,418**	**1,954**	**2,127,118**	**77,814**	**7**	**2,273,311**

Notes on the Financial Statements...continued

13. Special Funds...continued

2022

	PPKTL Special Funds Account	MyPower Special Funds Account	PR&PLL Special Funds Account	MEIH and MyEnergy Stats Special Funds Account	Total
	RM	**RM**	**RM**	**RM**	**RM**
Balance as at 1January 2022	**158,547**	**1,968**	**5,545,704**	**-**	**5,706,219**
Income:					
Government/Agency Contribution	-	-	-	153,000	**153,000**
Bank Interest	1,603	3	51,724	19	**53,349**
	1,603	3	51,724	153,019	**206,349**
(-) Expenditure:					
Bank Charges	-	(10)	-	-	**(10)**
Expenses/Repayment for The Year	(94,400)	-	(3,491,476)	-	**(3,585,876)**
	(94,400)	(10)	(3,491,476)	-	**(3,585,886)**
(Deficit)/Surplus	(92,797)	(7)	(3,439,752)	153,019	**(3,379,537)**
Balance as at 31 December 2022	**65,750**	**1,961**	**2,105,952**	**153,019**	**2,326,682**

Special Funds are special allocations received from the Electricity Supply Industries Trust Fund (AAIBE) under the Ministry of Energy, Green Technology and Water (KeTTHA), which is currently administered by the Ministry of Energy Transition and Water Transformation (PETRA) and government agencies for specific purposes. Details of each account under the Special Funds are as follows:-

(i). **PPKTL Special Funds Account:** to finance Sustainable Energy Communications Plan Project that aims to promote the use of sustainable energy encompassing the field of energy efficiency and renewable energy, and to foster greater awareness and enhance the public's knowledge on the legal framework and regulations related to sustainable energy.

(ii). **MyPower Special Funds Account:** to finance the implementation of project initiatives under the 10th Malaysia Plan namely the Stabilisation Mechanism, Ring Fencing Single Buyer, Fuel Supply and Security and Industry Structure.

(iii). **PR & PLL Special Funds Account:** to finance retrofitting projects and installation of LED lighting in selected ministry buildings beginning in early 2015.

ENERGY COMMISSION

Established under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371)

Notes on the Financial Statements...continued

13. Special Funds...continued

(iv). **MEIH and MyEnergyStats Special Funds Account**: allocation was obtained form AAIBE to fund the enhancement project of the Malaysia Energy Hub (MEIH) portal and the MyEnergyStats Mobile Application which starts on 1 October 2022 with an amount of RM153,000. An additonal fund of RM249,585 was received in 2023 for the purpose of first progress payment, making the total expenses for 2023 amounting to RM324,930 for the first progress payment and other expenses required by the project.

(v). **NEEAP Special Funds Account**: allocation was obtained form AAIBE to fund the National Energy Efficiency Action Plan 2.0 by the Energy Commission. An amount of RM244,953 was recieved for the purpose of first progress payment in 2023.

14. Fees and Charges

	2023 RM	2022 RM
Public and Private Licenses	82,083,847	95,353,682
Registration/Operations Renewal Fees	34,338,760	34,913,740
Other Operating Fees	1,267,090	1,085,471
TOTAL	**117,689,697**	**131,352,893**

15. Other Income

	2023 RM	2022 RM
Income from Sales of Tender Documents and Investigation Reports	17,100	113,100
Income from Fixed Assets Disposal	186,558	690
Income from Sales of Books and Others	8,736	18,089
TOTAL	**212,394**	**131,879**

Notes on the Financial Statements...continued

16. Wages, Allowances and Employee Benefits

	2023 RM	2022 RM
Wages and Allowances	41,125,748	40,714,348
Energy Commission Members' Allowances	718,192	663,224
Statutory Contributions	8,365,412	8,240,223
Subsidy on Loan Interests	3,540,124	3,055,053
Gratuity	2,204,633	4,582,854
Medical Panel	3,799,129	3,058,579
Staff Bonus	8,675,160	8,577,693
Other Financial Benefits	1,612,378	1,257,208
TOTAL	**70,040,776**	**70,149,182**

The total number of Energy Commission's employees as at 31 December 2023 stands at 380 personnel. Meanwhile, the total number of employees in 2022 was 369 personnel. The number of Energy Commission members for the year 2023 is 9 personnel, similar in the year 2022. Included in the Statutory Contributions is the contribution made to the Employees Provident Fund (EPF) amounting to RM7,981,422 (2022: RM7,921,614), contributions to Social Security Organization (SOCSO) amounting RM373,975 (2022: RM313,119) and *Kumpulan Wang Persaraan (Diperbadankan)* (KWAP) amounting to RM10,015 (2022: RM5,490).

17. Maintenance

	2023 RM	2022 RM
Application System Maintenance	5,188,036	4,788,758
Equipment, Vehicle and Office Building Maintenance	1,899,448	2,382,354
TOTAL	**7,087,484**	**7,171,112**

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Notes on the Financial Statements...continued

18. Professional Services

	2023 RM	2022 RM
Audit Fees	53,011	50,562
Professional and Consultancy Fees	7,455,296	7,270,388
Development Cost of Competency and Management Performance	956,040	705,415
Other Professional Services Expenses	2,020,386	1,599,178
TOTAL	**10,484,733**	**9,625,543**

19. Other Expenses

	2023 RM	2022 RM
Federal Consolidated Fund	5,340,000	5,250,000
Touch point	179,482	305,213
Corporate Social Responsibility	362,356	246,980
Energy Efficiency Challenge	124,585	137,395
TOTAL	**6,006,423**	**5,939,588**

Other Expenses inclusive of contributions or sponsorships made by the Energy Commission.

20. Taxation Expense

	2023 RM	2022 RM
Tax Expenses		
Provision of Tax	5,916,237	3,647,676
Prior year adjustment	(94,165)	-
	5,822,072	3,647,676
Reconciliation of Effective Tax Rate		
Surplus Income Before Tax	29,336,403	38,589,462
Tax at 30%	8,800,921	11,576,839
Tax-Exempted Income	(2,884,684)	(7,929,163)
Prior year adjustment	(94,165)	-
Tax Expense	**5,822,072**	**3,647,676**

Notes on the Financial Statements...continued

20. Taxation Expense...continued

The Energy Commission is tax-exempted under Section 127(3)b Income Tax Act 1967 which was conferred by the Ministry of Finance on 19 October 2004. The tax exemption is applicable only to statutory income as follows:

(i). Income received from the Federal or State Govenment in the form of grants or subsidies;
(ii). Income received in connection with any amount chargeable or collectible from any person according to the provisions of the Act which regulates statutory authorities; and
(iii). Contributions and donations received.

21. Budget Information

The Energy Commission's budget is approved by the Ministry of Energy Transition and Water Transformation (PETRA), encompassing fiscal period of 1 January 2023 to 31 December 2023.

The following are the material differences between the the amount of Final Budget and Actual for the year 2023:

Details	Actual 2023	Final Budget 2023	Difference between Final Budget and Actual
	RM	RM	RM
INCOME			
Income from Operation	117,689,697	120,087,065	(2,397,368)
Interests Income, Profits from *Hibah* and Other Income	20,163,113	11,210,000	8,953,113
EXPENSES			
Emolument	70,040,776	77,283,300	7,242,524
Office Supplies	5,980,098	8,107,900	2,127,802
Maintenance	12,150,739	16,690,600	4,539,861
Professional Services	636,483	10,393,000	9,756,517
Other Expenses	394,527	2,385,200	1,990,673
Assets	59,918,475	77,283,300	17,364,825

Revenue collection from Electricity and Gas Public Licensing has contributed to the increase in actual Income from Operation for the year 2023 compared to the final budget. The decrease in revenue collection was due to discontinuation of Public Licensing in 2023.

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Notes on the Financial Statements...continued

21. Budget Information...continued

The increase in Interest Income for the year 2023 compared to the Final Budget 2023 was due to increase in fixed deposit *hibah* rate with an average of 3.89% compared to 3.10% in 2022.

The differences between the Final Budget and the lnilital Budget of 2023 is after taking into account budget transfers prosesses allowed by the *Had Kuasa Kewangan* and *Manual Prosedur Kewangan Suruhanjaya Tenaga (Pindaan 2017)*. However, the amount of the budget transfer does not exceed the total amount of the budget that has been approved for the year 2023.

There is a difference between the final budget amount and the actual expenditure of Emolument up until 31 December 2023 as the expenses made was 380 personnel while the approved budget was for 394 personnel.

Maintenance expenses are made periodically. A portion of the total difference between the final budget and the actual Maintenance expenses has been recorded as a commitment for scheduled maintenance works using the 2023 budget.

The difference between actual expenses in 2023 and the final budget for Professional Services was because payments are made based on the works carried out according to progress and the remaining work that has not been completed is recorded as Commitment.

The difference between actual expenses in 2023 and the final budget for Other Expenses was due to the allocation of Contribution to the Federal Consolidated Fund for the year 2023 amounting to RM9,730,000 is recorded as Commitment.

A portion of the final balance of the Assets budget was recorded as a Commitment for office space renovation for the Energy Commission Operation Center (STOC) amounting to RM491,660 while the balance of RM514,982 was for the acquisition of other assets, namely office equipment, furniture, electrical and electronic equipment and computers.

Notes on the Financial Statements...continued

22. Commitments

	2023 RM	2022 RM
Property, Fittings and Equipment	1,006,642	790,706
Professional Services	14,954,596	15,589,571
Office Supplies and Maintenance	2,434,286	1,696,318
Other expenses - Contributions	9,730,000	5,370,000
Rental	31,950	-
TOTAL	**28,157,474**	**23,446,595**

Included in the Commitments for the year ended 31 December 2023 under Property, Fittings and Equipment amounting to RM1,006,642 are procurement office space's renovation, computers and accessories, furniture and electronic equipment. Professional Services consists of services for projects under ST's research and development amounting RM12,905,774 and other professional services such as publishing services, testing of energy efficiency appliances, transportation services and others amounting to RM2,048,822.

Commitments for Maintenance for the year ended 31 December 2023 is related to maintenance of office equipments, ICT support systems maintenance as well as building maintenance amounting to RM2,073,529, while the cost of Office Supplies amounting to RM360,757. In addition, there is also a Commitment for the Contribution of the Federal Consolidated Fund amounting to RM9,730,000 and Rental of vehicle amounting to RM31,950.

Commitments costs for the year 2022 amounting to RM23,446,595 consists of costs related to Property, Fittings and Equipment, Professional Services, Utilities, Maintenance, Office Supplies and Contributions.

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Notes on the Financial Statements...continued

23. Contingent Liability

1. Strong Elegance Sdn Bhd

   On 18 December 2020, a civil action was filed at the Kuala Lumpur High Court against ST by Strong Elegance Sdn Bhd ("SE") for, among others, a declaration that the withdrawal of the Letter of Award for the Large Scale Solar 1 project dated 2 May 2017 by ST was invalid and for general damages and exemplary damages to be assessed by the Court. On 15 March 2023, the High Court Judge granted the SE's claim for the said declaration and instructed parties to proceed with the assessment of damages hearing.

   ST filed a Notice of Motion at the Court of Appeal for a stay of proceeding on 31 May 2023 and a Notice of Appeal to the Court of Appeal against the said decision of the High Court. On 2 November 2023, the stay of proceeding order was granted by the Court of Appeal and the Court of Appeal fixed the Decision date on 29 February 2024. On that date, the Court of Appeal ruled that the appeal by ST is allowed by quashing the declaration granted by the High Court and setting aside the High Court's decision for parties to proceed with hearing for assessment of damages.

   Meanwhile at the High Court level, the High Court Judge during Case Management on 5 March 2024 took note of the Court of Appeal's Decision. However, as the High Court has not yet received the sealed copy of the Court of Appeal Decision, the High Court Judge fixed the hearing of assessment for damages on 12 and 13 September 2024. Once the High Court has received the sealed copy of the Court of Appeal's Decision, the said dates will be vacated.

2. Icon City JMB v Mah Sing Utilities, Icon City Development Sdn Bhd, Energy Commission

   Plaintiff, a Joint Management Body (JMB) in the Icon City development. Icon City is a mixed development developed by the second Defendant. The transfer of obligations from the second Defendant to JMB was in December 2016 including the transfer of 9 installations along with the obligation to maintain all said installations.

   The plaintiff claims that there has been "unjust enrichment" and "undue benefit" when the second defendant has been charged with too high charges for electricity supply (from tariff C1 to tariff B) for 9 installations for electricity used in 10 public areas and a charge for the maintenance and service of 9 installations. In this action, ST was named as the third Defendant and was sued in a nominal capacity.

Notes on the Financial Statements...continued

23. Contingent Liability...continued

2. Icon City JMB v Mah Sing Utilities, Icon City Development Sdn Bhd, Energy Commission...continued
On 29 August 2023, the Court granted ST's application of striking out against Plaintiff with a cost of RM5,000.00. However, the Plaintiff has filed an appeal against the decision where the record of appeal was filed on 23 November 2023. The Court has set the following dates for the next proceedings.

Glosari

Glossary

Istilah *Terms*	**Definisi**	***Definition***
AA	Aturan Akses Dokumen yang dibangunkan oleh pemilik/pengendali kemudahan-kemudahan gas, yang mengandungi terma-terma dan syarat-syarat untuk memperoleh akses kepada kemudahan-kemudahan gas.	*Access Arrangement* *A document developed by the owner/operator of the gas facilities, which contains the terms and conditions for gaining access to the gas facilities.*
AFOC	*ASEAN Forum On Coal* Forum yang ditubuhkan untuk mempromosikan kerjasama ASEAN dan meneroka peluang perniagaan yang berkaitan dengan arang batu.	*ASEAN Forum On Coal* *A forum established to promote ASEAN cooperation and explore business opportunities related to coal.*
ARA	Pelarasan Hasil Tahunan Semakan semula purata tarif yang dibenarkan sekiranya terdapat perbezaan antara pendapatan yang dibenarkan dan pendapatan sebenar.	*Annual Revenue Adjustment* *A review of the allowed average tariff if there is a difference between the allowed revenue and the actual revenue.*
ATI	Kelulusan untuk Memasang Kelulusan yang perlu diperoleh daripada ST sebelum mana-mana pihak memulakan kerja pada pepasangan gas baru atau tambahan.	*Approval to Install* *Approval to be obtained from the Commission before any party begins work on new or additional gas installations.*
ATO	Kelulusan untuk Mengendali Kelulusan yang perlu diperoleh daripada ST sebelum mana-mana pihak boleh mengendalikan sesuatu pepasangan gas yang baharu.	*Approval to Operate* *Approval to be obtained from the Commission before any party begins operating a new gas installation.*
BEI	Indeks Tenaga Bangunan Penanda aras dalam memantau prestasi tenaga bangunan dengan menunjukkan intensiti tenaga yang digunakan bagi setiap meter persegi luas bangunan	*Building Energy Index* *A benchmarking tool in monitoring building energy performance by indicating the intensity of energy used per meter square area of the building.*
BESS	Sistem Storan Tenaga Bateri Teknologi yang membolehkan penyimpanan tenaga daripada sumber tenaga boleh baharu (TBB) seperti solar dan angin, dan kemudian digunakan mengikut keperluan.	*Battery Energy Storage System* *A technology that enables energy from renewables such as solar and wind, to be stored and then released as needed.*
CAIDI	*Customer Average Interruption Duration Index* Kadar purata tempoh masa gangguan bekalan dialami oleh pelanggan yang terlibat dalam setahun.	*Customer Average Interruption Duration Index* *The average duration of supply interruption experienced by affected customers during the year.*
CAPEX	Perbelanjaan Modal Perbelanjaan yang digunakan untuk membeli, menyelenggara atau mengembangkan aset tetap.	*Capital Expenditures* *Expenses used to purchase, maintain, or expand fixed assets.*
CCGT	Turbin Gas Kitar Padu Loji jana kuasa elektrik yang menggabungkan penggunaan turbin gas dan turbin stim untuk mencapai tahap kecekapan yang lebih tinggi.	*Combined Cycle Gas Turbine* *Electrical power plant in which a gas turbine and a steam turbine are used in combination to achieve greater efficiency.*

CCUS	Pemerangkapan, Pengangkutan dan Penyimpanan Karbon Teknologi yang bertujuan mengurangkan jumlah karbon yang dilepaskan ke atmosfera daripada proses industri, penjanaan kuasa, dan sumber lain.	*Carbon Capture, Utilisation and Storage* *Technologies aimed at reducing the amount of carbon released into the atmosphere from industrial processes, power generation, and other sources.*
CGPP	Program Tenaga Hijau Korporat Inisiatif oleh Kerajaan untuk memberi peluang kepada entiti perniagaan untuk menggunakan tenaga boleh baharu dalam operasi perniagaan mereka.	*Corporate Green Power Programme* *An initiative by the Government to provide opportunity for business entities to use renewable energy in their business operation.*
COA	Perakuan Kelulusan Perakuan yang dikeluarkan sebagai kelulusan untuk mengilang, mengimport, mempamer, menjual dan mengiklan kelengkapan elektrik seperti yang dinyatakan di bawah Peraturan 97(1) Peraturan-Peraturan Elektrik 1994.	*Certificate of Approval* *A certificate issued as an approval to manufacture, import, exhibit, sell and advertise any electrical equipment prescribed under sub regulation 97(1) of the Electricity Regulations 1994.*
DePUI	*Delivery Point Unreliability Index* Indeks daya harap pemindahan kuasa elektrik daripada sistem penghantaran kepada sistem pengagihan.	*Delivery Point Unreliability Index* *Index of the reliability of power transfer from the transmission system to the distribution system.*
DFC	*Demand Forecasting Committee* Jawatankuasa bagi pengumpulan input daripada pihak-pihak berkepentingan dan berkepakaran berhubung unjuran pertumbuhan ekonomi dan permintaan elektrik.	*Demand Forecasting Committee* *A committee that collects inputs from stakeholders and experts regarding economic growth and electricity demand forecasts.*
EACG	Geran Audit Tenaga Bersyarat Geran yang diperuntukkan bagi sektor komersial dan industri untuk bekerjasama dengan syarikat perkhidmatan tenaga yang berdaftar dengan ST untuk melaksanakan audit tenaga.	*Energy Audit Conditional Grant* *A grant allocated for commercial and industrial sectors to collaborate with local energy service companies (ESCOs) registered with the Commission to conduct energy audits.*
EE	Kecekapan Tenaga Penggunaan tenaga elektrik yang optimum untuk menyempurnakan kerja yang sama tanpa mengganggu keselesaan pengguna.	*Energy Efficiency* *Optimum use of electricity to complete the same work without compromising the comfort of the user.*
EIF	Kumpulan Wang Industri Elektrik Kumpulan wang yang ditubuhkan bagi menguruskan impak tarif elektrik terhadap pengguna atau apa-apa maksud lain yang berkaitan dengan industri elektrik sebagaimana yang disifatkan perlu oleh ST.	*Energy Industry Fund* *A fund established to manage the impact of electricity tariffs on consumers or any other purposes related to the electricity industry as deemed necessary by the Commission.*
EMEER 2008	Peraturan Pengurusan Tenaga Elektrik Dengan Cekap 2008 Peraturan yang digubal pada 15 Disember 2008 untuk menambah baik amalan pengurusan tenaga di kalangan pengguna tenaga yang besar.	*Efficient Management of Electrical Energy Regulation 2008* *Regulation enacted on 15 December 2008 to improve energy management practices among large energy consumers.*
FiT	Feed-in Tariff Mekanisme yang membenarkan tenaga elektrik yang dijana daripada sumber tenaga boleh baharu (TBB) oleh penjana bebas dan individu dijual kepada syarikat utiliti bekalan elektrik (TNB) pada kadar tarif premium untuk satu tempoh yang telah ditetapkan oleh Kerajaan.	*Feed-in Tariff* *A mechanism that allows electricity generated from renewable energy sources by independent power producers and individuals to be sold to the electricity utility company (TNB) at a premium rate for a period set by the Government.*
GCPT	Pelepasan Kos Gas Mekanisme yang membolehkan semakan tarif gas bagi mencerminkan perbezaan antara kos unjuran dan kos sebenar yang berada di luar kawalan pihak utiliti.	*Gas Cost Pass-Through* *A mechanism that allows gas tariff revisions to reflect the difference between the forecasted and actual gas cost which is beyond the control of the utility.*

GET	*Green Electricity Tariff* Program yang menawarkan pilihan kepada pengguna untuk membeli bekalan elektrik rendah karbon, bagi membolehkan pengguna mengurangkan jejak karbon mereka dalam penggunaan elektrik.	*Green Electricity Tariff* *A programme that offers consumers the option to purchase low carbon electricity supply, enabling consumers to reduce their carbon footprint in electricity consumption.*
GHG	Gas Rumah Hijau Gas atmosfera yang menyerap inframerah dan memancarkan haba ke persekitarannya, contohnya karbon dioksida, wap air, metana, nitrus oksida dan ozon.	*Greenhouse Gas* *Atmospheric gases that absorb infrared and emit heat to their surroundings, including carbon dioxide, water vapour, methane, nitrous oxide and ozone.*
GSL	Tahap Perkhidmatan Yang Dijamin Perkhidmatan-perkhidmatan yang dijamin oleh pihak utiliti di mana kegagalan mematuhinya akan menyebabkan pihak utiliti dikehendaki membayar penalti dalam bentuk rebat kepada pengguna.	*Guaranteed Service Level* *Services guaranteed by the utility where failure to comply will result in the utility being required to pay penalties in the form of rebates to the consumers.*
GSO	Pengendali Sistem Grid Badan yang bertanggungjawab untuk operasi masa nyata harian dan pengurusan sistem grid di Semenanjung, serta perancangan jangka pendek dan sederhana untuk rangkaian penghantaran dan kemudahan penjanaan.	*Grid System Operator* *An organisation responsible for the day-to-day real-time operation and the management of the Peninsula grid system, along with the short and medium-term planning of the transmission network and generation facilities.*
GWh	Gigawatt jam Satu unit tenaga yang mewakili satu bilion watt jam dan bersamaan dengan satu juta kilowatt jam, sering digunakan sebagai ukuran keluaran stesen janakuasa elektrik yang besar.	*Gigawatt hour* *A unit of energy representing one billion watt hours and is equivalent to one million kilowatt hours, often used as a measure of the output of large electricity power stations.*
IBR	Kawal Selia Berasaskan Insentif Rangka kerja bagi penetapan tarif yang berstruktur dan telus untuk industri tenaga, yang memastikan utiliti terus meningkatkan kecekapan dan ketelusan dalam membekalkan tenaga dengan pematuhan unjuran perbelanjaan sepenuhnya.	*Incentive-Based Regulation* *A structured and transparent tariff setting framework for the energy industry that ensures the utilities continuously enhance their efficiencies and increase transparency in supplying energy in full compliance with the projected expenditures.*
ICPT	Pelepasan Kos Tidak Berimbang Mekanisme di bawah rangka kerja IBR yang membolehkan semakan semula tarif elektrik setiap enam (6) bulan bagi mencerminkan perubahan harga bahan api dan kos penjanaan yang lain, yang berada di luar kawalan pihak utiliti.	*Imbalanced Cost Pass-Through* *A mechanism under the IBR framework that allows electricity tariff revisions every six (6) months to reflect changes in fuel and other generation-related costs, which is beyond the control of the utility.*
IEPRe	*Institute of Energy Policy and Research* Sebuah institut penyelidikan di bawah Universiti Tenaga Nasional (UNITEN) yang memfokuskan kepada isu berkaitan tenaga dan alam sekitar.	*Institute of Energy Policy and Research* *A research institute under Universiti Universiti Tenaga Nasional (UNITEN) which focuses on issues related to energy and the environment.*
IPP	Penjana Bebas Entiti yang bukan merupakan pihak utiliti namun memiliki dan mengendalikan stesen jana kuasa untuk menjana elektrik untuk dijual kepada pihak utiliti dan pengguna akhir.	*Independent Power Producer* *An entity that is not a public utility but develops and operates power plants to generate electricity for sale to utilities and end users.*
JPPPET	Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tarif Sebuah jawatankuasa yang bertujuan untuk merancang, menyelaras dan mengenal pasti keperluan bekalan elektrik bagi memenuhi permintaan elektrik di Semenanjung melalui mesyuarat tahunan.	*Planning and Implementation Committee of Electricity Supply and Tariff* *A committee that aims to plan, coordinate and identify electricity supply requirements to meet electricity demand in the Peninsula through an annual meeting.*

kWh	Kilowatt jam Unit pengebilan biasa untuk tenaga elektrik yang dibekalkan oleh pihak utiliti, yang bersamaan dengan satu kilowatt yang dipindahkan dalam satu jam.	*Kilowatt hour* *A common billing unit for electrical energy supplied by electric utilities, which is equivalent to one kilowatt sustained for one hour.*
KWIE	Kumpulan Wang Industri Elektrik Kumpulan wang yang ditubuhkan bagi menguruskan impak tarif elektrik terhadap pengguna atau apa-apa maksud lain yang berkaitan dengan industri elektrik sebagaimana yang disifatkan perlu oleh ST.	*Energy Industry Fund* *A fund established to manage the impact of electricity tariffs on consumers or any other purposes related to the electricity industry as deemed necessary by the Commission.*
LNG	Gas Asli Cecair Gas asli dalam bentuk cecair yang menjadikannya selamat, mudah dan menjimatkan kos untuk diangkut dan disimpan. LNG tidak berwarna, tidak berbau, tidak toksik serta tidak menghakis.	*Liquified Natural Gas* *Natural gas in liquid form which makes it safe, easy and cost-effective to transport and store. LNG is colourless, odourless, non-toxic and non-corrosive.*
LPG	Gas Petroleum Cecair Gas petroleum dalam bentuk cecair yang sangat mudah terbakar, dengan kegunaan utama termasuk menghidupkan peralatan pemanas dan peralatan memasak.	*Liquified Petroleum Gas* *Liquefied form of petroleum gas that is highly flammable, with primary usages including powering heating appliances and cooking equipment.*
LSS	Solar Berskala Besar Program bidaan kompetitif yang membolehkan penjanaan elektrik melalui ladang solar fotovoltaik untuk dijual kepada grid.	*Large Scale Solar* *A competitive bidding programme that allows electricity generation via solar photovoltaic farms to be sold to the grid.*
MEPS	Standard Prestasi Tenaga Minimum Penarafan kecekapan tenaga yang perlu dipenuhi oleh peralatan elektrik tertentu sebelum dijual kepada pengguna.	*Minimum Energy Performance Standards* *Energy efficiency rating that needs to be met by certain electrical appliances before being sold to the consumers.*
MMBtu	*Metric Million British Thermal Unit* Unit yang digunakan secara tradisional untuk mengukur kandungan haba atau nilai tenaga. Ia dikaitkan secara meluas dengan pengukuran gas asli dalam istilah tenaga secara global.	*Metric Million British Thermal Unit* *A unit traditionally used to measure heat content or energy value. It is widely associated with the measurement of natural gas in energy terms globally.*
mmscfd	*Million Standard Cubic Feet per Day* Kadar aliran gas.	*Million Standard Cubic Feet per Day* *The flow rate of gas.*
MSL	Tahap Perkhidmatan Minimum Tahap prestasi minimum yang ditetapkan bagi mengukur kecekapan utiliti dalam memberikan perkhidmatan kepada pengguna.	*Minimum Service Level* *The minimum performance level set to measure the efficiency of the utility in providing service to the consumers.*
MWh	Megawatt jam Ukuran penjanaan elektrik 1 MW yang dihasilkan dalam tempoh satu jam.	*Megawatt hour* *A measure of electricity generation of 1 MW produced over one hour.*
NEDA	*New Enhanced Dispatch Arrangement* Program yang diwujudkan untuk meningkatkan kecekapan kos pasaran Pembeli Tunggal melalui persaingan jangka pendek (harian).	*New Enhanced Dispatch Arrangement* *A programme designed to enhance the cost efficiency of the Single Buyer market through short run (daily) competition.*
NEEAP	Pelan Tindakan Kecekapan Tenaga Nasional Pelan yang menumpukan untuk menangani isu-isu yang berkaitan bekalan tenaga dengan menguruskan permintaan dengan cekap.	*National Energy Efficiency Action Plan* *A plan focused on tackling issues pertaining to energy supply by managing demand efficiently.*

NEM	Pemeteran Tenaga Bersih Mekanisme di mana pengguna yang layak memasang sistem solar fotovoltaik terutamanya untuk kegunaannya sendiri, manakala lebihan tenaga untuk dieksport ke grid dan diimbangi dengan tenaga yang disediakan oleh utiliti.	*Net Energy Metering* *A mechanism where an eligible consumer installs a solar photovoltaic system primarily for his own use while the excess energy is exported to the grid and is offset against the energy provided by the utility.*
NETR	Pelan Hala Tuju Peralihan Tenaga Negara Pelan hala tuju untuk memacu peralihan Malaysia daripada ekonomi berasaskan bahan api fosil tradisional kepada ekonomi hijau bernilai tinggi, dengan pendekatan seluruh negara, merangkumi kerajaan persekutuan dan negeri, industri, orang awam dan masyarakat antarabangsa.	*National Energy Transition Roadmap* *A roadmap for steering Malaysia's shift from a traditional fossil fuels-based economy to a high-value green economy, with a whole-of-nation approach, encompassing federal and state governments, industry, the general public, and the international community.*
OCGT	Turbin Gas Kitar Terbuka Loji janakuasa turbin gas untuk penjanaan elektrik yang beroperasi dalam konfigurasi kitaran terbuka, di mana gas buangan daripada turbin gas dilepaskan terus ke atmosfera selepas ia melalui turbin.	*Open Cycle Gas Turbine* *Gas turbine power plant for electricity generation operating in an open cycle configuration, where the exhaust gases from the gas turbine are released directly into the atmosphere after they pass through the turbine.*
PPA	Perjanjian Jual Beli Tenaga Perjanjian kontrak antara dua pihak, biasanya penjana kuasa (penjual) dan pembeli elektrik (pembeli) yang merangkumi terma dan syarat di mana elektrik akan dijual dalam tempoh masa tertentu.	*Power Purchase Agreement* *A contractual agreement between two parties, typically a power generator (seller) and an electricity purchaser (buyer) which includes the terms and conditions under which electricity will be sold over a specified period of time.*
PTH	Pulau Tenaga Hijau Inisiatif perintis pembangunan Pulau Redang, Pulau Perhentian dan Pulau Tioman bagi menyediakan bekalan elektrik yang konsisten, mampu bayar dan rendah pelepasan karbon.	*Green Energy Island* *A pioneer initiative for the development of Redang Island, Perhentian Island, and Tioman Island to provide consistent, affordable, and low-carbon electricity supply.*
RE	Tenaga Boleh Baharu Tenaga yang didapati daripada sumber boleh diperbaharui dan tidak akan habis seperti solar dan angin.	*Renewable Energy* *Energy collected from renewable and undepletable sources such as solar and wind.*
RGT	Terminal Regasifikasi Fasiliti yang digunakan untuk menukar semula LNG kepada keadaan gas asalnya untuk pengedaran dan penggunaan.	*Regasification Terminal* *A facility used to convert LNG back into its gaseous state for distribution and consumption.*
SAIDI	*System Average Interruption Duration Index* Purata gangguan elektrik dalam minit yang dialami oleh pelanggan dalam setahun.	*System Average Interruption Duration Index* *Average electricity interruptions in minutes experienced by customers in a year.*
SAIFI	*System Average Interruption Frequency Index* Purata kekerapan gangguan bekalan dalam setahun.	*System Average Interruption Frequency Index* *The average frequency of supply interruption per year.*
SARFI	*System Average RMS Frequency Index* Penanda aras antarabangsa bagi penilaian kualiti kuasa yang digunakan untuk merekod bilangan kejadian junaman voltan di bawah paras yang telah ditetapkan.	*System Average RMS Frequency Index* *The international benchmark to measure power quality that is used to record the number of voltage sags that occur below a specified threshold.*
SB	Pembeli Tunggal Sebuah entiti yang diasingkan yang diamanahkan untuk menguruskan perancangan dan perolehan tenaga elektrik di Semenanjung.	*Single Buyer* *A ring-fenced entity entrusted to manage the planning and procurement of electricity in the Peninsula.*

SMR	Reaktor Kecil Bermodul Reaktor nuklear dengan kapasiti penjanaan kuasa kurang daripada 300 MWe seunit yang dibina secara bermodul.	*Small Modular Reactor* *Nuclear reactors with a power generation capacity of less than 300 MWe per unit constructed in a modular manner.*
TBB	Tenaga Boleh Baharu Tenaga yang didapati daripada sumber boleh diperbaharui dan tidak akan habis seperti solar dan angin.	*Renewable Energy* *Energy collected from renewable and undepletable sources such as solar and wind.*
TPA	Akses Pihak Ketiga Sistem yang membolehkan pelbagai entiti mendapat akses dan menggunakan kemudahan gas yang terdapat di Malaysia pada terma dan syarat yang sama.	*Third Party Access* *A system that allows multiple entities to have access to and utilise the gas facilities available in Malaysia on the same terms and conditions.*
UFLS	Lucutan Beban Langkah perlindungan yang digunakan dalam sistem kuasa untuk mengelakkan kejadian putus bekalan yang meluas atau ketidakstabilan sistem semasa situasi kecemasan, seperti kehilangan penjanaan tenaga secara tiba-tiba atau ketidakseimbangan besar antara bekalan dan permintaan elektrik.	*Under-Frequency Load Shedding* *A protective measure used in power systems to prevent widespread blackouts or system instability during emergency situations, such as sudden loss of generation or a large imbalance between electricity supply and demand.*
VAWT	Turbin Angin Paksi Menegak Sejenis turbin angin di mana aci pemutar utama ditetapkan melintang kepada angin manakala komponen utama terletak di dasar turbin.	*Verticle Axis Wind Turbine* *A type of wind turbine where the main rotor shaft is set transverse to the wind while the main components are located at the base of the turbine.*
WASL	*Wide Area System Loss* Kehilangan kuasa elektrik di kawasan geografi yang luas dalam suatu sistem tenaga yang saling berhubung.	*Wide Area System Loss* *Loss of electrical power over a large geographic area within an interconnected power system.*

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