ANNUAL REPORT

DRIVING PROGRESS

TOWARDS A SUSTAINABLE FUTURE

SEDA MALAYSIA 2024
ANNUAL REPORT

What's Inside This Report

SEDA Malaysia at a Glance

Key Messages

Our Leaders

SUSTAINABLE ENERGY DEVELOPMENT AUTHORITY (SEDA) MALAYSIA
Level 6, Cyberview 23A, Persiaran APEC, Cyber 6,
63000 Cyberjaya, Selangor Darul Ehsan.

Tel : +603 8870 5800
Fax : +603 8870 5900
Email : enquiry@seda.gov.my

www.seda.gov.my

Performance Review

Powering Through Partnership

Governance For Impact

Our Core Pillar

Cover Rationale

The cover of the Annual Report brings to life the Authority's mission of "Driving Progress Towards a Sustainable Future." Through carefully framed imagery of solar, biogas, and hydro energy, the design highlights the diversity of Malaysia's RE mix. The flow between these visuals reflects balance, progress, and resilience, while the fresh palette of blue and green underscores themes of sustainability, vitality, and optimism.

At the same time, the design reflects Malaysia's aspiration to lead in RE. By blending natural elements with modern infrastructure, it symbolises harmony between innovation and the environment. Paired with the theme, the cover communicates the Authority's vision of a future that is forward-looking, impactful, and rooted in shared prosperity for generations to come.

SEDA Malaysia at a Glance

5 MW solar farm under the FiT mechanism in Sepang, Selangor.

VISION

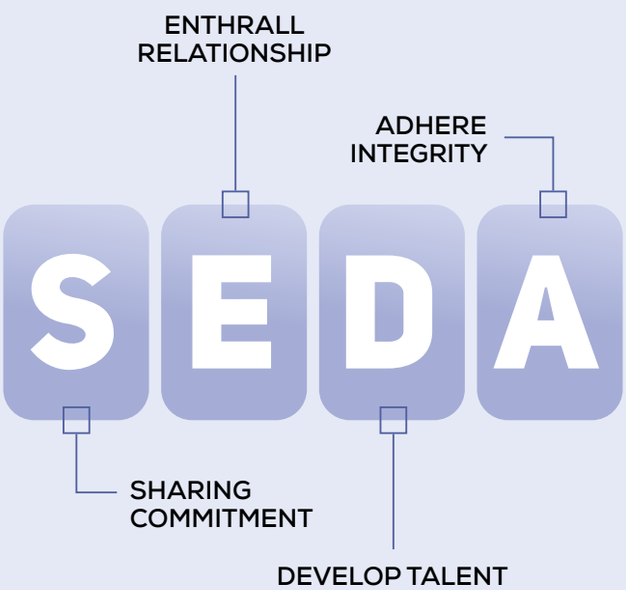
SEDA Malaysia aspires to become a globally respected thought leader on SE.

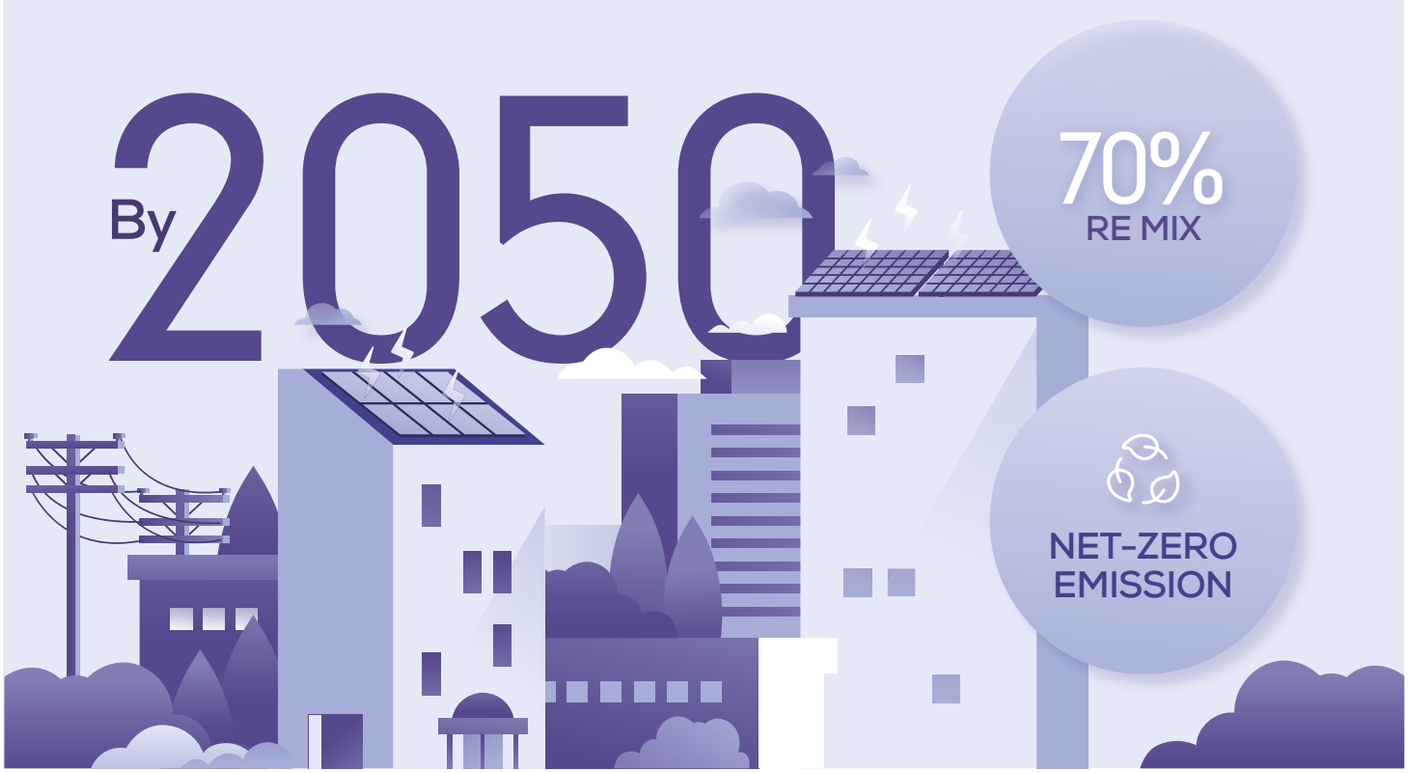
MISSION

Leading the development of SE in alignment with overarching national policies to contribute to a sustainable future.

CORE VALUES

In line with our roles and responsibilities aforementioned, the Authority adheres to the following core values:



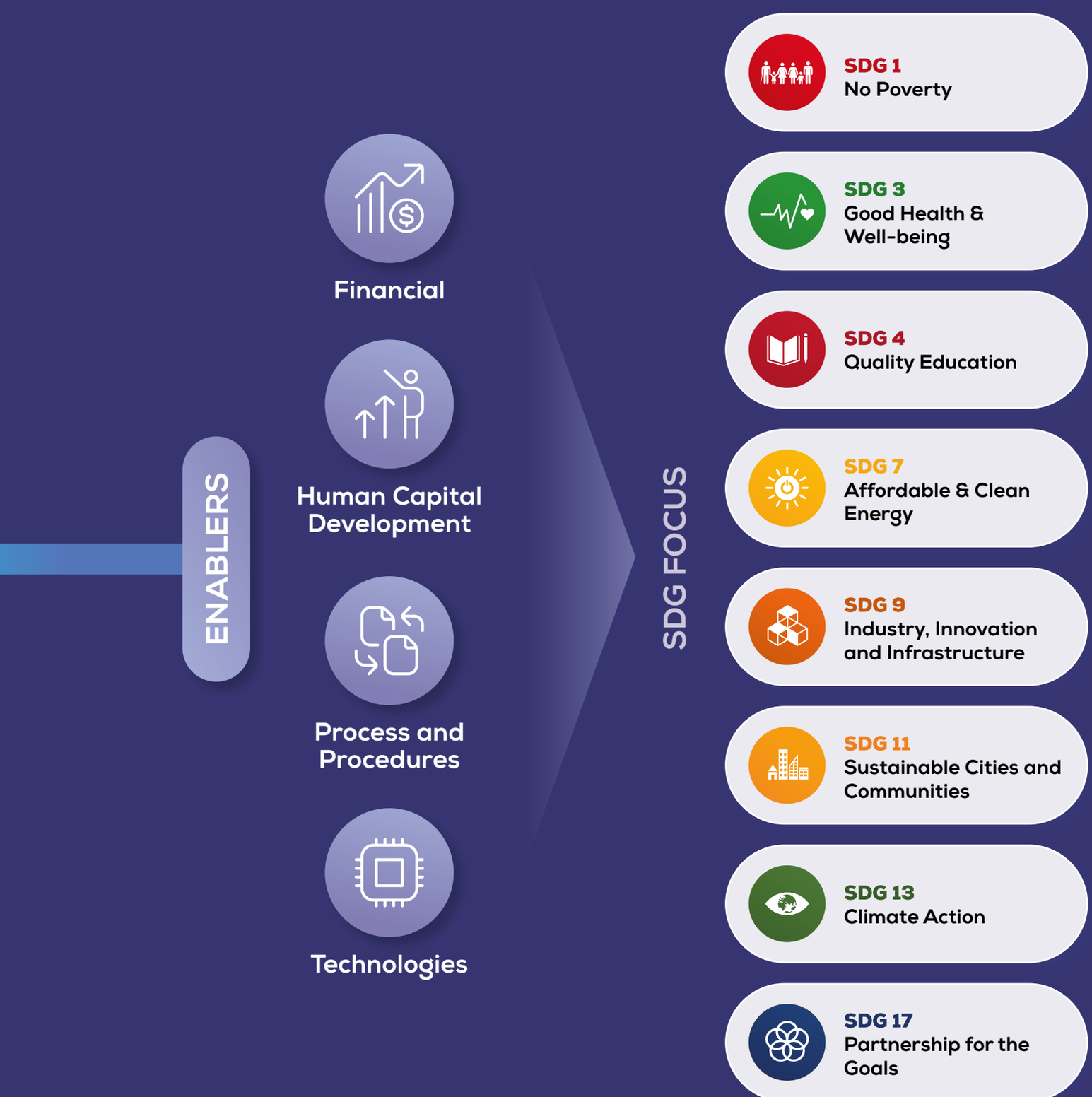


SEDA MALAYSIA AT A GLANCE

SEDA Malaysia's Strategic Pillars

Three Strategic Objectives towards a more Pragmatic Goal

Our Strategic Objectives guide our efforts and initiatives, steering us towards fulfilling our purpose as Malaysia's statutory body in the SE industry.


ENABLERS
Financial
Human Capital Development
Process and Procedures
Technologies
SDG FOCUS
SDG 1
No Poverty
SDG 3
Good Health & Well-being
SDG 4
Quality Education
SDG 7
Affordable & Clean Energy
SDG 9
Industry, Innovation and Infrastructure
SDG 11
Sustainable Cities and Communities
SDG 13
Climate Action
SDG 17
Partnership for the Goals

SEDA MALAYSIA AT A GLANCE

SEDA Malaysia's Value Creation Model

OUR STRATEGY

STRATEGIC GOAL 1

SG1

Accelerate RE share & EE Target to support Energy Transition

STRATEGIC GOAL 2

SG2

Spearhead comprehensive solution to expand SE adoption

STRATEGIC GOAL 3

SG3

Catalyse innovation to enhance SE growth

OUR CAPITALS

FINANCIAL CAPITAL (NET WORTH)

SEDA MALAYSIA
RM79.014 Mil

RE FUND
RM5.038 Bil

*Please refer to page **106** for more information*

MANUFACTURED CAPITAL

FiT PROGRAMME

PLANTS OPERATIONAL
9,519 RE Plants
603.5 MW

IN PROGRESS
95 RE Plants
599.77 MW

NEM PROGRAMME

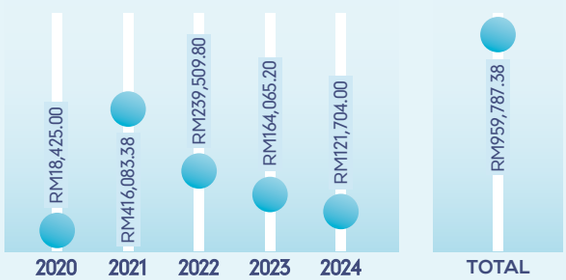
PLANTS OPERATIONAL
55,774 Projects
1,465.70 MW

IN PROGRESS
13,222 Projects
500.51 MW

*Please refer to page **29-40** for more information*

SOCIAL & RELATIONSHIP CAPITAL

Over RM950,000 spent under the CSR activities



*Please refer to page **93** for more information*

INTELLECTUAL CAPITAL

335 RPVSP
346 RPVI

8,786
People trained in SE and EE

3,674
Buildings registered for low carbon assessment

*Please refer to page **43** for Directory and page **47** for People and Building*

INDUSTRY

ECONOMIC

ENVIRONMENT

VALUE CATALYSED

FiT CAPACITY

BIOMASS	BIOGAS
123.93 MW	234.38 MW
SMALL HYDRO	**SOLAR PV**
557.08 MW	287.88 MW

TOTAL FiT
1,203.27 MW

NEM CAPACITY

NEM 2.0	NEM Rakyat
443.66 MW	428.86 MW
NEM GoMEn	**NOVA**
54.63 MW	1,039.06 MW

TOTAL NEM
1,966.21 MW

*Please refer to page **29 & 39** for more information*

Amount of Recovery of Moneys (RoM)
RM4.420 BIL

*Please refer to page **106** for more information*

JOB CREATION

FiT	
Resources	**Jobs**
Biomass	1,770
Biogas	497
Small Hydro	886
Solar PV	1,255
Total	**4,408**

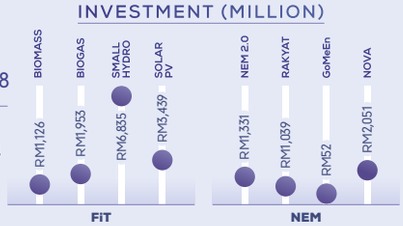
NEM	
Programme	**Jobs**
NEM 2.0	14,574
NEM Rakyat	11,381
NEM GoMEn	572
NOVA	22,364
Total	**48,891**

CAPEX

TOTAL FiT
RM13,353.58

TOTAL NEM
RM4,474.04

INVESTMENT (MILLION)



LOCAL ASSEMBLY/MANUFACTURE OF RE EQUIPMENT

FiT		
Resources	Biomass	Boiler	14
		Gassifier	1
	Biogas	Gas Engine	15
	Solar PV	Module	9
		Inverter	0

Amount of CO_2 emission reduction

RENEWABLE ENERGY	ENERGY EFFICIENCY
1.228M tCO_2eq	534,865.83 tCO_2eq

*Please refer to pages **29-39** as well as page **106** for more information*

Net Energy Metering (NEM)

Building Energy Data Online Monitoring System (BEDOS)

Zero Energy Building (ZEB)

EACG
Energy Audit Conditional Grant (EACG)

Feed-In Tariff (FiT)

Nikmat Untuk Rakyat (NUR)

Sustainable Energy Low Carbon Building Program

*Please refer to page **35** for more information*

OUTCOMES ACHIEVED

5 YEARS

Operating Surplus for the last 5 years

2020 until 2024

SEDA MALAYSIA

2020	RM8.801 Mil
2021	RM5.373 Mil
2022	RM6.267 Mil
2023	RM9.317 Mil
2024	RM6.383 Mil

*Please refer to page **106** for more information*

26%

of RE Installed Capacity

SEDA MALAYSIA AT A GLANCE

Stakeholder Engagement

The Authority is committed to fostering collaborative relationships through its comprehensive stakeholder engagement initiatives. By actively involving a diverse array of stakeholders, including government agencies, industry representatives, and community the Authority ensures that RE

Stakeholders	MINISTRY AND RELATED AGENCIES	INDUSTRY PLAYERS AND INSTITUTIONS
Mode of Engagement	Meetings and Collaborations Monthly Gatherings	Meetings Speaking engagements Conferences Collaborations
Scope of Interest	Achieving the SE target Developing a sustainable nation	Quota awards Registration and regulations for RPVSP & RPVI Training partners Support for projects
Related SDG	SDG 7, SDG13, SDG 17	SDG 7, SDG 8, SDG 9, SDG 13
Enablers	Process and Procedures	Financial, Human Capital Development, Process and Procedures
Strategic Objective	SG1, SG3	SG1, SG2, SG3

policies and programmes are effectively aligned with the needs and expectations of all parties involved. This engagement process facilitates informed decision-making and enhances the implementation and impact of SE initiatives throughout the nation. Through transparent communication and active dialogue, the Authority aims to build consensus and drive collective progress towards a greener energy future, as detailed below;

PUBLIC	INTERNATIONAL ORGANISATIONS	EMPLOYEES
Corporate website Social media Press release Events & Roadshows	Engagements and meetings Collaborations Conference participations	Trainings Staff Gatherings Social media
Programmes introduced by the Government to achieve the SE goal Updates on the current SE landscape Education and Awareness on SE	Updates on the current SE landscape Collaborations and technology transfers	Developing a quality workforce Providing lifelong learning to staff
SDG 3, SDG7, SDG 13	SDG 7, SDG 9, SDG 13, SDG 17	SDG 3, SDG 4, SDG 8
Human Capital Development	Financial, Technologies	Financial, Human Capital Development, Process and Procedures
SG1, SG2	SG2, SG3	SG2

KEY MESSAGES

Chairman's Welcome Message

Assalamualaikum warahmatullahi wabarakatuh and warm greetings to all our esteemed stakeholders. It is with great honour that I address you as the newly appointed Chairman of the Authority, effective from May 2025.

At this critical juncture in both the global and national energy transition, I am deeply committed to upholding the Authority's mandate in driving Malaysia towards a sustainable and resilient energy future.

The year 2024 marked a significant turning point for the global energy sector. Across the world, nations have intensified their shift towards clean and sustainable energy systems in response to the escalating climate crisis, growing energy security concerns, and increasing demand. The momentum behind renewable energy is stronger than ever. Substantial investments have been channelled into key technologies and infrastructure—including battery storage, green hydrogen, and carbon capture—fuelled by both governmental and corporate commitments to net-zero commitments. This transition is further supported by advances in digital energy solutions, enhanced competitiveness of renewables, and progressive policy reforms aimed at decarbonisation and the changing landscape of energy.

These global developments have had a profound influence on Malaysia's own energy landscape. Through the National Energy Transition Roadmap (NETR), the Government has taken bold strides to align our national energy priorities with global trends, ensuring our commitments under the Paris Agreement are firmly on track. Notably, 2025 is expected to mark a key milestone as Malaysia targets a 31% RE capacity mix, as outlined in the Malaysia Renewable Energy Roadmap (MyRER) published by the Authority in 2021. This will signify solid progress towards the national goal of achieving a 70% RE mix by 2050.

A Year of Meaningful Progress

Malaysia made a pivotal chapter in its SE journey—one that reflects not only the momentum of policy innovation but also the maturing of an industry whose foundation was laid over a decade ago. From the very beginning, the Authority has played an instrumental role in initiating and implementing mechanisms to stimulate the growth of the SE sector. Today, we remain proud to continue championing the SE agenda alongside the Ministry of Energy Transition and Water Transformation (PETRA), and in close partnership with stakeholders across the public and private sectors.

Among the key milestones in 2024 was the launch of FiT 2.0, a refined mechanism introduced to strengthen investor confidence and diversify the RE mix beyond solar. As a continuation of the FiT framework first introduced by the Authority in 2011, this next phase reflects our long-term commitment to strengthening dispatchable RE sources—such as biomass, biogas, and small hydropower—which are essential to ensuring system stability as solar adoption accelerates. The successful rollout of FiT 2.0 underscores the Authority's ongoing role in shaping market-ready policies that are both adaptive and forward-focused.

Policy development also progressed with the enactment of the Energy Efficiency and Conservation Act (EECA)—a long-anticipated regulatory milestone to reduce energy intensity across sectors. In parallel, the launch of the Corporate Renewable Energy Supply Scheme (CRESS), building on the earlier Corporate Green Power Programme, has further opened the RE market to corporate players to enhance corporate access to green electricity supply. Through an open grid access system, third parties can sell or purchase electricity via the grid network, accelerating demand-side participation in line with the NETR.

YBhg. Tan Sri Wan Ahmad Dahlan Haji Abdul Aziz
Chairman of the Authority

On a regional front, Malaysia garnered a landmark achievement with the first successful cross-border transmission of 50 MW of green electricity to Singapore via the Energy Exchange Malaysia (ENEGEM) platform. This milestone not only demonstrates technical feasibility but also positions Malaysia as a regional enabler for RE trading and ASEAN power grid integration.

Together, these developments underscore the country's and the Authority's unwavering commitment to advancing a sustainable, secure, and inclusive energy future. As we reflect on the progress made, we take pride in our role as the catalyst for Malaysia's SE transformation—one that we will continue to uphold with foresight, innovation, and collaboration.

Elevating Regional Collaboration and Global Visibility

A defining highlight for us in 2024 was the successful hosting of the 6th International Sustainable Energy Summit (ISES 2024) at the Kuala Lumpur Convention Centre. Themed "Accelerating Energy Transition Through Innovation," the summit attracted over 5,000 participants from 43 countries, including 70 thought leaders and more than 60 exhibitors. It provided a vital platform for dialogue, knowledge exchange, and global partnership building.

From the very beginning, the Authority has played an instrumental role in initiating and implementing mechanisms to stimulate the growth of the SE sector. Today, we remain proud to continue championing the SE agenda alongside the Ministry of Energy Transition and Water Transformation (PETRA)

We were especially honoured by the presence of His Royal Highness The Regent of Pahang, Crown Prince Tengku Hassanal Ibrahim Alam Shah Ibni Al-Sultan Abdullah Ri'ayatuddin Al-Mustafa Billah Shah, who officiated the closing ceremony as Guest of Honour. His attendance underscored the summit's national importance and the growing prominence of the energy transition in shaping Malaysia's development trajectory.

ISES 2024 firmly positioned the Authority as a convenor and thought leader in the SE domain—both nationally and across ASEAN. It bridged the gap between policy and practice, strengthened regional collaboration, and deepened strategic partnerships. The summit also fostered greater public-private engagement and bolstered investor confidence in Malaysia's RE agenda.

Through this platform, the Authority has further solidified its institutional credibility and expanded its network of stakeholders—advancing our vision for a low-carbon, resilient, and integrated energy future.

Charting the Way Forward

Looking ahead, we will continue to spearhead Government-led SE initiatives while serving as a strategic advisor to the Ministry and relevant Government entities on all matters related to the sector. The Authority is also actively undertaking market studies to explore new and emerging RE sources, including wind power, battery energy storage systems, and floating solar applications—paving the way for greater technological diversification in the national energy mix.

These research efforts will provide a sound evidence base for policymaking, support innovation, and identify viable paths for Malaysia's energy transition moving forward.

Guided by both national aspirations and global imperatives, the Authority remains steadfast in its commitment to accelerating a clean, inclusive, and future-ready energy landscape for the country.

In closing, I wish to extend my sincere appreciation to the former Chairman for his dedicated leadership. To the Members of the Authority, our management and staff, and all our stakeholders—thank you for your professionalism, commitment, and partnership. Together, we will continue shaping a more sustainable, secure, and inclusive energy future for all Malaysians.

Thank you.

YBhg. Tan Sri Wan Ahmad Dahlan Haji Abdul Aziz
Chairman of the Authority

ISES 2024 firmly positioned the Authority as a convenor and thought leader in the SE domain—both nationally and across ASEAN. It bridged the gap between policy and practice, strengthened regional collaboration, and deepened strategic partnerships.

KEY MESSAGES

CEO's Review

Assalamualaikum warahmatullahi wabarakatuh and warm greetings.

The year 2024 was a defining period for Malaysia's SE transition. Marked by the introduction of progressive policy frameworks, rising public interest, and strong market participation, the momentum for clean energy has never been stronger.

Amidst global climate urgency and increasing domestic energy demand, the Authority has continued to fulfil its mandate with clarity, diligence, and purpose.

From Framework to Impact

Guided by the NETR, which targets 70% RE capacity by 2050, Malaysia has made significant strides in scaling up its clean energy capacity. Many of the programmes under this roadmap are driven or supported by the Authority.

A key highlight in 2024 was the launch of FiT 2.0, a restructured scheme designed to improve project bankability while ensuring optimal use of the Renewable Energy Fund (RE Fund). The innovative two-phase tariff structure—combining a fixed rate in the first 10 years with market-driven bidding thereafter is set to attract over RM2.1 billion in private investments and generate approximately 4,500 new jobs. Strategically, this mechanism fortifies non-solar RE sources—biogas, biomass, and small hydro—ensuring a more balanced and resilient energy mix.

While solar energy remains vital, its variable nature (VRE) must be complemented by dispatchable resources to ensure system stability. Hence, the implementation of the FiT 2.0 marks a critical evolution in Malaysia's approach to RE diversification.

Public enthusiasm for solar adoption continued to grow in 2024, especially under the Net Energy Metering (NEM) programme. The NEM Rakyat category saw overwhelming demand, prompting two quota increases. Programme guidelines were also enhanced, allowing existing users to upgrade system capacity and transition to current schemes, with the scope expanded to include the agricultural sector—supporting both energy security and food resilience.

In April, the Government introduced the Solar for Rakyat Incentive Scheme (SolaRIS). Managed in tandem with the NEM Rakyat programme, SolaRIS provides a rebate of RM1,000/kW (up to RM4,000) for eligible first-time residential solar adopters. This initiative has not only catalysed rooftop solar uptake but also demonstrated the effectiveness of targeted incentives in shifting consumer behaviour towards SE solutions.

Complementing generation-focused efforts, EE remains a key pillar. The SAVE 4.0 programme was relaunched to provide e-rebates of up to RM400 for the purchase of 4-star or 5-star energy-efficient appliances. As the implementing agency, the Authority hopes to achieve the programme's objective to accelerate adoption of efficient appliances, reduce household electricity consumption, and instil long-term behavioural change among consumers.

Performance Highlights

In 2024, the Authority approved 9,614 Feed-in Approval (FiA) applications, representing 1,203.27 MW of RE installed capacity. Small Hydro contributed the most at 557.08 MW, followed by Solar PV (287.88 MW), Biogas (234.38 MW), and Biomass (123.93 MW). These projects highlight the effectiveness of the FiT mechanism in driving Malaysia's RE expansion.

YBhg. Dato' Hamzah Hussin
Chief Executive Officer

For the NEM programme, NEM 2.0 approved 5,130 applications with a total capacity of 443.66 MW. NEM 3.0 saw 63,866 approved applications totalling 1,522.55 MW across all categories. Notably, NOVA received 7,634 applications totalling 1,039.06 MW, while NEM Rakyat and GoMEN recorded 55,667 (428.86 MW) and 565 (54.63 MW) applications respectively.

Combined, these programmes have made significant contributions towards achieving Malaysia's 31% RE capacity mix by 2025, as set out in the Malaysia Renewable Energy Roadmap (MyRER). These efforts support the longer-term NETR goal of a 70% RE mix by 2050.

On the EE front, through the Energy Audit Conditional Grant (EACG), Sustainable Low Carbon GREENPASS and SAVE 4.0, the Authority achieved cumulative energy savings of 772.38 GWh and a reduction of 653,865.83 tCO_2. Additionally, SEDA successfully trained 8,786 individuals in SE-related fields. This investment in human capital strengthens the national SE ecosystem, enhances innovation, and supports green economy growth.

Powering the Next Chapter

Looking ahead, the Authority will focus on balancing the energy pyramid–

The Authority's continuous effort in building human capability through comprehensive training in SE underscores its dedication to equipping individuals and industries with the necessary skills to contribute to a sustainable future.

prioritising EM and EE at the base and strengthening RE development at the top. Our strategic direction emphasises increasing generation capacity, while being cognizant of the demand side, and optimising system performance.

The Authority continues to be a key implementer of national SE strategies. Beyond administering mechanisms such as the FiT and NEM, our functions include promoting industry growth, conducting market studies for new RE potential, developing skilled talent, and advising on policy development. This multi-pronged role ensures that the energy transition is anchored in technical integrity and long-term planning.

We will continue to explore and support the integration of emerging technologies including bioenergy clustering, battery energy storage systems (BESS), and other potential technologies and resources in Malaysia. These innovations will be central to advancing Malaysia's next wave of clean energy deployment.

Additionally, we remain committed to building human capital through training and certification programmes in RE and EE. Strengthening local expertise will enhance our energy ecosystem, stimulate innovation, and create high-value jobs.

As part of our broader policy engagement, the Authority is actively contributing to the development of the updated National Renewable Energy Policy and Action Plan, ensuring alignment with global best practices and Malaysia's climate commitments.

Appreciation

I extend my heartfelt appreciation to the Ministry of Energy Transition and Water Transformation (PETRA) for the continued trust and confidence in my leadership. I am honoured to serve another term and will continue to uphold the Authority's mission with integrity and resolve.

To the SEDA Board of Directors, our dedicated management, and every member of the SEDA team - thank you for your commitment and excellence. The milestones we achieved in 2024 are a direct result of your collective efforts.

As we move forward in a dynamic and evolving energy landscape, the Authority remains committed to building a sustainable, inclusive, and resilient energy future for the benefit of all Malaysians.

Thank you.

YBhg. Dato' Hamzah Hussin
Chief Executive Officer

The Authority continues to be a key implementer of national SE strategies. Beyond administering mechanisms such as the FiT and NEM, our functions include promoting industry growth, conducting market studies for new RE potential, developing skilled talent, and advising on policy development.

OUR LEADERS

Our Board of Directors

Scan to Read Full **Bio of Authority Members**

CHAIRMAN OF AUTHORITY

YBhg. Tan Sri Wan Ahmad Dahlan Haji Abdul Aziz

YBhg. Tan Sri Wan Ahmad Dahlan Haji Abdul Aziz was appointed as Chairman of the Authority on 15th May 2025.

MEMBER OF AUTHORITY

YBhg. Dato' Haji Mad Zaidi Mohd Karli

YBhg. Dato' Haji Mad Zaidi Mohd Karli was appointed as an Authority Member on 1st February 2024.

MEMBER OF AUTHORITY

YB Lee Chean Chung

YB Lee Chean Chung was appointed as an Authority Member on 1st August 2023.

MEMBER OF AUTHORITY

YBrs. Ir. Abdul Rahim Ibrahim

YBrs. Ir. Abdul Rahim Ibrahim was appointed as an Authority Member on 1st December 2023.

MEMBER OF AUTHORITY

YB Tuan Ganabatirau Veraman

YB Tuan Ganabatirau Veraman was appointed as an Authority Member on 15th November 2023

MEMBER OF AUTHORITY

Dato' Ir. Ts. Gs. Dr. Mohd Azhar Abd Hamid

YBhg. Dato' Ir. Ts. Gs. Dr. Mohd Azhar Abd Hamid was appointed as an Authority Member on 15th November 2023.

MEMBER OF AUTHORITY

YBrs. Tuan Haji Ir. Roslee Esman

YBrs. Tuan Haji Ir. Roslee Esman was appointed as an Authority Member on 1st June 2025.

MEMBER OF AUTHORITY

YBrs. Ts. Azah Ahmad

YBrs. Ts. Azah Ahmad was appointed as an Authority Member on 15th May 2025.

MEMBER OF AUTHORITY

YBhg. Dato' Hamzah Hussin

YBhg. Dato' Hamzah bin Hussin has been appointed as the Chief Executive Officer of the Authority on 22nd February 2021.

OUR LEADERS

The Authority Meeting

The Authority is required, according to the Sustainable Energy Development Authority [Act 726], to hold meetings on a regular basis, with no more than two months between sessions.

In 2024, seven Authority Meetings took place. The specifics are outlined in **Exhibit 1** below:

Authority Meetings	Date
Authority Meeting (No. 1/2024)	5 February 2024
Authority Meeting (No. 2/2024)	26 March 2024
Authority Meeting (No. 3/2024)	21 May 2024
Authority Meeting (No. 4/2024)	20 June 2024
Authority Meeting (No. 5/2024)	6 August 2024
Authority Meeting (No. 6/2024)	1 October 2024
Authority Meeting (No. 7/2024)	28 November 2024

Exhibit 1 List of Authority Meetings in 2024

Authority Committees

The Authority has established seven committees under Section 13 of Act 726 to support the effective performance of its functions. The committees are as follows:

i. **Energy Transition Planning Committee**
ii. **Market Operations Committee**
iii. **Financial Committee**
iv. **Investment Committee**
v. **Procurement Board**
vi. **Human Resource Committee**
vii. **Audit and Integrity Committee**

OUR LEADERS

Management Team

YBHG. DATO' HAMZAH HUSSIN

CHIEF EXECUTIVE OFFICER

EN. KOH KENG SEN

CHIEF OPERATING OFFICER

EN. ROSLAN ALI @ HASSAN

SENIOR DIRECTOR OF STRATEGIC COMMUNICATIONS DIVISION

TS. STEVE ANTHONY LOJUNTIN

DIRECTOR OF TECHNICAL DEVELOPMENT & FACILITATION DIVISION

EN. SAIFUL HAKIM ABDUL RAHMAN

DIRECTOR OF STRATEGIC PLANNING DIVISION

TS. EDISHAM MOHD SUKOR

DIRECTOR OF MARKET OPERATIONS DIVISION

PN. ZAFINA AHMAD
DIRECTOR OF
FINANCE DIVISION

EN. AZARULNIZAM MOHD ZAIN
DIRECTOR OF
DIGITAL SERVICES DIVISION

EN. MOHD HAFIZ JOHARI
DIRECTOR OF
HUMAN RESOURCE &
ADMINISTRATION

PN. MAZLIANA MAZLAN
LEGAL ADVISOR

PN. NOR RADHIHA MOHD ALI
HEAD OF PROCUREMENT UNIT

PN. AFROZA BANU ABD HALIM
HEAD OF SPECIAL UNIT

FEED-IN TARIFF

Scan this QR Code for Further information of **Performance Review on Feed-in Tariff**

PERFORMANCE REVIEW

Feed-in Tariff

In 2024, the Authority had granted approval for 9,614 FiA applications, corresponding to a total of 1,203.27 MW of installed RE capacity.

ACHIEVED

1,203.27 MW
9,614 Projects

1. **Operational | 50.2%**
   603.5 MW
   9,519 Projects

2. **In Progress | 49.8%**
   599.77 MW
   95 Projects

Note:
Peninsular Malaysia and W.P. Labuan

BREAKDOWN OF THE OVERALL STATUS

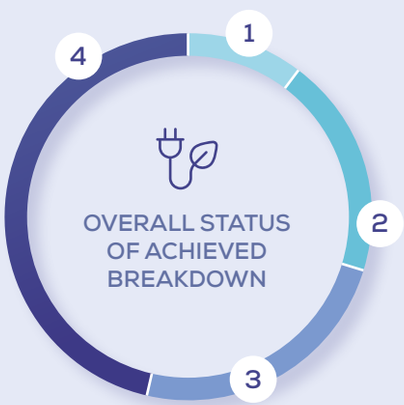
1,203.27 MW
9,614 Projects

1. **Biomass | 10.3%**
   123.93 MW
   15 Projects

2. **Biogas | 19.5%**
   234.38 MW
   133 Projects

3. **Solar PV | 23.9%**
   287.88 MW
   9,412 Projects

4. **Small Hydro Power | 46.3%**
   557.08 MW
   54 Projects



Note: Peninsular Malaysia and W.P. Labuan

Exhibit 2 Feed-in Tariff Key Statistics and Highlights for 2024

In 2024, the Authority had granted approval for 9,614 FiA applications, corresponding to a total of 1,203.27 MW of installed RE capacity. Solar PV systems accounted for the majority of applications, with 9,412 submissions. In terms of approved installed capacities, small hydro emerged as the leading contributor, with 557.08 MW, followed by Solar PV at 287.88 MW, biogas at 234.38 MW, and biomass at 123.93 MW.

OPERATIONAL BREAKDOWN

603.5 MW
9,519 Projects

1. **Biomass | 12.4%**
   74.53 MW
   8 Projects
2. **Biogas | 27.2%**
   164.29 MW
   89 Projects
3. **Solar PV | 47.7%**
   287.88 MW
   9,412 Projects
4. **Small Hydro Power | 12.7%**
   76.80 MW
   10 Projects

Note: Peninsular Malaysia and W.P. Labuan

IN PROGRESS BREAKDOWN

599.77 MW
95 Projects

1. **Biomass | 8.2%**
   49.4 MW
   7 Projects
2. **Biogas | 11.7%**
   70.09 MW
   44 Projects
3. **Small Hydro Power | 80.1%**
   480.28 MW
   44 Projects

Note: Peninsular Malaysia and W.P. Labuan

e-Bidding

The Authority implemented enhancements to the existing FiT application process with the introduction of FiT 2.0 on 17 October 2024, the launch of which was held at the Millennium Ballroom, Hotel Le Meridien, Putrajaya. FiT 2.0 incorporates a two-phase tariff structure. In this framework, a fixed basic FiT rate will be applicable during the initial ten years of the Renewable Energy Power Purchase Agreement (REPPA) period. For the subsequent duration, bidders will have the opportunity to submit bids within the floor and ceiling rates established by the Authority. The launch of FiT 2.0 is designed to enhance the bankability of projects under the FiT mechanism and to optimise the utilisation of the RE Fund.

The determination of FiT rates under FiT 2.0 is detailed in **Exhibit 3**.

The calculation of the FiT bonus rate for biogas sources is at +RM0.1485/kWh and for biomass at +RM0.060/kWh.

The Authority meeting on 21 May 2024 had approved quota applications for small hydro, biogas and biomass resources for the year 2025 via the e-bidding platform as detailed in **Exhibit 4**.

Acceptance Test & Performance Assessment (AT&PA)/ Testing and Commissioning for Renewable Energy Plants under the FiT Programme

The Authority has diligently monitored FiAH scheduled for commissioning in 2024. As of December 2024, a total of fourteen (14) RE projects have been successfully commissioned, comprising thirteen (13) biogas projects and one (1) biomass project, with an aggregate installed capacity of 30.97 MW.

Resources	FiT rates (RM/kWh) & REPPA duration	
	First ten years of the effective period (1-10 years)	Remaining effective period (11-21 years)
	Basic FiT rate set by the Authority	Floor & Ceiling basic FiT rates to bid by Eligible Producer
Biogas	0.3015 (0.4500)	0.2515-0.3015 (0.4000-0.4500)
Biomass	0.3800 (0.4400)	0.2880-0.3800 (0.3480-0.4400)
Small Hydro	0.3400	0.2700-0.3400

Note: FiT rate refers to the basic FiT rate + FiT bonus rate.

Exhibit 3 FiT rates under FiT 2.0

Renewable Resources	Quota Offered (MW)	Estimated Commercial Operation (Year)	Quota Opening Date
Biogas	50	2028	10.00 am, 15 January, 2025 to 1.00 pm, 19 February 2025
Biomass	40	2028	
Small Hydro	100	2030	

Exhibit 4 Quota Approved for Small Hydro, Biogas and Biomass for 2025 via eBidding

All biogas projects utilise biogas extracted from Palm Oil Mill Effluent (POME) as their fuel source. The majority of the commissioned biogas power plants employ covered lagoon technology for effective methane capture. In contrast, the biomass project utilises rice husk as fuel in its boiler systems to generate electricity.

The details of the commissioned biogas plants for the year 2024 are provided in **Exhibit 5**.

No.	Renewable Resources	Installed Capacity (MW)	FiTCD	Location	Source of fuel
1	FERMANAGAN BIOBRIDGE HALL SDN BHD	1.600	22/03/2024	KKS Fermanagan, Sepang, Selangor	POME
2	GLT LESTARI SDN. BHD.	0.901	14/04/2024	KKS, Merchong, Rompin, Pahang	POME
3	WZS BIOGAS JERANTUT SDN BHD	1.000	26/05/2024	KKS Jerantut	POME
4	WZS BIOGAS JERANTUT SDN BHD	0.528	26/05/2024	KKS Jerantut	POME
5	GLT BP POWER SDN BHD	3.560	10/04/2024	Mukim Jorak, Johor	POME
6	LEMBING POWER SDN BHD	1.560	31/01/2024	KS Lembing, Kuantan, Pahang	POME
7	CENERGI CLASSIC SDN. BHD.	2.400	14/04/2024	KS Classic, Negeri Sembilan	POME
8	CFJP BIOGAS SDN BHD	4.000	14/04/2024	KS Felcra Jayaputra, Jerantut, Pahang	POME
9	ANSON OIL INDUSTRIES SDN BHD	1.234	29/05/2025	KS Anson Oil, Teluk Intan, Perak	POME
10	GLT AGRO POWER SDN BHD	0.635	10/10/2024	KS Topaz Emas, Trong, Perak	POME
11	GLT MAJU SDN BHD	1.202	03/11/2024	KS Tian Siang (Triang), Bera, Pahang	POME
12	CENERGI SG. DINGIN SDN. BHD.	1.200	11/10/2024	KKS Sungai Dingin, Kulim, Kedah	POME
13	CENERGI KF SDN. BHD.	1.200	25/12/2024	KKS Kok Foh, Bahau, Negeri Sembilan	POME
14	MAJUNAKA ECO ENERGY SDN BHD	9.950	31/12/2024	Padang Kerasak, Naka, Kedah	Rice Husk

Exhibit 5 List of commissioned Biogas plants for 2024

Below are some pictures taken during the AT&PA activities:

On-Site Gas Sampling Activities During Electrical Efficiency Testing for Cenergi Classic Sdn. Bhd. by Accredited Laboratory Representatives.

The Authority conducted a line walk session and facilitated on-site discussions regarding the Acceptance Test & Performance Assessment (AT&PA) procedures for Cenergi Classic Sdn. Bhd. and CFJP Biogas Sdn. Bhd.

Renewable Energy Installed Capacity under FiT Mechanism

Year	Resources (MW)				Total Installed Capacity (MW)
	Biogas	Biomass	Small Hydro	Solar PV	
2012	7.41	15.40	9.20	26.32	**58.32**
2013	11.73	15.40	9.20	115.56	**151.89**
2014	12.83	19.00	9.20	163.29	**204.32**
2015	17.03	26.00	11.80	201.18	**256.01**
2016	32.50	39.00	23.80	254.60	**349.89**
2017	52.16	39.00	23.80	282.89	**397.85**
2018	60.34	44.85	43.80	287.50	**436.49**
2019	97.50	44.85	63.80	288.30	**494.44**
2020	101.00	44.85	63.80	288.49	**498.14**
2021	114.71	44.85	63.80	288.30	**511.66**
2022	128.01	44.85	76.80	288.22	**537.88**
2023	143.27	64.58	76.80	288.05	**572.70**
2024	164.29	74.53	76.80	287.87	**603.49**
Percentage (%)	**19%**	**10%**	**11%**	**60%**	**100%**

Exhibit 6 Total RE Installed Capacity under FiT from 2012 to 2024

The FiT programme has successfully supported the growth of RE in Malaysia. As of 2024, the total installed capacity under FiT reached 603.49 MW, a major increase from just 58.32 MW in 2012.

Solar PV remains the largest contributor under the FiT mechanism, accounting for approximately 60% of the total installed capacity. It has demonstrated steady growth over the years, increasing from 26.32 MW in 2012 to 287.87 MW in 2024. Biogas experienced the most significant growth in percentage terms, reaching 164.29 MW, which represents around 19% of total FiT capacity. Biomass remained relatively stable, with moderate growth observed in the last two years, ending at 74.53 MW and contributing 10% to the FiT portfolio. Small hydro also grew gradually, achieving 76.80 MW and accounting for 11% of the total capacity.

The mixing tank of the 1.6 MW biogas plant operated by Fermanagan Biobridge Hall Sdn. Bhd. utilises Palm Oil Mill Effluent (POME) as its fuel source.

The water tube boiler system and steam turbine installed at Majunaka Eco Energy Sdn. Bhd. are depicted above, along with the rice husk utilised as fuel for the plant's operations.

CO_2 Avoidance Emissions under the FiT Programme

Year	Resources (tonnes)				Total (tonnes)
	Biogas	Biomass	Small Hydro	Solar PV	
2012	5,604.57	2,930.09	15,895.54	5,134.56	**29,564.75**
2013	18,147.89	8,343.77	42,153.26	40,438.70	**109,083.62**
2014	34,885.12	9,336.66	36,723.32	134,649.43	**215,594.54**
2015	32,290.99	35,999.30	31,436.60	175,115.43	**274,842.33**
2016	56,624.86	52,395.81	29,133.32	208,578.10	**346,732.09**
2017	133,482.24	99,261.02	48,625.42	288,568.12	**569,936.79**
2018	163,542.87	97,623.88	64,278.92	331,479.83	**656,925.50**
2019	200,155.63	96,997.19	161,123.76	315,026.64	**773,303.23**
2020	318,933.28	74,561.77	230,440.61	331,958.35	**955,894.01**
2021	319,569.81	80,771.36	205,769.57	304,685.23	**910,795.96**
2022	389,627.28	90,286.51	247,960.23	288,755.29	**1,016,629.31**
2023	408,929.29	135,549.86	228,240.59	291,115.49	**1,063,835.22**
2024	507,034.31	94,637.55	213,602.66	289,262.88	**1,104,537.39**
Percentage (%)	**32%**	**11%**	**19%**	**37%**	**100%**

Exhibit 7 Total CO_2 avoidance under the FiT mechanism from 2012 to 2024

CO_2 EMISSIONS AVOIDANCE (TONNES)

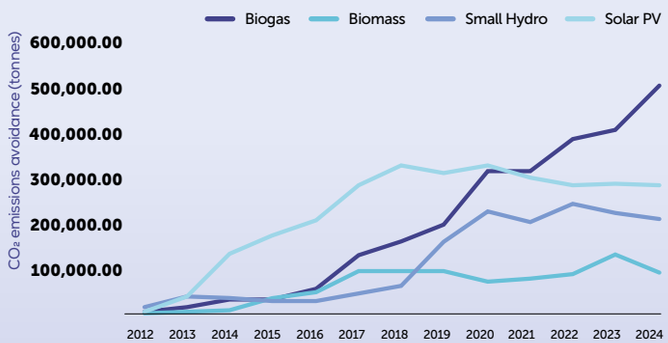


Exhibit 8 Total CO_2 emissions avoidance under the FiT mechanism from 2012 to 2024

Since the inception of the FiT programme in 2012, Malaysia has witnessed a consistent and substantial increase in greenhouse gas (GHG) emissions avoidance through the deployment of RE technologies. Over the span of 13 years, total cumulative CO_2 emissions avoided had reached 1,104,537.39 tonnes by the end of 2024.

Solar PV was the biggest contributor, facilitating the avoidance of 37% of total emissions. Its impact grew steadily, reaching 289,262.88 tonnes in 2024, driven by strong adoption and continuous installations. Biogas followed closely, making up 32% of avoided emissions. It showed strong growth over the years, especially from 2016 onwards, reaching 507,034.31 tonnes by 2024. Small hydro contributed 19% of the total, with its CO_2 avoidance increasing to 213,602.66 tonnes in 2024, reflecting gradual project implementation. Biomass contributed towards 11% of the total CO_2 avoidance, with some fluctuations over the years, ending with 94,637.55 tonnes in 2024.

Overall, the steady rise in avoided emissions each year reflects the effectiveness of the FiT programme in supporting Malaysia's energy transition and climate goals.

POSITIVE IMPACTS OF CO_2 REDUCTION

What does the avoidance of 9.27 million tonnes of CO_2 mean for the environment?

TOTAL CO_2 AVOIDED

9,276,613.15
metric tonnes

The illustration in **Exhibit 9** provides an equivalency-based comparison using the United States Environmental Protection Agency's (EPA) Greenhouse Gas Equivalencies Calculator to contextualise the significance of this milestone.

This is equivalent to greenhouse gas emissions from

- **2,163,819** gasoline-powered passenger vehicles driven for one year
- **8,192,668** electric-powered passenger vehicles driven for one year
- **23,623,447,883** miles driven by an average gasoline-powered passenger vehicle

This is equivalent to greenhouse gas emissions avoided by

- **3,277,955** tons of waste recycled instead of landfilled
- **468,279** garbage trucks of waste recycled instead of landfilled
- **788,571,975** trash bags of waste recycled instead of landfilled
- **2,771** wind turbines running for a year

This is equivalent to carbon sequestered by

- **153,389,596** tree seedlings grown for 10 years
- **9,304,991** acres of U.S. forests in one year
- **55,428** acres of U.S. forests preserved from conversion to cropland in one year

This is equivalent to CO_2 emissions from

- **1,043,840,796** gallons of gasoline consumed
- **911,258,659** gallons of diesel consumed
- **10,304,600,080** pounds of coal burned
- **112,805** tanker trucks' worth of gasoline
- **1,245,821** homes' energy use for one year
- **1,933,206** homes' electricity use for one year
- **51,426** railcars' worth of coal burned
- **21,477,321** barrels of oil consumed
- **426,159,018** propane cylinders used for home barbeques
- **2.4** coal-fired power plants in one year
- **24.3** natural gas-fired power plants in one year
- **749,984,241,535** number of smartphones charged

Exhibit 9 Positive Impact of Total CO_2 Avoidance

Research and Studies by the Authority

Study on Displaced Cost, Grid Parity, and Feed-in Tariff Revision

Study with Focus on Feed-in Rate and Displaced Cost Revision as well as Determination on Grid Parity Condition to Further Refine the Feed-in Tariff Mechanism in Peninsular Malaysia and Sabah

One of the Authority's core mandates under the Renewable Energy Act 2011 is to administer and enhance the FiT mechanism. This includes the continuous review and refinement of relevant policies, subsidiary legislation, regulations, and guidelines.

This study was initiated to assess and revise FiT rates to further encourage the growth of RE while ensuring long-term business viability. It also aims to determine a more accurate Displaced Cost (DC) to improve the governance of the RE Fund and support greater RE quota allocations.

Moreover, the study projects when various RE technologies may reach grid parity within Malaysia's unique energy context—where RE becomes cost-competitive with conventional sources without financial support.

Key objectives include:

1. Reviewing and adjusting FiT rates in line with the Authority's strategic needs;

2. Revising the DC rate for high-voltage users in Peninsular Malaysia and updating existing rates in line with the Base Tariff development under Regulatory Period 4 (2025) of the Incentive-Based Regulation (IBR) framework for both Peninsular Malaysia and Sabah;

3. Assessing the extent to which specific RE technologies have attained grid parity, in accordance with Section 21 of the Renewable Energy Act 2011.

The outcome is expected to ensure that the FiT mechanism remains robust, adaptive, and reflective of evolving cost structures, technology advancements, and global best practices.

Study on Consumer-based Battery Energy Storage Systems (BESS)

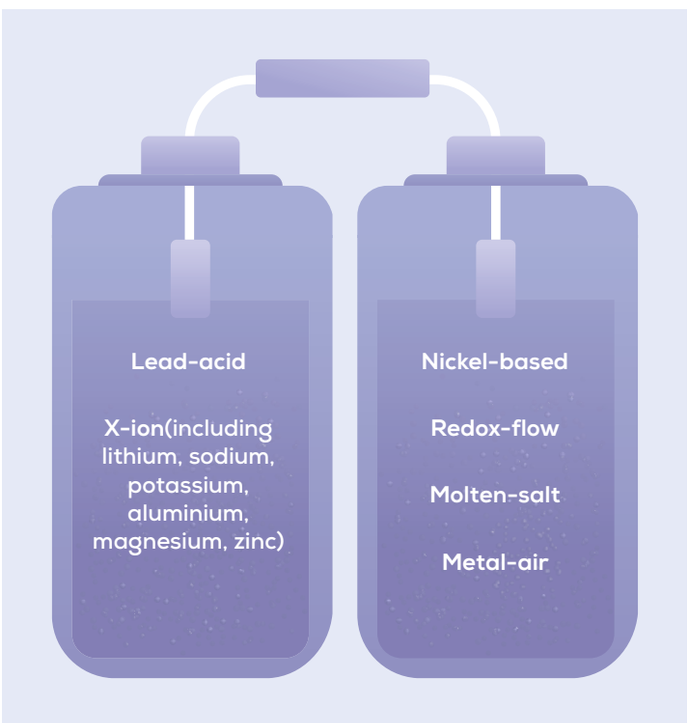
Insights on Consumer-based Battery Energy Storage Systems (BESS) in the Tropical Climate of Malaysia

This ongoing report is the result of a collaborative effort between the Authority and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia, supported by technical experts from Universiti Kebangsaan Malaysia (UKM) and Universiti Pertahanan Nasional Malaysia (UPNM). The drafting process began in late 2024, with completion expected in 2025.

The report presents a thorough assessment of Battery Energy Storage Systems (BESS) from technical, commercial, and sustainability perspectives, tailored to Malaysia's tropical climate conditions. It is intended to guide the selection and deployment of appropriate BESS technologies across residential, commercial, and industrial settings.

The study begins by aligning BESS adoption with national energy strategies, including the NETR and the MyRER—both of which aim for 70% RE share in the electricity mix by 2050. BESS is recognised as a critical enabler in mitigating the intermittency of RE sources.

The second section offers a comparative evaluation of six electrochemical battery technologies:



Each technology is assessed based on its structural composition, performance capabilities, technological and commercial readiness, safety, and environmental impacts. SWOT analyses are provided to assist stakeholders in understanding the suitability and limitations of each option.

In the third section, the report examines how Malaysia's tropical climate—characterised by high temperatures, humidity, and salinity—affects battery efficiency and longevity. It underscores the urgent need for localised data and continued research to develop Tropical Energy Storage Solutions (TESS) that are better adapted to such conditions.

In conclusion, the report provides data-driven insights and practical recommendations to enable the Authority and industry stakeholders to make informed decisions regarding BESS deployment—tailored to both the environmental context and national energy objectives.

Focus Group Discussion organised by the Authority for the DC Study

Surveyor measuring the river cross-section at Sungai Bernam

Training at Worldwide Small Hydropower Station, Sungai Batang Kali.

SEDA Malaysia and CSIRO team during a visit to the battery shredder pilot plant at CSIRO Clayton

NET ENERGY METERING

Scan this QR Code for Further information of **Net Energy Metering**

PERFORMANCE REVIEW

Net Energy Metering

As of 31 December 2024, the Authority has approved a total of 5,130 applications under the NEM 2.0 scheme, corresponding to an aggregate capacity of 443.66 MW. The domestic category accounted for the highest number of applications, totaling 3,064. In terms of approved capacity, the industrial category emerged as the largest contributor, with 271.01 MW from 666 applications, followed by the commercial category at 141.53 MW, the domestic category at 24.27 MW, and the agricultural category at 6.84 MW.

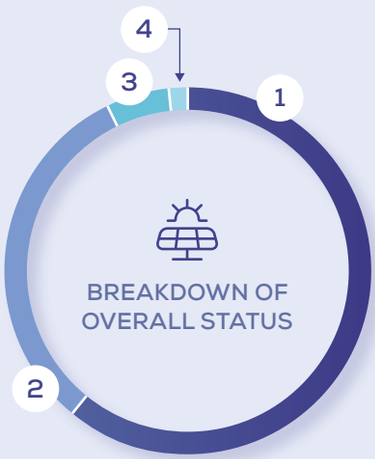
NEM 2.0

ACHIEVED

443.66 MW
5,130 Projects

1 **Operational | 94.2%**
418.01 MW
5,085 Projects

2 **In Progress | 5.8%**
25.65 MW
45 Projects



BREAKDOWN OF OVERALL STATUS

1 **Industrial | 61.1%**
271.01 MW
666 Projects

2 **Commercial | 31.9%**
141.53 MW
1,372 Projects

3 **Residential | 5.5%**
24.27 MW
3,064 Projects

4 **Agricultural | 1.5%**
6.84 MW
28 Projects

BREAKDOWN OF OPERATIONAL

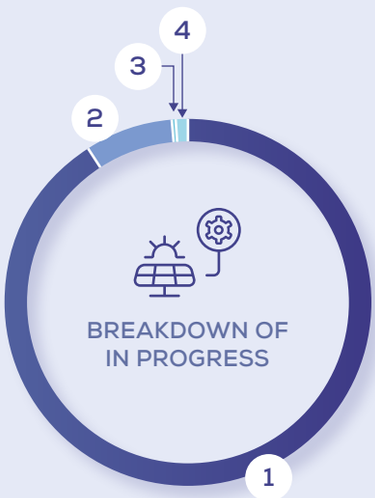
418.01 MW
5,085 Projects

1 **Industrial | 59.3%**
247.69 MW
661 Projects

2 **Commercial | 33.4%**
139.53 MW
1,344 Projects

3 **Residential | 5.8%**
24.19 MW
3,053 Projects

4 **Agricultural | 1.5%**
6.59 MW
27 Projects



BREAKDOWN OF IN PROGRESS

25.65 MW
45 Projects

1 **Industrial | 90.9%**
23.32 MW
5 Projects

2 **Commercial | 7.8%**
2 MW
28 Projects

3 **Residential | 0.33%**
0.08 MW
11 Projects

4 **Agricultural | 0.97%**
0.25 MW
1 Project

Note: Peninsular Malaysia and W.P. Labuan

Exhibit 10 NEM 2.0 Key Statistics and Highlights for 2024

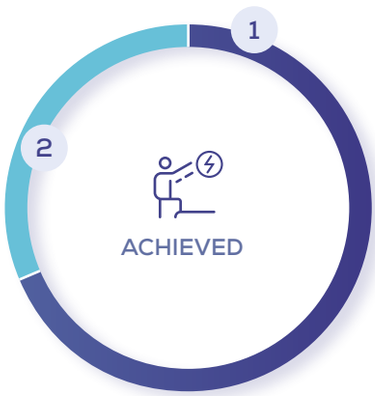
NEM 3.0

ACHIEVED

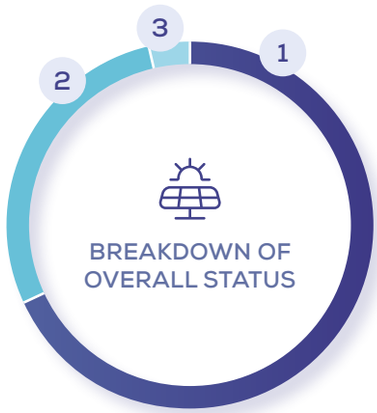
1,522.55 MW
63,866 Projects

1 **Operational | 68.8%**
1,047.69 MW
50,689 Projects

2 **In Progress | 31.2%**
474.86 MW
13,177 Projects



BREAKDOWN OF OVERALL STATUS



1 **NOVA | 68.2%**
1,039.06 MW
7,634 Projects

2 **NEM Rakyat | 28.2%**
428.86 MW
55,667 Projects

3 **NEM GoMEn | 3.6%**
54.63 MW
565 Projects

BREAKDOWN OF OPERATIONAL

1,047.69 MW
50,689 Projects

1 **NOVA | 65.3%**
683.82 MW
5,286 Projects

2 **NEM Rakyat | 33.1%**
346.46 MW
45,161 Projects

3 **NEM GoMEn | 1.6%**
17.42 MW
242 Projects

BREAKDOWN OF IN PROGRESS

474.86 MW
13,177 Projects

1 **NOVA | 74.8%**
355.24 MW
2,348 Projects

2 **NEM Rakyat | 17.4%**
82.41 MW
10,506 Projects

3 **NEM GoMEn | 7.8%**
37.21 MW
323 Projects

Note: Peninsular Malaysia and W.P. Labuan

Exhibit 11 NEM 3.0 Key Statistics and Highlights for 2024

As of 31 December 2024, a total of 63,866 applications have been approved across the three (3) NEM categories, amounting to an aggregate capacity of 1,522.55 MW. The NOVA initiative garnered significant interest, with 7,634 applications approved, representing a total capacity of 1,039.06 MW from the allocated quota of 1,400 MW. In parallel, 55,667 applications were approved under the NEM Rakyat category, contributing a total capacity of 428.86 MW, while 565 applications were approved for the NEM GoMEn category, accounting for a total capacity of 54.63 MW.

REGISTERED PV SERVICE DIRECTORIES

Scan this QR Code for Further information of **Performance Review** on **Registered PV Service Directories**

PERFORMANCE REVIEW

Registered PV Service Directories

The Authority's dedication to cultivating a robust and sustainable RE ecosystem is exemplified through its comprehensive Registered PV Service Directories, which lists service providers and investors.

As of 2024, a total of 335 PV service providers have registered with the directory, reflecting a steady growth in the sector.

As such, these directories are vital resources for individuals and businesses in search of reliable and qualified PV service providers and investors. By consistently maintaining and updating these directories, the Authority ensures that stakeholders have access to credible and experienced professionals capable of supporting the development, installation, and financing of Solar PV projects nationwide. This initiative not only enhances transparency and trust within the industry but also facilitates the effective integration of solar energy into Malaysia's energy mix.

Registered PV Service Providers Directory

The Registered PV Service Providers Directory is a meticulously curated compilation of certified companies and individuals offering a comprehensive range of services related to Solar PV systems. This directory encompasses service providers specialising in system design, installation, maintenance, and consultancy. Each listed provider has undergone a rigorous vetting process to ensure compliance with the Authority's stringent standards for quality, safety, and performance.

By utilising this directory, consumers and businesses can confidently engage with reputable service providers, assured of receiving professional and reliable services tailored to their specific requirements. As of 2024, a total of 335 PV service providers have registered with the directory, reflecting a steady growth in the sector. The Registered PV Service Providers Directory Summary is detailed in **Exhibit 12**.

RPVSP DIRECTORY SUMMARY
by Year

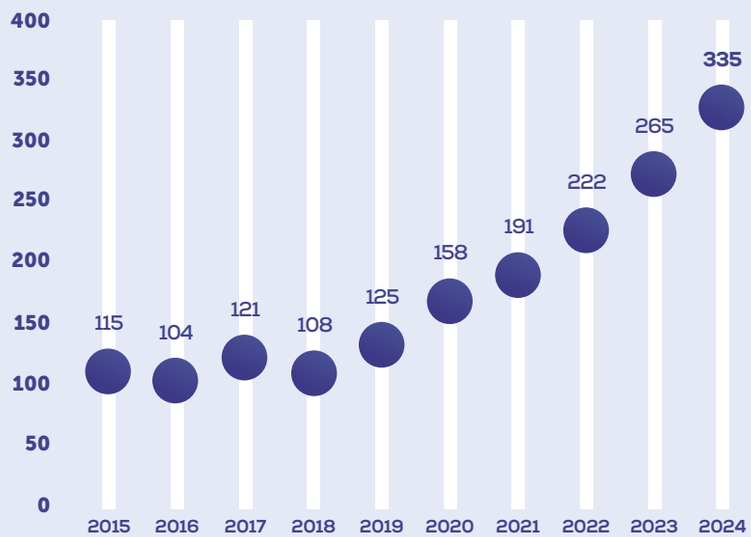


Exhibit 12 Registered PV Service Providers Directory Summary for 2024

RSPVI DIRECTORY SUMMARY
by Year

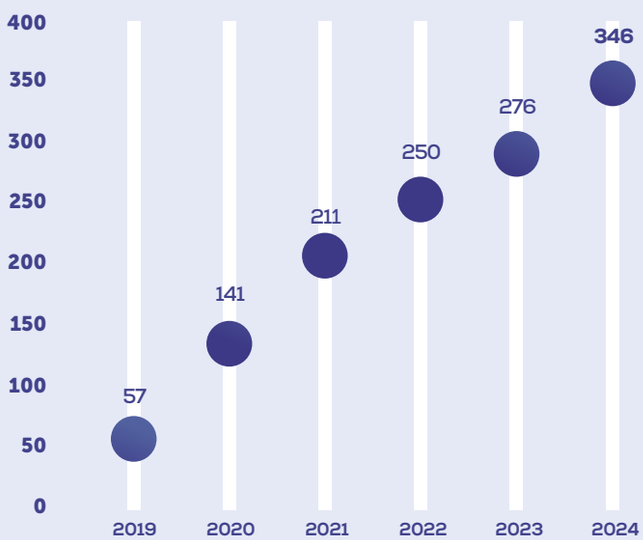


Exhibit 13 Number of Registered PV Investors on the online directory as of 2024

Registered PV Investor Directory

The Registered PV Investors Directory serves as a vital resource for connecting project developers with a dedicated group of investors focused on financing Solar PV projects. These investors play a crucial role in providing the necessary capital and expertise to facilitate the deployment of solar energy systems across a range of applications, from residential setups to large-scale commercial initiatives. This collaboration is essential for accelerating the growth of Malaysia's solar energy sector, ultimately contributing to the nation's RE goals and promoting a SE future.

As of 2024, the Authority has recorded a total of 346 registered investors in the RPVI directory. This marks a significant increase in participation, reflecting the growing interest in solar energy investments. The monthly payments for solar leasing or Power Purchase Agreements (PPAs) can be made directly by customers to their registered PV investors or through TNB's integrated billing system, which allows for seamless payment processing via the SARE platform. Additionally, registered investors are eligible to apply for green incentives from the Malaysian Investment Development Authority (MIDA), further enhancing the attractiveness of solar investments.

The following **Exhibit 13** illustrates the growth in the number of registered Solar PV investors over the years.

This upward trend underscores the increasing commitment of investors to support the solar energy landscape in Malaysia, reinforcing the importance of the RPVI Directory in fostering partnerships that drive the RE sector forward.

TECHNICAL DEVELOPMENT AND FACILITATION

Scan this QR Code for Further information of **Technical Development and Facilitation**

PERFORMANCE REVIEW

Technical Development and Facilitation

Energy Audit Conditional Grant

RMK 12 EACG - Energy Audit Conditional Grant (EACG) for Commercial and Industrial Sector (RMK-12)

The Energy Audit Conditional Grant (EACG 2.0) is an EE initiative for the period 2021 to 2025, introduced by the government as a continuation of the previous Energy Audit Conditional Grant under the 11th Malaysia Plan (RMK-11). This programme is backed by grants allocated for the years 2021 through 2025, aimed at supporting the commercial and industrial sectors in partnership with local Energy Service Companies (ESCOs) registered with the Energy Commission (ST) to perform energy audits in their facilities.

This programme is executed by the Ministry of Energy Transition and Water Transformation (PETRA), with the Energy Commission (ST) as the coordinator and the Authority as the implementing agency of the programme for both commercial and industrial sectors.

This program is backed by grants allocated for the years 2021 through 2025, aimed at supporting the commercial and industrial sectors in partnership with local ESCOs registered with the ST to perform energy audits in their facilities.

The primary objectives of the EACG programme are as follows:

1. To provide financial assistance through a conditional grant over a five-year period (2021-2025).
2. To act as a catalyst for conducting energy audits, enabling the identification of total energy consumption and establishing baselines for industrial and commercial buildings.
3. To offer a platform and facilitate the implementation of energy-saving measures (ESMs) based on the findings of the energy audit reports.
4. To enhance the capacity of building owners and ESCOs to meet current and future EM demands in the industrial and commercial sectors.
5. To promote awareness of the significance of EM among industrial and commercial building owners in Malaysia, aiming to reduce electricity consumption.

Current Achievement

Over the past year, 21 successful seminars were conducted to promote the EACG programme. These seminars provided a valuable platform for engaging with the target audience and raising awareness about the benefits and opportunities the programme offers. The outreach included both physical and hybrid formats, effectively reaching various stakeholders, including building owners and ESCOs. **Exhibit 14** details the list of seminars and webinars conducted to enhance awareness of the EACG programme.

No.	Seminar	Date	Participants
1	EACG Seminar Central Region No.1 (Seremban)	15 Feb 2024	50 Participants
2	EACG Talk with DRB HiCOM No.1	Invited by DRB HiCOM	
3	EACG Discussion with MBI Selangor	Invited by MBI Selangor	
4	EE & EACG Talk (Kedah State)	Invited by MPC/TPN	
5	EACG Talk with DRB HiCOM No.2	Invited by DRB HiCOM	
6	EACG Seminar Northern Region No. 1 (Kedah)	11 Mar 2024	50 Participants
7	EACG Talk with PETRONAS Carigali	Invited by PETRONAS	
8	EE & EACG Talk (Terengganu State)	Invited by MPC/TPN	
9	EACG Seminar Southern Region (Melaka)	30 Apr 2024	50 Participants
10	EACG Seminar Eastern Region (Terengganu)	28 May 2024	50 Participants
11	EACG Seminar Central Region No.2 (Kuala Lumpur)	26 Jun 2024	50 Participants
12	EACG Seminar Borneo Region No.1 (Sabah)	4 Jul 2024	50 Participants
13	EACG Seminar Northern Region No.2 (Penang)	1 Aug 2024	50 Participants
14	EACG Presentation to Malaysia Association of Hotels	Invited by MAH	
15	Industrial Townhall: Energy Efficiency Approach & Digitalised Technology	Invited by MYCES	
16	EACG Seminar Borneo Region No.2 (Sarawak)	8 Aug 2024	50 Participants
17	6th International Sustainable Energy Summit (ISES)	Hosted by the Authority	
18	Energy Efficiency & Sustainable Energy Tabung Haji	Invited by Tabung Haji	
19	EACG Seminar Perak State	24 Sept 2024	50 Participants
20	City Council MBPP: Sustainable Development Goals	Invited by MBPP	
21	EACG Seminar Melaka State (Collaboration with PTHM)	26 Nov 2024	50 Participants
22	FMM Energy Efficiency & Conservation Conference	Invited by MYCES	

Exhibit 14 List of Seminars and Webinars conducted to increase EACG Programme awareness

Energy Audit Conditional Grant for Commercial and Industrial Sector (RMK-12)

In the previous year, 2024, the total allocated budget amounted to RM24,093,700, with an available quota of 214 for the commercial and industrial sectors. The Steering Committee Meeting, chaired by PETRA, approved a total of 120 grants for the industrial sector and 94 grants for the commercial sector. Consequently, the total number of grants approved for 2024 stands at 214.

Exhibit 15 and **16** details the total grant applications by sector and by state respectively.

In alignment with the terms of reference for the EACG and EM under the RMK-12, the Authority provides training sessions centered on EM and AU. These sessions are tailored for successful applicants and designated ESCOs. In 2024, a series of training sessions were successfully held, as detailed in **Exhibit 17**.

Total Grant Applications Based on Sector

1. **Industrial | 120**
2. **Commercial | 94**

Exhibit 15 Total Grant Applications based on Sector

Total Grant Applications Based on State

1. **Selangor | 75**
2. **Johor | 40**
3. **Kuala Lumpur | 36**
4. **Pulau Pinang | 25**
5. **Perak | 9**
6. **Kedah | 8**
7. **Melaka | 7**
8. **Negeri Sembilan | 7**
9. **Pahang | 6**
10. **Sabah | 5**
11. **Sarawak | 4**
12. **Kelantan | 1**
13. **Terengganu | 1**
14. **Perlis | 1**

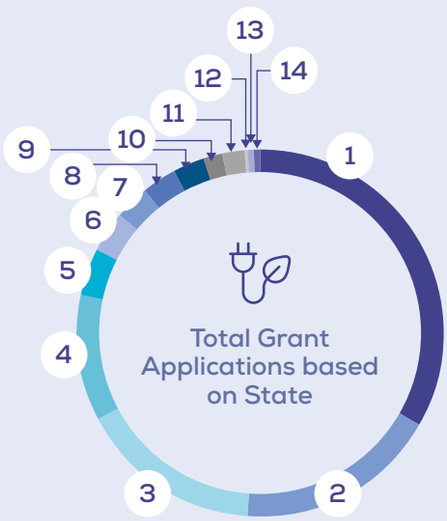


Exhibit 16 Total Grant Applications based on State

No.	Training Session	Number of Participants
1	Training on Energy Management and Energy Audit in Buildings Session 01/2024	23
2	Training on Energy Management and Energy Audit in Buildings Session 02/2024	30
3	Training on Energy Management and Energy Audit for Industrial Installation 01/2024	28
4	Training on Energy Management and Energy Audit in Buildings Session 03/2024	33
5	Training on Energy Management and Energy Audit for Industrial Installation 02/2024	22
6	Training on Energy Management and Energy Audit for Industrial Installation 03/2024	27
7	Training on Energy Management and Energy Audit in Buildings Session 04/2024	21
8	Training on Energy Management and Energy Audit in Buildings Session 05/2024	37
9	Training on Energy Management and Energy Audit for Industrial Installation 04/2024	29
10	Training on Energy Management and Energy Audit for Industrial Installation 05/2024	21

Exhibit 17 List of EM and EA training sessions carried out in 2024

Energy Audit Conditional Grant for
Commercial and Industrial Sector (RMK-12)

From 2021 to 2024, the energy audit initiative has identified a potential energy savings of approximately RM27,780,733.13 equivalent to 82,615,980.96 kWh. This potential savings is anticipated to lead to a reduction of 53,550.05 metric tons of CO_2 equivalent (tCO_2eq) in carbon emissions.

Energy Saving Implementation (kWh)

82,615,980.96

Cost Saving (RM)

27,780,733.13

CO_2 Reduction (tCO_2eq)

53,550.05

Investment Cost (RM)

64,473,822.54

Exhibit 18
Achievable potential of energy saving based on energy audit findings.

The Voluntary Sustainable Energy Low Carbon Facilitation and Certification Programme

Sustainable Energy Low Carbon Facilitation Programme

The Sustainable Energy Low Carbon Facilitation Programme, that is managed by the Authority, encompasses a range of initiatives aimed at reducing carbon emissions and promoting the use of SE sources. Through these initiatives, the Authority seeks to foster an environment conducive to the adoption of SE solutions, ultimately contributing to a significant reduction in carbon emissions and advancing Malaysia's sustainability objectives.

Current Achievements

The Sustainable Energy Low Carbon Facilitation Programme includes the Building Energy Data Online Monitoring System (BEDOS), the Zero Energy Building Facilitation Programme, and the Sustainable Low Carbon Building Assessment. Currently, the Authority is collaborating with the Petaling Jaya City Council (Majlis Bandaraya Petaling Jaya, MBPJ) to implement energy management practices, adhere to the Malaysian Standard (MS) 1525, and promote low carbon buildings.

Site visit of the Shah Alam, Gardenia factory by the Deputy Minister of PETRA, together with representatives of PETRA, ST and the Authority to inspect the implementation of the Energy Audit under the EACG program.

All information regarding the EACG 2.0 programme can be downloaded at **www.seda.gov.my/eagrant**

Building Energy Data Online Monitoring System (BEDOS)

The Building Energy Data Online Monitoring System (BEDOS) is an online platform developed by the Authority to collect, analyse, and report energy consumption data for buildings. This system supports EE initiatives by monitoring energy usage across various building sectors, facilitating performance benchmarking, and raising public awareness. BEDOS offers data analytics, user-friendly interfaces, GreenPASS Certification, and secure data management, enabling building owners and managers to optimise energy use, reduce costs, comply with regulations, and minimise environmental impact.

Current Achievements

In 2024, a total of 3,674 buildings were registered in the BEDOS system, representing a diverse range of commercial properties, including shopping malls, hospitals, universities, local authorities, schools, and offices. Additionally, in conjunction with the Building Energy Index Labelling programme under the Energy Commission, BEDOS assists building owners in calculating and analysing building performance, resulting in a 1-5 star BEI rating system. For more information, please visit our website at https://bedos.seda.gov.my.

Sustainable Low Carbon Building Assessment

The Sustainable Energy Low Carbon Building Assessment, or GreenPASS Certification, offered by the Authority, is applicable to all energy-efficient (EE) and non-energy-efficient buildings, regardless of their performance levels. This inclusive approach allows building owners and facilities management teams to establish building-specific carbon benchmarks for continuous improvement. This initiative enhances the government's capacity to implement low carbon building practices widely, making carbon reduction measures more effective.

The objectives of the GreenPASS Carbon Building Assessment include:

- Supporting the development of low carbon cities.
- Providing national consistency and a common framework for definitions.
- Offering systematic assessments to encourage EE in building implementation.
- Creating a platform for carbon reduction in the building sector to support the target of reducing CO_2 intensity by 45% by 2030.

Carbon reduction serves as an indicator of building performance, which can be translated into environmental impacts through a diamond rating scheme. According to the GreenPASS Certification Diamond Rating scheme, the number of diamonds awarded corresponds to the level of achievement, with ratings ranging from one to six diamonds, starting from a 1% reduction in carbon emissions. This evaluation serves as an alternative pathway to achieving green building certification. GreenPASS certification applications can be submitted through the Building Energy Data Online Monitoring System (BEDOS).

Current Achievements

As of 2024, a total of 579 certificates have been approved under the Authority's Low Carbon Building Performance Assessment GreenPASS and Certification Programme, with ratings ranging from 1 to 5 diamonds. The total energy savings achieved amount to 772.38 GWh, which is equivalent to a reduction of 534,865.83 tons of carbon emissions.

Buildings Registered	3,674
Approved GreenPASS Certification	579
Total energy saving (GWh)	772.38
Total CO_2 emission reduction (tonne)	534,865.83

Exhibit 19 Total Energy Saving and Emission Reduction for 2024 via GreenPASS Programme

SEDA GreenPASS Certification

Zero Energy Building Facilitation Programme

The Zero Energy Building (ZEB) Facilitation Programme by the Authority is an initiative aimed at promoting the development and adoption of buildings that generate as much energy as they consume, thereby achieving net-zero energy consumption. This programme encourages the adoption of super low carbon practices by focusing on SE solutions, beginning with advanced EE measures to reduce overall energy demand. The remaining energy needs are offset through the use of on-site RE.

To support this initiative, the Ministry of Economy, Trade and Industry (METI) of Japan has engaged the Energy Conservation Center Japan (ECCJ) and the Japanese Business Alliance for Smart Energy Worldwide (JASE-W) to promote and facilitate ZEB development in ASEAN countries. Their support includes facilitation, capacity building, and technical training.

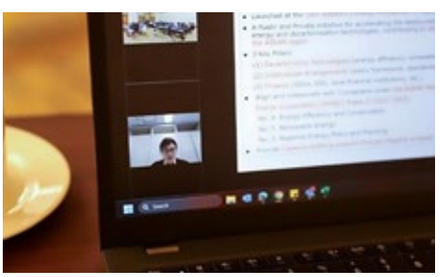
This programme stems from a Memorandum of Understanding (MoU) signed between the Authority and JASE-W in October 2018. The strong commitment and interest demonstrated by JASE-W have been instrumental in advancing the implementation of this programme.

Current Achievements

On March 7, 2024, the Authority, in collaboration with the JASE-W, hosted a half-day seminar focused on advancing ZEB practices tailored to the Malaysian context. The seminar took place at the Zenith Hotel in Putrajaya and received support from the ECCJ, METI of Japan, and PETRA.

The event comprised a full day of activities, split between a half-day seminar session and a half-day technical site visit to the University of Kuala Lumpur British Malaysian Institute (UniKL BMI), with each component occurring on separate days. The seminar attracted 168 participants from various locations, utilising both physical and online platforms.

Seminar Session



Technical Site Visit to UniKL BMI

Technical Cooperation and Facilitation for Government Entities

Low Carbon Building Programme With Petaling Jaya City Council (MBPJ)

The Three-Year Energy Management Programme, which includes the implementation of MS 1525 and the promotion of Low Carbon Buildings, is a collaborative initiative between the MBPJ and the Authority. Originally launched in June 2020 and concluding in May 2023, the programme has been extended for an additional three years, now running until May 2026. It comprises five key components, which are as follows:

Key Components of the Collaborative Energy Management Programme

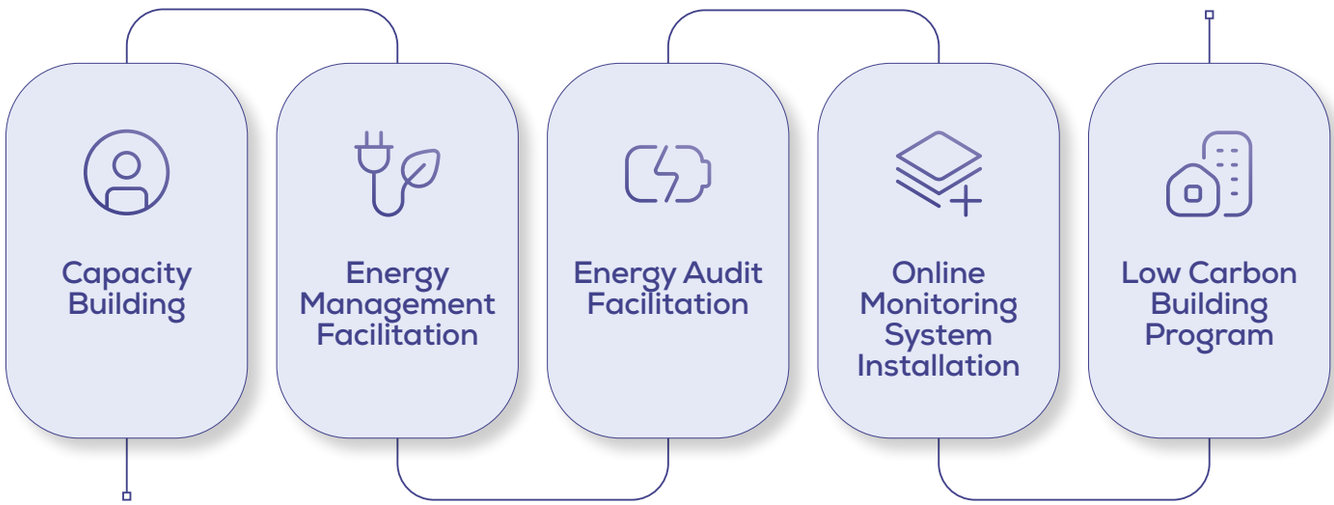


Exhibit 20 Key Components of the Collaborative Energy Management Programme

The primary objective of the Three-Year Energy Management Programme is to support the national agenda of reducing greenhouse gas (GHG) emissions intensity by 45% by 2030, while also contributing to the MBPJ Low Carbon City Action Plan. MBPJ has established specific targets for carbon emissions reduction by 2030, which include:

- Reducing 4 kilotons of CO_2 from municipal operations.
- Reducing 44 kilotons of CO_2 from the industrial and commercial sectors.
- Reducing 260 kilotons of CO_2 from new developments.
- Achieving a 30% target for RE generation.

In addition, MBPJ has developed the Petaling Jaya Smart, Sustainable, and Resilient 2030 (PJSSR 2030) strategic plan, which aims to ensure long-term sustainable city management. This plan focuses on the implementation of 10 thematic projects and serves as a roadmap for the management of Petaling Jaya, aligning with the Sustainable Development Goals (SDGs) and relevant policies at the national, state, and local levels. The collaborative programme is reported under the Low Carbon City thematic area to provide periodic updates on MBPJ's actions related to low carbon initiatives.

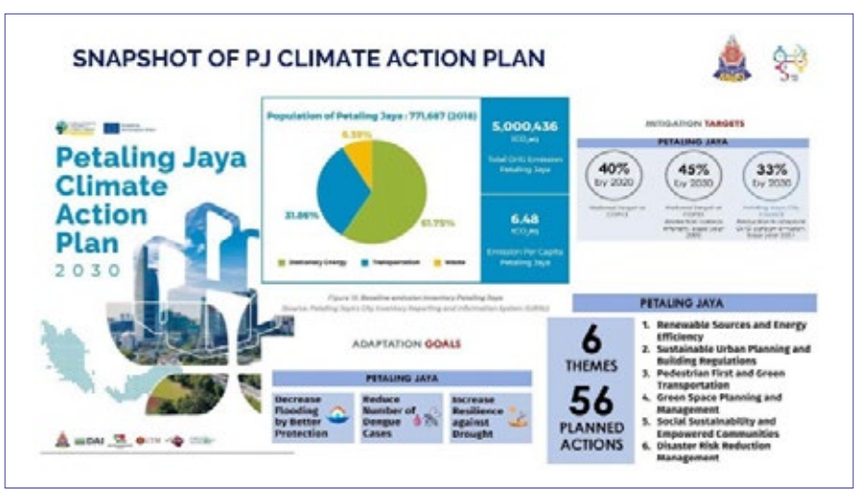


Exhibit 21 Key Highlights of the 2030 PJ Climate Action

Role of the Authority in the Programme:

- Act as a technical advisor to MBPJ in the implementation of the EM programme.
- Function as a trainer, facilitator, and secretariat for capacity building, offering relevant training modules.
- Serve as an advisor and committee member for both the Main Committee and Technical Committee.
- Support the development of Energy Managers and qualified personnel (such as Chargemen) among MBPJ staff.
- Participate in promotional activities related to EE and RE, including awareness talks.
- Provide consultancy services to MBPJ for Energy Audit activities, offering technical input throughout the process.
- Advise on the implementation of of ESM.
- Install an Online Energy Monitoring System to track energy consumption and verify energy savings following retrofit activities.
- Act as a technical advisor for the application and compliance with MS 1525 in new building projects under MBPJ's administration.

Programme	Description	Execution date	Outcomes
1	1.1 Energy Management & Energy Audit in Building (beginner)	28-29 May 2024	40 participants
	1.2 Energy Management & Energy Audit in Building (intermediate)	29-30 May 2024	40 participants
2	**ENERGY MANAGEMENT FACILITATION** 2.1 Committee member in Energy Management Technical Committee 2.2 Facilitate in e-blast for MBPJ awareness campaign	March-August 2024 5 June 2024 27 March 2024 1 August 2024	NA
3	**FACILITATE ON ESM IMPLEMENTATION** 3.1 Phase-by-phase implementation by MBPJ for 11 audited buildings 3.2 Major replacement of HVAC system at the Community Library building with potential saving up to 30% of building total energy 3.3 Installation of motion sensor for lighting system and replacement of LED lighting at several MBPJ buildings	5 June 2024	30% energy saving from total building energy for Petaling Jaya Community Library 448,452 kWh/year reduction from 2019 baseline
4	4.1 Installation of Online Monitoring System at another 2 MBPJ buildings	17 December 2024	4 OMS meters installed and monitored
5	5.1 Pilot project of MS 1525 with several Petaling Jaya developers	May 2024	Output checklist and building reduction from target baseline

Programme	Description	Execution date	Outcomes
5	5.2 Workshop on Petaling Jaya Energy Efficiency Low Carbon Building Action Plan and Guideline Use/Compliance of MS 1525 for new building application	17-19 September 2024 6-7 August 2024	Draft Petaling Jaya Energy Efficiency Low Carbon Building Action Plan
	5.3 Workshop on Petaling Jaya Energy Efficiency Low Carbon Building Action Plan and Guideline Use/Compliance of MS 1525 for new building application with MBPJ stakeholders	29-30 October 2024	Finalised Petaling Jaya Energy Efficiency Low Carbon Building Action Plan
	5.4 Testing & Commissioning of solar installation at the Astaka Sport Complex	22 February 2024	20% reduction of building electricity bills
	5.5 Site visit for potential solar installation at MBPJ building	4 April 2024	20% reduction of building electricity bills
	5.6 Energy and carbon reduction through BEDOS monitoring of MBPJ buildings – 44 building assets	2024	Cumulative energy reduction 6,118,971.90 kWh/year Cumulative carbon reduction 4,246.60 tCO_2

Exhibit 22 List of Programme Achievements for the year 2024

Enhancing Building Performance Through Energy & Carbon Reduction Monitoring via BEDOS

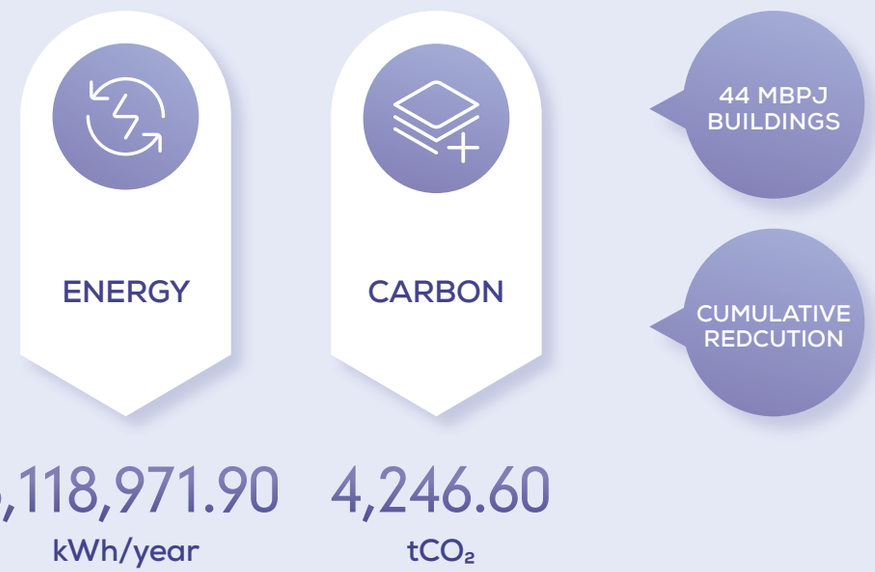


Exhibit 23 Energy and Carbon Reduction via BEDOS monitoring and building performance enhancement

Technical Cooperation and Facilitation for Government Entities

Workshop on Petaling Jaya Energy Efficiency Low Carbon Building Action Plan and Guideline Use/Compliance of MS 1525 for new building application with MBPJ stakeholders. Held 29 - 30 October 2024 in Petaling Jaya.

Attended by industry players, government agencies, relevant institutions, private organisations, MBPJ technical departments and representatives from the Technical Development Facilitation of the Authority.

The closing ceremony of the workshop was officiated by the Petaling Jaya Mayor, Tn. Hj. Mohamad Zahri Samingon.

SAVE 4.0 Programme

Sustainability Achieved via Energy Efficiency (SAVE) 4.0

The Sustainability Achieved Via Energy Efficiency (SAVE) 4.0 Programme is a continuation of the SAVE 1.0, 2.0, and 3.0 Programmes, which were launched in 2011, 2021, and 2022, respectively. The previous programmes have successfully achieved energy savings of 158.1 GWh, 55.17 GWh, and 110.7 GWh, respectively. The SAVE 4.0 Programme has already reached energy savings of 153.83 GWh, reflecting very positive outcomes.

Recognising that electrical appliances such as refrigerators and air conditioners account for a significant portion of energy consumption, the government, through PETRA, is continuing this initiative by targeting these two types of appliances for domestic consumers. A total of RM60 million has been allocated for 300,000 units of e-Rebates to facilitate the purchase of these appliances.

The SAVE 4.0 Programme is categorised as an EE initiative and is funded by the Electricity Supply Industry Trust Account (AAIBE) for a duration of 13 months, from 1 December 2023, to 31 December 2024. The total approved allocation for this programme is RM60 million. The objectives of the SAVE 4.0 Programme are in **Exhibit 24**.

In total, 299,991 units of e-Rebates under the SAVE 4.0 Programme have been successfully redeemed by users, achieving the annual energy savings target of 153.83 GWh. This initiative has resulted in cost savings of RM60.69 million and a reduction of 119,000 tonnes of CO_2 emissions.

Exhibit 24 SAVE 4.0 Programme Objectives

Exhibit 25 SAVE 4.0 Estimation Outcomes

The SAVE 4.0 Programme has successfully fulfilled the Ministry's aspirations and targets for energy savings outlined in the NEEAP. Additionally, the programme has stimulated competition among electrical appliance manufacturers, leading to an increased availability of energy-efficient appliance models with 4-star and 5-star ratings in the local market. It has also supported registered retailers in boosting their sales of electrical goods, particularly air conditioners and refrigerators.

Under the SAVE 4.0 Programme, each domestic user received an e-Rebate of RM400 (RM200 for an air conditioner and RM200 for a refrigerator). This programme was available to Malaysian citizens with a registered electricity account from utility companies such as Tenaga Nasional Berhad, Sabah Electricity Sdn. Bhd. (SESB), Sarawak Energy Berhad (SEB), and Nur Power Sdn. Bhd. Each electricity account was eligible to redeem one (1) air conditioner and one (1) refrigerator.

The objective of the SAVE 4.0 Programme was to empower consumers to make informed decisions when purchasing energy-efficient electrical appliances. This initiative aimed not only to lower users' monthly electricity bills but also to provide long-term benefits in energy cost savings. While energy-efficient appliances generally have a higher upfront cost compared to less efficient alternatives, the e-Rebate offered through this programme alleviated the financial burden of acquiring 4-star or 5-star rated appliances, as recognised by ST. This incentive encouraged consumers to opt for more efficient products, thereby supporting the nation's efforts to reduce energy consumption and carbon emissions.

Exhibit 26 illustrates the two (2) options for redeeming the SAVE 4.0 Programme e-Rebate at registered stores.

METHOD 1

PHYSICAL REGISTERED STORES

Users can redeem the e-Rebate at registered physical stores by bringing their electricity bill and identification card. Users can refer to the list of registered stores on the website www.saveenergy.gov.my.

METHOD 2

ONLINE REGISTERED STORES

Users can redeem the e-Rebate through e-Commerce platforms participating in the SAVE4.0 programme, such as Shopee Malaysia, Lazada Malaysia, Youbeli, Tiktok Shop, and PG Mall.

Exhibit 26 SAVE 4.0 Programme Mechanism

The e-Rebate is allocated according to the type of equipment as follows:

Air Conditioner

e-Rebate Amount
RM200/unit

Refrigerator

e-Rebate Amount
RM200/unit

Exhibit 27 e-Rebate Value by Type of Electrical Appliance per Unit

The SAVE 4.0 Programme, which was implemented over a 13-month period, garnered an overwhelmingly positive response from domestic users, as evidenced by the number of refrigerators and air conditioners purchased using the SAVE 4.0 e-Rebate. A detailed breakdown of the voucher units allocated for refrigerators and air conditioners by state is presented in **Exhibit 28**.

A total of 299,991 units of e-Rebates were redeemed by users, with the total allocation for these e-Rebates amounting to RM58,819,800. Exhibit 28 indicates that the highest number of e-Rebate redemptions under the SAVE 4.0 Programme was for the purchase of air conditioners, which also recorded the highest energy consumption compared to refrigerators. The distribution of e-Rebate vouchers for refrigerators and air conditioners by state highlights the demand for these two types of electrical appliances.

Energy Efficiency Campaign Promotion

The promotional programmes conducted were effective initiatives to promote the SAVE 4.0 Programme. These programmes provided the public with opportunities to engage directly and discuss the importance of EE, as well as the various initiatives implemented by the Authority. This approach facilitated the dissemination of information and increased public awareness of the benefits of using energy-efficient electrical appliances, while ensuring that individuals received accurate information about e-Rebate opportunities and the long-term advantages of energy savings.

The promotional campaign for the SAVE 4.0 Programme was conducted through the SAVE 4.0 Roadshow Series, which featured six (6) designated locations aimed at promoting the programme and enhancing public awareness of EE practices. These promotional locations were strategically chosen in states with the lowest e-Rebate redemption numbers, providing opportunities for residents who may not yet be aware of the benefits of this programme.

State	Total e-Rebate	
	Air conditioner	Refrigerator
Kedah	21330	21921
Johor	21028	19117
Selangor	21649	16904
Pulau Pinang	20580	15478
Perak	17329	14997
Melaka	9312	8159
Pahang	6418	7923
Sarawak	8341	8006
W.P. Kuala Lumpur	6872	6267
Negeri Sembilan	6057	6092
Terengganu	3159	8629
Sabah	6995	3871
Kelantan	2190	5085
Perlis	1925	2749
W.P. Putrajaya	519	441
W.P Labuan	364	284
Total	**154,068**	**145,923**

Exhibit 28 Distribution of Refrigerator and Air Conditioner e-Rebate Vouchers by State

No.	Promotional Programme	Date
1	Putrajaya Open Day 2024	1-4 February 2024
2	Central Zone MADANI Rakyat Programme	23-25 February 2024
3	World Water Day 2024	27-28 February 2024
4	Northern Zone MADANI Rakyat Programme	3-5 May 2024
5	Unity Week Celebration	23-26 May 2024
6	First SAVE 4.0 Tour at AEON Kota Bahru, Kelantan	21-23 June 2024
7	Eastern Zone MADANI Rakyat Programme (Second SAVE 4.0 Tour)	5 -7 July 2024
8	Family Relaxation Programme 50WP & DBKL Meeting @ Wangsa Maju	28 July 2024
9	Southern Zone MADANI Rakyat Programme (Third SAVE 4.0 Tour)	15-17 August 2024
10	International Sustainable Energy Summit (ISES)	20-21 August 2024
11	My Beloved Sarawak MADANI Rakyat Programme (Fourth SAVE 4.0 Tour)	27-29 September 2024
12	Sabah Zone MADANI Rakyat Programme (Fifth SAVE 4.0 Tour)	18-20 October 2024
13	MADANI 2-Year Programme at the Kuala Lumpur Convention Centre	22-24 November 2024
14	Sixth SAVE 4.0 Tour at AEON Seremban, Negeri Sembilan	23-24 November 2024

Exhibit 29 Promotional Campaigns involving the SAVE 4.0 Programme

No.	Media	Date	Title
1	Bernama Radio	2 July 2024	NEM 3.0 and SAVE 4.0 Programme Initiatives to Reduce the Burden on the Populace
2	Miri FM Radio	27 September 2024	Let's Save Together with the SAVE 4.0 Programme
3	Sabah FM Radio	18 October 2024	Let's Save Together with the SAVE 4.0 Programme

Exhibit 30 Electronic Media Promotions

The promotional strategy utilising print and electronic media has significantly influenced the number of e-Rebate redemptions under this programme. Additionally, interview sessions on major radio stations in the country have played a crucial role in enhancing public awareness of EE and the benefits of the SAVE 4.0 Programme, resulting in a positive response from consumers. Overall, the messaging and objectives of the SAVE 4.0 awareness campaign were effectively executed, as evidenced by the total number of e-Rebate redemptions, which were fully redeemed by December 2024.

OUTCOMES

The SAVE 4.0 Programme provided 300,000 units of e-Rebates, offering users greater options for purchasing energy-efficient electrical appliances. According to information from registered stores, there is a price difference of approximately RM200 to RM400 between 2-Star and 5-Star rated appliances. With the availability of the e-Rebate, users can offset the additional costs associated with more energy-efficient appliances, thereby supporting long-term energy savings and reducing their monthly electricity bills.

Moreover, the e-Rebate helps to bridge the price gap between 2-Star and 5-Star rated appliances. As a result, users can lower their monthly electricity expenses by opting for appliances with the same capacity but greater EE, leading to ongoing cost savings over time.

Consequently, reducing energy consumption contributes to a decrease in overall electricity demand, which in turn lowers carbon emissions. This is particularly significant as most power plants in Malaysia rely on fossil fuels, such as coal, as their primary energy source for electricity generation.

ACHIEVEMENT

The SAVE 4.0 Programme is a continuation of the EE initiative, with an allocation of RM58.55 million from the AAIBE. As shown in **Exhibit 31**, nearly the entire rebate allocation has been successfully claimed by users, with only a small fraction (0.003%) remaining unclaimed. The data indicates a high level of effectiveness for this programme in promoting the adoption of more energy-efficient electrical appliances.

E-REBATE CLAIMS OF THE SAVE 4.0 PROGRAMME

1 Total Claims **299,991 units**

2 Remainder **9 units**

Exhibit 31 Total e-Rebate Claims of the SAVE 4.0 Programme

The implementation of the SAVE 4.0 Programme has resulted in an annual energy saving of 153.83 GWh, enabling users to reduce their yearly energy costs by RM60.69 million. Beyond the financial and energy savings, this programme also contributes positively to the environment by decreasing carbon emissions by 119,000 tons of CO_2 each year. This underscores the government's ongoing commitment to promoting efficient energy use and supporting initiatives aimed at energy sustainability. The total energy savings are calculated based on the number of e-Rebates issued and the average energy savings associated with 5-Star rated electrical appliances compared to 2-Star rated appliances.

SAVE 1.0	SAVE 2.0	SAVE 3.0	SAVE 4.0
RM40.9 Mil	**RM27.49 Mil**	**RM35.78 Mil**	**RM58.55 Mil**
165k Rebate Units **72,000 RT** Chiller Rebate	**139,954** Rebate Units	**186,038** Rebate Units	**299,991** Rebate Units
158.1 GWj Annual Energy Savings	**55.17 GWj** Annual Energy Savings	**110.7 GWj** Annual Energy Savings	**153.83 GWj** Annual Energy Savings
RM64 Mil Annual Energy Cost Savings	**RM21.77 Mil** Annual Energy Cost Savings	**RM43.66 Mil** Annual Energy Cost Savings	**RM60.69 Mil** Annual Energy Cost Savings
167k Tonnes Annual CO_2 Emission Reduction	**38k Tonnes Annual CO_2** Emission Reduction	**76k Tonnes Annual CO_2** Emission Reduction	**119k Tonnes Annual CO_2** Emission Reduction
Source: Project Entry under OGE, PEMANDU	Source: MOF & AAIBE	Source: AAIBE	Source: AAIBE

Exhibit 32 Achievements of the SAVE 1.0 to SAVE 4.0 Programmes

Retrofit Programme Under PETRA

Introduction & Project Background

The Energy Efficiency Retrofit Project is an initiative by the Ministry of Energy and Natural Resources (KeTSA), now known as PETRA, designed to enhance EE in buildings under its purview. The implementation phase of this retrofit project involves executing energy-saving measures carried out by the appointed contractor.

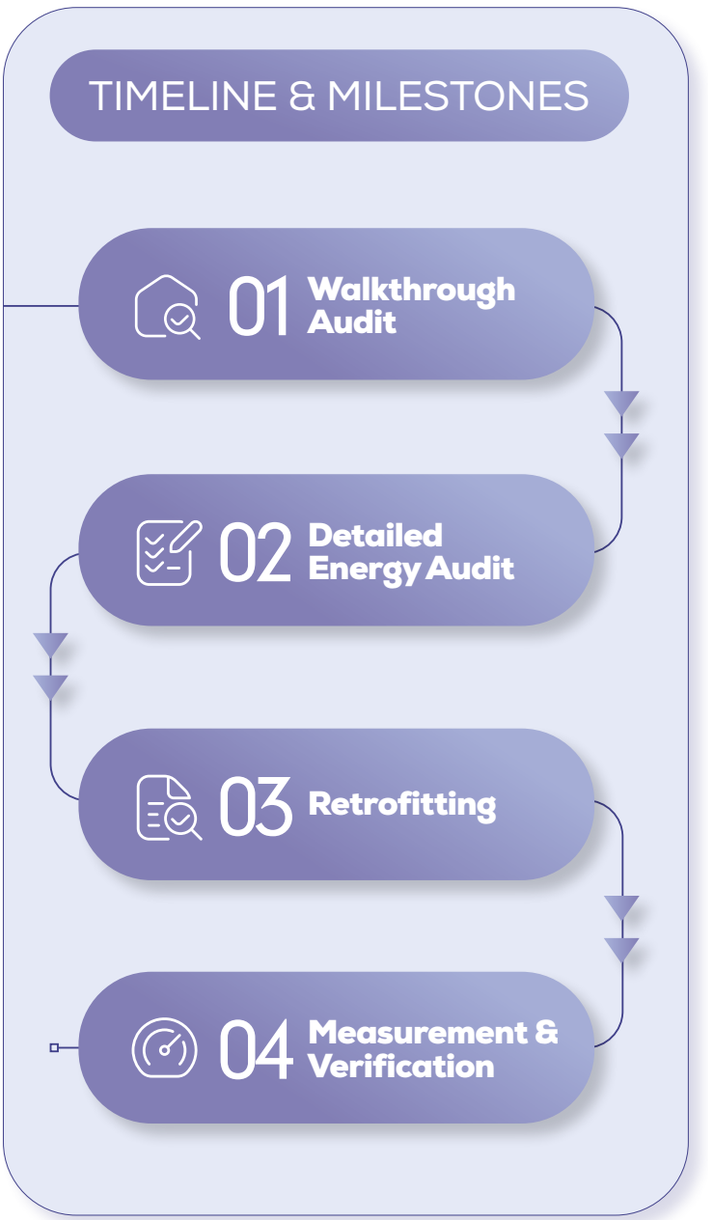
The scope of work for this retrofit project includes the design, supply, delivery, installation, testing, commissioning, and certification of retrofit works for buildings associated with the relevant Departments and Agencies. The buildings involved in this initiative are:

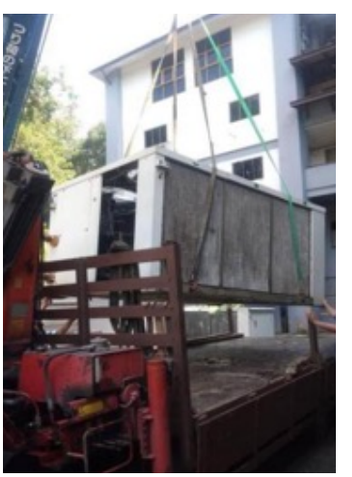
- Forest Research Institute Malaysia (FRIM)
- Forestry Department of Peninsular Malaysia (JPSM)
- Department of Wildlife and National Parks Peninsular Malaysia (PERHILITAN)

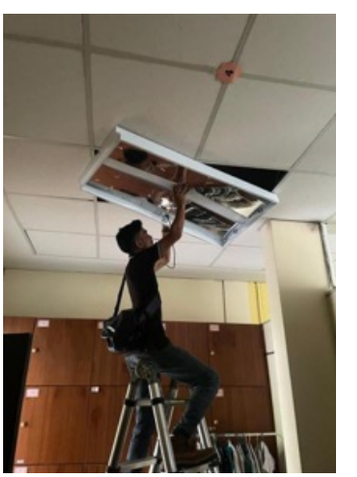
FRIM, JPSM, and PERHILITAN have been identified as having significant potential for optimal electricity bill savings and have shown readiness to participate in this retrofit project. The goal of implementing this Retrofit Project is to improve EE and reduce electricity consumption in these buildings, aligning with the Government's commitment to reduce energy use by up to 8% by the year 2025.

As a prerequisite for the retrofit works, a comprehensive energy audit was conducted, providing valuable insights into the existing energy consumption patterns of the buildings and identifying specific inefficiencies that could be addressed through technical upgrades. Key findings revealed excessive energy usage attributed to outdated building systems and operations. The results of the audit served as the foundation for implementing ESMs under the retrofit project. These measures included upgrading to LED lighting, replacing conventional air-conditioning units with more energy-efficient split systems, and installing high-efficiency chillers. The implementation of these measures aimed to reduce overall energy consumption and lower operational costs.

At the commencement of the Retrofitting Phase, the Authority appointed contractors to carry out the energy-saving measures identified in the energy audit report conducted in November 2022. The implementation was successfully completed by the end of 2024.







Retrofitting Phase

As part of the energy-saving measures identified in the comprehensive energy audit, several key upgrades were implemented across the targeted government buildings to enhance overall EE and reduce electricity consumption. The lighting system, which previously relied on conventional fluorescent and incandescent fixtures, was completely upgraded to energy-efficient LED lighting. This transition not only reduced electricity usage but also extended the lifespan of the lighting and decreased maintenance requirements.

Simultaneously, the outdated air conditioning systems, many of which were operating at suboptimal efficiency, were replaced with new high-efficiency split-type air conditioning units featuring inverter technology, classified as 4-5 Star Rated Appliances. These units can modulate compressor speed based on cooling demand, resulting in substantial energy savings, particularly during part-load operations.

To further optimise HVAC performance, VSDs were installed on key mechanical systems, including chilled water pumps and Water-Cooled Packaged Units (WCPU). The VSDs enable dynamic adjustment of motor speeds according to system load, thereby minimising unnecessary energy consumption during periods of reduced demand. Additionally, the existing central chiller system, which had reached the end of its operational life, was replaced with a new high-efficiency water-cooled chiller. This new chiller features an improved coefficient of performance (COP) and integrated control systems, allowing for more precise temperature regulation and reduced power usage.

Collectively, these retrofitting efforts are anticipated to yield significant energy savings, enhance indoor thermal comfort, and support long-term operational sustainability in alignment with the government's energy reduction targets. Below are the implementation works completed by the appointed contractor across all three government agency owned buildings: FRIM, JPSM, and PERHILITAN.

FRIM		PERHILITAN		JPSM	
MECHANICAL WORKS					
Description	**Status**	**Description**	**Status**	**Description**	**Status**
Block D3 Retrofit 26 units wall mounted ACSU, 4 units ceiling cassette, and 18 units ceiling exposed	48 units Installation Completed	Headquarters Retrofit 38 units of wall mounted ACSU, and 22 units of ceiling cassette ACSU	60 Units Installation Completed	Block Chengal Supply and install 2 lots. of VFD for condenser water pump and install temperature sensor at cooling tower inlet and outlet pipe.	2 Units Installation Completed
Block D4 Retrofit 48 units wall mounted ACSU, 1 unit ceiling cassette, and 43 units ceiling exposed	92 units Installation Completed	Supply and install 4 lots. Variable Frequency Drive (VFD) for Water-cooled Package Unit (WCPU)	4 Units VFD Installation Completed	Block Damar Minyak Supply and install 2 lots. of VFD for WCPU	2 Units Installation Completed
Block B6 Retrofit 6 units of air cooled chiller, and chilled water pump set complete with VFD.	6 units Chiller Installation Completed 12 units VSD Installation Completed				

Exhibit 33 Mechanical Work done on Retrofitting Implementation in FRIM, JPSM and PERHILITAN Buildings

FRIM		PERHILITAN		JPSM	
ELECTRICAL WORKS					
Block B6	44 units-FL 18W to LED 10W (2ft) 756 units-FL 36W to LED 20W (4ft)	Headquarters	738-PLC 18W to LED 20 (4ft) 226 units-PLC 18W to LED 10W (DL)	Block Ara	31 units-LED 30W to LED 20W (4ft)
Block H5	273-FL 36W to LED 20W (4ft) 46-FL 18W to LED 10W (2ft)	Forensic Lab	228-PLC 18W to LED 20 (4ft)	Block Balau	462 units-LED 30W to LED 20W (4ft)
Block D3 & D4	476-FL 36W to LED 20W (4ft) 85-FL 18W to 10W (2ft)			Block Damar Minyak	120 units-FL 36W to LED 20W (4ft) 68 units-PLC 18W to LED 10W (DL)

Exhibit 34 Electrical Work done on Retrofitting Implementation in FRIM, JPSM and PERHILITAN Buildings

Way Forward

Following the successful completion of the retrofitting works, the next vital step is to ensure the long-term effectiveness and sustainability of the implemented ESMs. This involves establishing a Monitoring and Verification (M&V) framework to assess energy savings in relation to the baseline consumption recorded during the initial energy audit. Regular performance reviews and energy data analysis will be conducted to confirm actual savings and identify any discrepancies from anticipated results. To maintain the integrity of the data and analysis, annual data collection will provide a comprehensive overview of energy consumption patterns, taking into account variations such as occupancy changes and operational schedules. This approach will facilitate a more precise evaluation of long-term energy savings and the overall effectiveness of the ESMs.

Furthermore, it is crucial to implement a structured operation and maintenance (O&M) plan to sustain the performance of newly installed systems, including LED lighting, high-efficiency chillers, and HVAC equipment equipped with Variable Speed Drives (VSDs). Training and capacity-building initiatives for facility management teams will be essential to ensure the proper management and optimisation of these energy systems.

Ultimately, the goal is to evolve from a one-time retrofit project into a continuous EM culture, where efficiency, innovation, and sustainability are integral to the operations of government buildings.

HUMAN CAPITAL DEVELOPMENT IN SUSTAINABLE ENERGY

Scan this QR Code for Further information of **Performance Review on Human Capital Development In Sustainable Energy**

PERFORMANCE REVIEW

Human Capital Development in Sustainable Energy

As a statutory body leading the SE agenda in the country, it is the Authority's responsibility to provide training and programmes focused on the development of human resources and capacity building within the SE sector (S15(i) SEDA Act 2011).

Since its inception, the Authority has developed training initiatives that encompass both the RE and EE sectors.

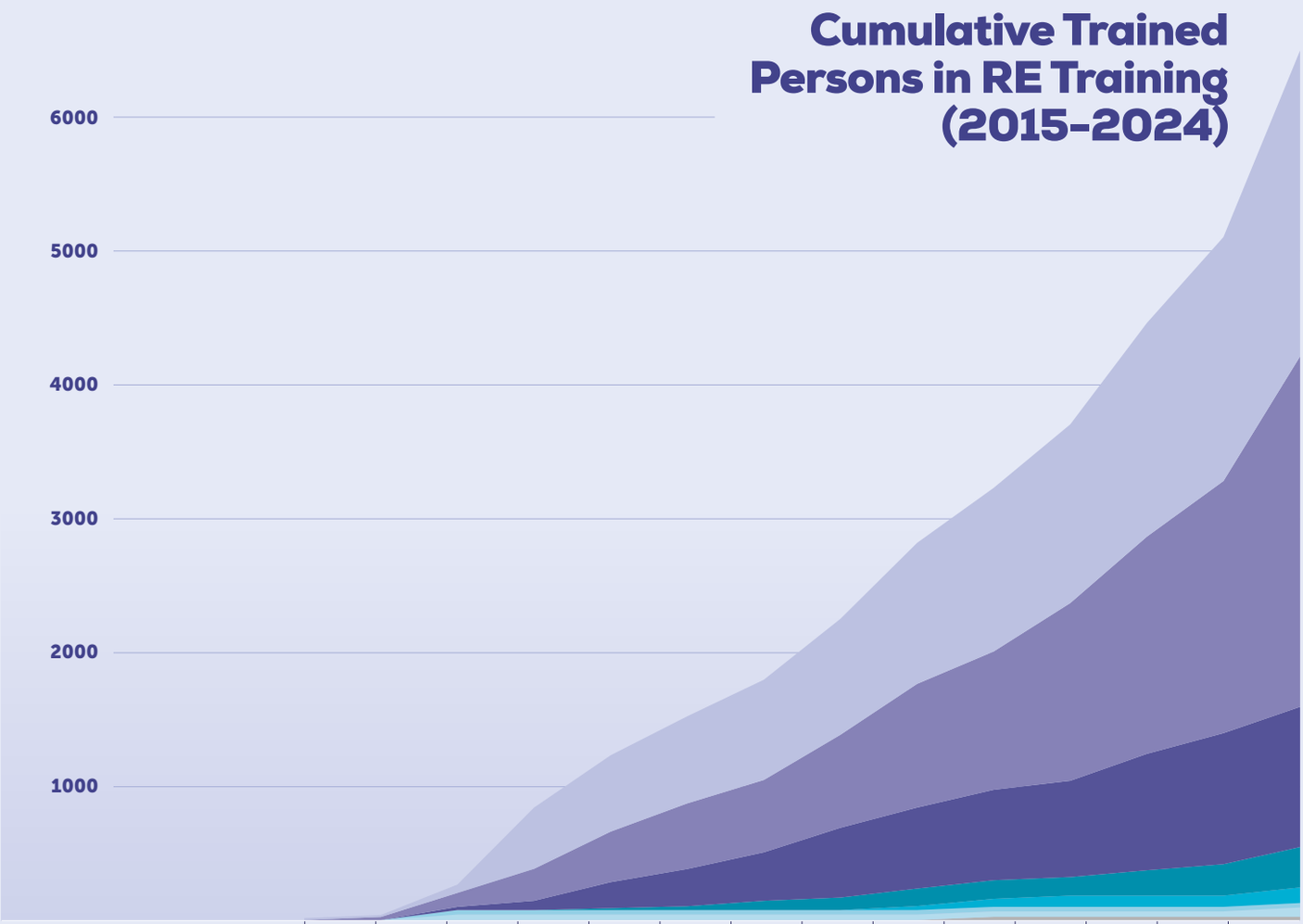
Renewable Energy Training

The Grid-Connected PV Systems Design Course and the Grid-Connected PV Systems for Wireman and Chargeman courses have the highest number of trained individuals, with 1,907 and 2,185 participants, respectively.

Since 2012, the Authority has established training courses for qualified personnel in the Solar PV industry, including the Grid-Connected PV Systems Design Course, Grid-Connected PV Systems for Wireman and Chargeman, Grid-Connected PV Systems Installation and Maintenance, and the Off-Grid PV Systems Design Course. Additionally, non-solar training programmes include Operation and Maintenance of Biogas Power Plants and introductory training in Biomass and Small Hydro.

As of the end of 2024, the Authority has successfully trained 5,315 participants in the RE sector. The Grid-Connected PV Systems Design Course and the Grid-Connected PV Systems for Wireman and Chargeman courses have the highest number of trained individuals, with 1,907 and 2,185 participants, respectively. This high participation is due to the requirement for companies to have qualified personnel who possess certification to become one of the Authority's Registered PV Service Providers. The cumulative number of participants trained in the Grid-Connected PV Installation and Maintenance course is 874.

Training institutes typically seek funding from the Human Resource Development Fund (HRDF), Lembaga Zakat, or the Construction Industry Development Board Malaysia (CIDB) to support participants. Additionally, 252 individuals have been trained in the Off-Grid PV Systems Design Course, while 97 participants have completed training in the Operation and Maintenance of Biogas Power Plants.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Introductory Training on GCPV System	0	0	0	0	0	0	0	0	20	20	20	20	20	20
Small Hydro Introductory Training	0	0	34	34	34	34	34	34	34	34	34	34	34	58
Biomass Introductory Training	0	28	28	28	28	28	28	28	28	28	28	28	28	28
Operation and Maintenance of Biogas Power Plant	0	0	0	0	0	0	0	25	50	70	70	70	97	97
OGPV Systems Design Course	0	0	0	0	12	24	58	78	109	116	116	158	196	252
GCPV Installation & Maintenance	0	0	20	58	162	232	302	435	505	564	600	726	817	874
GCPV Wireman & Chargeman	0	19	87	199	315	409	451	580	771	862	1108	1354	1572	2185
GCPV Systems Design Course	12	12	52	382	476	543	625	723	879	1020	1114	1332	1521	1907

Exhibit 35 List of cumulative trained persons in RE courses organised by the Authority

Grid-Connected Photovoltaic Systems Design Course

A key requirement for NEM applications is that the Solar PV system design must be endorsed by a Qualified Person—specifically, an individual certified in Grid-Connected Photovoltaic (GCPV) System Design. Engineers and professionals interested in obtaining this certification can do so by participating in training courses offered by the Authority's approved training partners.

In 2024, training was provided by three partners: Universiti Teknologi MARA (UiTM) and the Selangor Human Resource Development Centre (SHRDC), both located in Shah Alam, Selangor, as well as the Pahang Skills Development Centre (Pahang Skills) in Kuantan, Pahang. The eight-day programme, which included both theoretical and practical components, attracted a total of 386 participants. Of these, 154 candidates successfully completed the competency assessments and received their certification.

Grid-Connected Photovoltaic Systems for Wireman & Chargeman Course

This five-day training programme equips Wiremen and Chargemen with essential knowledge for Solar PV installation, focusing particularly on the direct current (DC) side and associated components. The official training partners for this programme include Universiti Kuala Lumpur – British Malaysian Institute (UniKL BMI), Integrated Learning Solution (ILSAS), Universiti Teknikal Malaysia Melaka (UTeM), Akademi Binaan Malaysia (ABM) Northern Region, and Pahang Skills Development Centre (Pahang Skills). In 2024, a total of 613 candidates participated in the training sessions, with 566 successfully passing the final assessment. The course comprises both theoretical instruction and practical hands-on training, culminating in a competency examination.

Grid-Connected Photovoltaic Systems Installation and Maintenance

This four-month training programme is divided into two phases: the first two months consist of classroom-based theoretical instruction, followed by two months of industrial training. The programme was conducted in partnership with several training organisations, including the Selangor Human Resource Development Centre (SHRDC), Akademi Binaan Malaysia (ABM) Northern Region, Terengganu Skills Development Centre (TESDEC), and Kedah Industrial Skills and Management Development Centre (KISMEC).

Grid-Connected Photovoltaic Systems Design Course

Grid-Connected Photovoltaic Systems for Wireman & Chargeman Course

Grid-Connected Photovoltaic Systems Installation and Maintenance

The training emphasised the installation and maintenance techniques for Solar PV systems, along with the occupational health and safety guidelines and best practices that workers must adhere to. In 2024, 56 out of 57 participants successfully passed the examinations and were awarded the Qualified Person Certificate.

Off-Grid Photovoltaic Systems Design Course

This ten-day course includes both theoretical and practical sessions focused on the design and installation of Off-Grid Photovoltaic (OGPV) systems, specifically tailored for rural areas with limited access to the national grid. The training was conducted at the Selangor Human Resources Development Centre (SHRDC) and Pusat Latihan Proaktif (PLP) in Sarawak, which served as the official training institutions. The majority of participants were from Sarawak, where numerous rural electrification projects, particularly solar hybrid systems, are being implemented. In 2024, 36 out of 59 participants successfully passed the examinations and were awarded the Qualified Person Certificate.

Operation and Maintenance of Biogas Power Plants

In collaboration with Universiti Tenaga Nasional (UNITEN), this module has been developed to address the Operations and Maintenance (O&M) of Biogas Power Plants. Industry stakeholders have contributed to the curriculum, which is recognised at levels 2 and 3 of the National Occupational Skills Standard (NOSS) within the scope of Anaerobic Digester Biogas Plants. This course provides a structured approach to support biogas Feed-in Tariff (FiT) projects, highlighting the need for professional training to enhance the competency of personnel responsible for operating and maintaining these biogas power plants. This ensures that the plants can perform optimally throughout the entire Renewable Energy Power Purchase Agreement (REPPA) tenure.

Train The Trainer

In 2024, the Authority, in collaboration with the Pahang Skills Development Centre (Pahang Skills) and the Selangor Human Resource Development Centre (SHRDC), successfully conducted the Train-The-Trainer (TTT) Course focused on Grid-Connected Photovoltaic (PV) System Installation and Maintenance, as well as Grid-Connected Solar Photovoltaic (GCPV) System Design. The objective of the course was to prepare prospective instructors for certification to teach the Installation and Maintenance of Grid-Connected PV Systems and the Design of Grid-Connected Solar PV Systems. Participants were required to successfully complete both theoretical and practical assessments, including a mock teaching session. The course was delivered by expert trainers appointed by the Authority. A total of 23 participants were selected to attend the course based on their qualifications and relevant experience in the GCPV sector.

Off-Grid Photovoltaic Systems Design Course

Operation and Maintenance of Biogas Power Plants

Train The Trainer

Briefing and Guidance Program for Registered Electrical Energy Manager (REEM)

Photo of Opening Ceremony for Train the Trainer in Energy Management in Campus

Mini HydroElectric

Awareness Trainings on Renewable Energy and Energy Efficiency

The Authority also organised awareness training sessions focused on RE, EE and SE technologies, including solar PV, biomass, and biogas.

Briefing and Guidance Programme for Registered Electrical Energy Manager (REEM)

On 11 April 2024, the Authority conducted a coaching session for its staff in the multipurpose room. The objective of this training was to outline the appropriate pathway to obtain REEM certification from Suruhanjaya Tenaga. Participants were introduced to the necessary documentation, requirements for energy saving reports, and the Energy Commissions Online System (ECOS).

Training on Thermal Energy System

This training aimed to familiarise participants with the fundamental principles of thermal energy. The objective was to enhance their understanding of mass and energy balance in processes, thereby improving EE. Participants learned to conduct basic economic analyses by identifying potential energy savings. The training took place on 16 and 17 November 2024.

Training on Thermal Energy System

Energy Management (EM) and Efficiency Training

Photo of Trainee Conducting Room Data Survey

Photo of Trainee Setting Up Data Logger to Monitor and Record Air Handling Unit (AHU) Consumption

Energy Management (EM) and Efficiency Training

One of the key functions of the Authority is to promote, stimulate, facilitate, and develop SE, which includes EE. As of the end of 2023, the Authority has conducted several training sessions focused on EE. These programmes are part of the efforts to support the implementation of EE and low carbon building initiatives. Additionally, the training sessions aim to enhance knowledge and address the human capital needs in the field of SE in Malaysia.

The Authority currently offers the following training modules:

- Application of Malaysian Standard: Code of Practice on Energy Efficiency and Use of Renewable Energy for Non-Residential Buildings (MS 1525)
- Energy Efficiency in Air-Conditioning and Mechanical Ventilation (ACMV) Management
- Energy Audit in Buildings
- Energy Management in Buildings

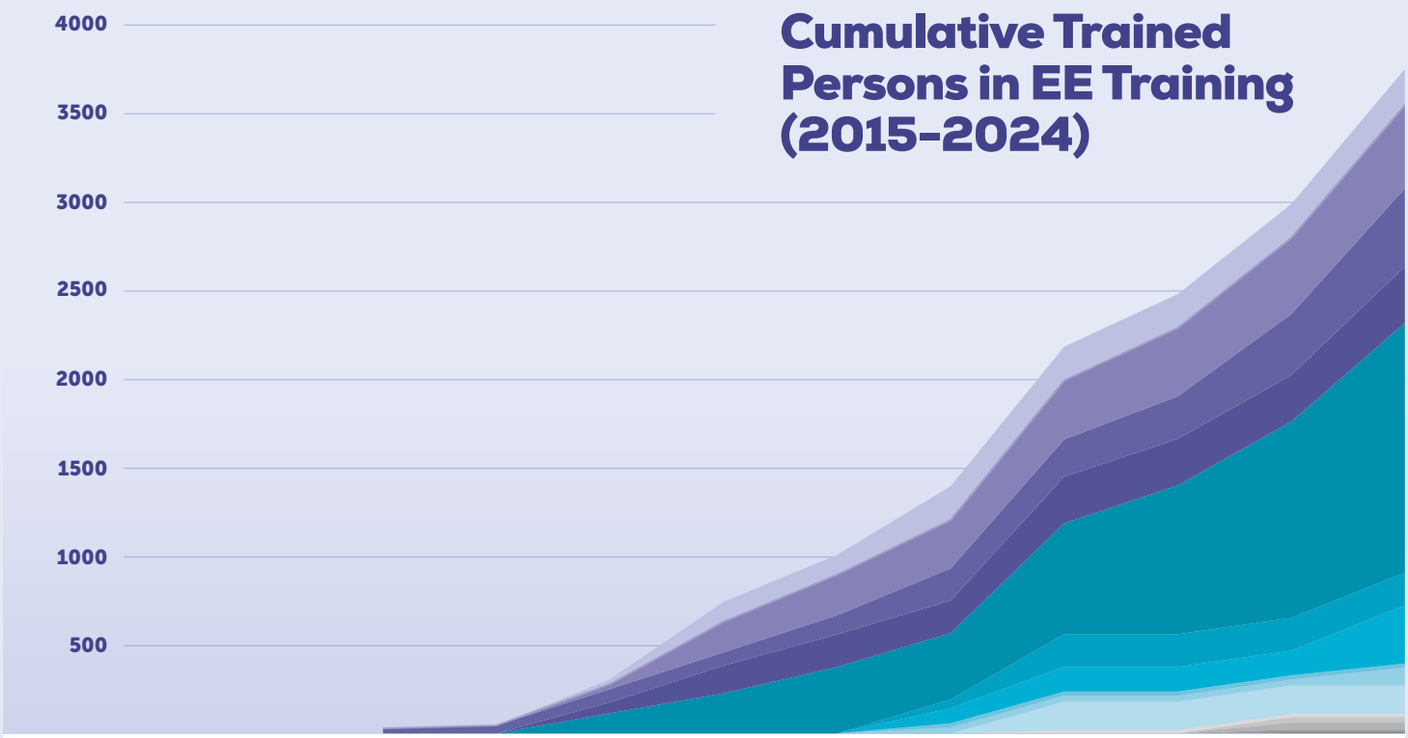
The target audience for these trainings primarily includes government officials, particularly those involved in the management or supervision of technical and building facilities, as well as local authority officers engaged in EM and EE, including those involved in new development planning and the renovation of existing buildings. The trainings are also open to private sector members seeking to enhance their capabilities and improve the knowledge of their staff.

Implementing this training programme is crucial for initiating training sessions related to EE and EM offered by the Government. The trainings conducted by the Authority focus on developing capacity and knowledge in EM for buildings, understanding the principles and applications of EE criteria outlined in Malaysian Standard MS1525, and improving procedures for building energy audits and EM systems for air conditioning and mechanical ventilation.

In recent years, energy conservation has gained significant attention in many countries, including Malaysia. Improved energy conservation and management practices are beginning to take root in the industry. This trend is reflected in the increased number of participants in 2024, with demand for EM and EE training having doubled over the year.

The Authority is now recognised as a reputable training provider in EM and EE, bolstered by the legitimacy granted by the Energy Commission. For example, all EM and EE training sessions conducted by the Authority qualify for Continuous Development Programme (CDP) points for Registered Electrical Energy Managers (REEM) with the Energy Commission.

Additionally, the Authority actively collaborates with stakeholders to offer customised in-house external training tailored to meet their specific needs and interests. The Authority has also partnered with the professional body ASHRAE Malaysia Chapter (MASHRAE) to provide training on Air-Conditioning and Mechanical Ventilation (ACMV). MASHRAE is now recognised as one of the training providers registered with the Authority.



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Thermal Energy for Non-Process Engineer	0	0	0	0	0	0	0	0	6	6
Briefing and Guidance Programme to become a Registered Electrical Energy Manager (REEM)	0	0	0	0	0	0	0	0	13	13
Train the Trainer / Professional Certificate in Energy Management in Campus	0	0	0	0	0	0	0	0	35	35
Energy Efficiency and Solar Thermal Training	0	0	0	0	0	0	0	0	28	28
RMK11-EMIS	0	0	0	0	0	0	17	17	17	17
Save 2.0	0	0	0	0	0	0	144	144	144	144
Foundational Workshop and Energy Management Facilitation at the Petaling Jaya Municipal Council Building with the Authority	0	0	0	0	0	30	30	30	30	90
Online Training: Sustainable Energy Low Carbon Buildings for Low Carbon Cities	0	0	0	0	0	21	21	21	21	21
Zero Energy Building Guide	0	0	0	0	0	76	125	125	125	294
GreenPASS & BEDOS	0	0	0	0	0	45	166	166	166	166
Energy Management & Energy Audit in Building (Program Geran Audit Tenaga Bersyarat – RMK-11 & RMK-12)	0	102	203	336	336	336	561	753	994	1265
Energy Audit in Building	0	0	55	140	165	165	236	236	236	285
Energy Efficiency Management for Air-Conditioning and Mechanical Ventilation (ACMV) System	25	40	67	67	97	162	189	215	309	396
Foundational Workshop and Energy Management Facilitation at the Petaling Jaya Municipal Council Building with the Authority	0	0	25	155	205	245	298	346	385	421
Energy Management and Energy Audit for Industrial Installation	0	0	0	0	0	0	0	0	0	0
Energy Management in Building	0	0	25	101	101	172	172	172	172	184

Exhibit 36 List of cumulative trained persons in Energy Efficiency courses organised by the Authority

WE LEAD BY EXAMPLE

Scan this QR Code for Further information of **Performance Review on We Lead by Example**

PERFORMANCE REVIEW

We Lead by Example

The Authority's Energy Management Practices

The Authority Lead by Example in EE & RE

As one of the agencies responsible for providing technical facilitation and promoting SE in Malaysia, the Authority has initiated EM practices at its headquarters in Putrajaya. This initiative began in 2015, leveraging the in-house expertise of the Authority.

The various EM initiatives implemented by the Authority have enabled it to achieve a Building Energy Index (BEI) ranging from 52 to 82 kWh/m²/year, significantly lower than the typical office building in Malaysia, which has a BEI of 220 to 300 kWh/m²/year, with an electricity bill of approximately RM2,000 per month. This achievement translates to annual savings of nearly 47,000 kWh (equivalent to at least RM24,000) and a reduction of 32 tonnes of carbon emissions per year. A summary of the BEI achievements by year is presented in **Exhibit 37.**

The various energy management initiatives implemented by the Authority have enabled it to achieve a Building Energy Index (BEI) ranging from 52 to 82 kWh/m²/year, significantly lower than the typical office building in Malaysia, which has a BEI of 220 to 300 kWh/m²/year, with an electricity bill of approximately RM2,000 per month.

The Authority Headquarters' Building Energy Index (BEI)

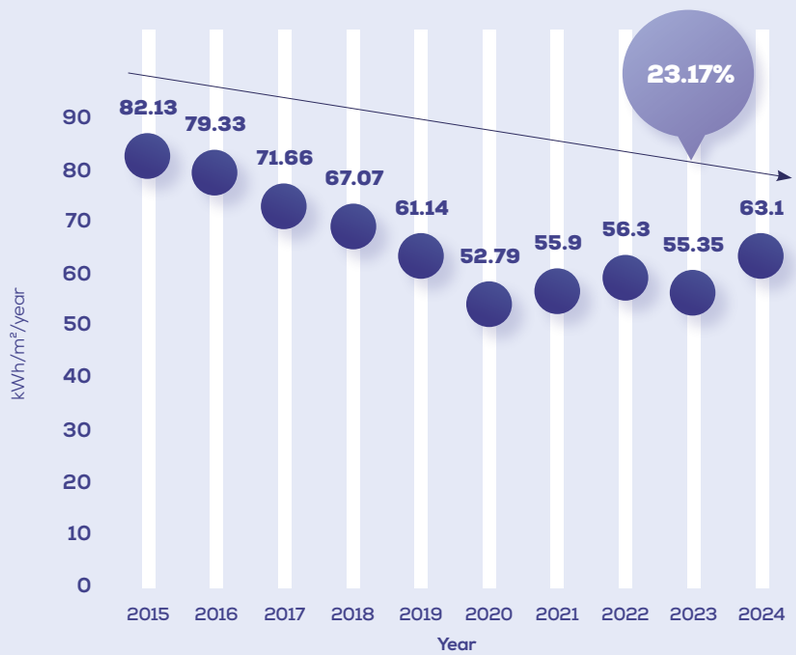
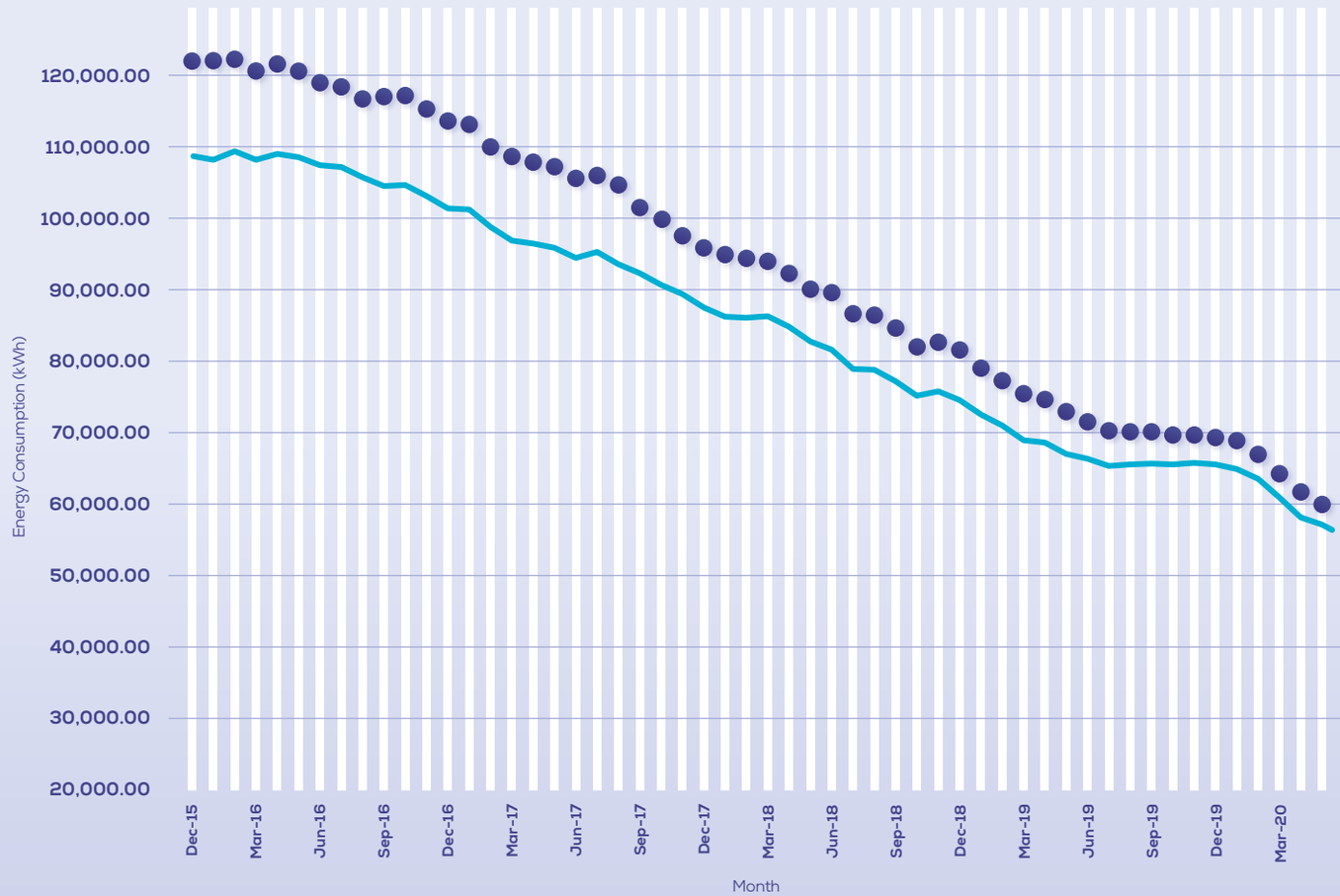


Exhibit 37 The summary of BEI achievement for the Authority's HQ

Annualised Energy Consumption and Energy Purchase (2015–2024)



EM measures should be regarded not as an expense, but as an investment that yields utility savings over the service life of the building. By adopting this perspective, the Authority has achieved substantial savings in electricity bills throughout the year compared to conventional buildings in Malaysia. Moreover, these savings are expected to grow over time, especially as energy prices in Malaysia may increase. The annual trend of decreasing electricity bills is presented in **Exhibit 38.**

Initiatives Undertaken by the Authority

No-Cost Measures:

- The Authority conducts quarterly Energy Management (EM) committee meetings as part of the Safety, Occupational Health and Energy Management Committee (JKPPT) to ensure the effective implementation of the Energy Policy.

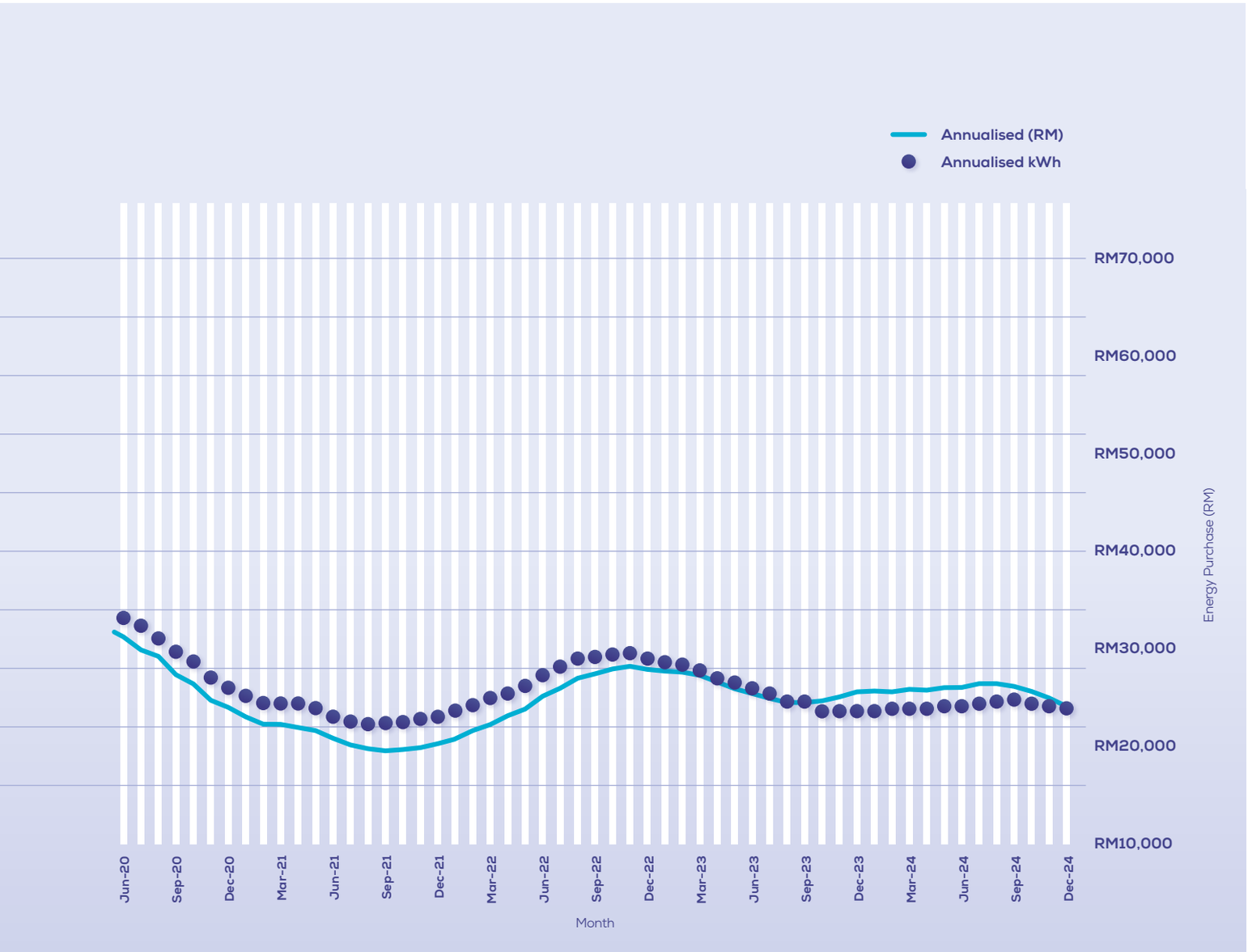


Exhibit 38 Historical Electricity bill for the Authority HQ

- A continuous energy management awareness programme for the Authority's staff includes in-house talks on EM, regular dissemination of information on energy-saving practices in the office, and simple initiatives such as EE savings tips labels.
- Mapping of lighting switches across all office areas within the Authority.
- Scheduling in-house energy audits conducted by staff.
- Displaying EM awareness signs and labels for office appliances and promoting energy-conscious behavior.
- Setting air-conditioning temperature to 24 degrees Celsius.
- Implementing EM practices, such as turning off lights and office equipment during lunch hours.

<u>Low-Cost Measures:</u>

- Gradual delamping, replacement of lights with LED fixtures, and installation of pull cord lighting.
- Installation of a scheduled lighting system in general pathways within the office.
- Regular maintenance of the solar PV system and monitoring of energy generation through a zeroised meter.

Solar PV System at the Authority – 16 kWp

Since its establishment in 2011, the Authority has approved over 10,000 RE installations in Malaysia. To lead by example, the Authority installed a solar PV system at its headquarters in Putrajaya. In 2019, a 16 kWp solar PV system was installed on the rooftop of Galeria PjH. This system is linked to the PV Monitoring System (PVMS) managed by the Authority and serves as an on-site training facility, providing online data for analysis and showcasing PV applications for office use to visitors and training participants.

The PV project commenced on October 1, 2019, and was successfully commissioned on December 31, 2019. The total installed capacity is 16 kWp, with the energy generated connected to the Authority's Main Distribution Board. The solar PV system operates on a SELCO basis, as the building's bulk meter does not support NEM configuration. Future efforts will aim to address this limitation, allowing buildings with bulk meters to participate in the NEM scheme.

It is estimated that the 16 kWp solar PV system could generate approximately 19,200 kWh per year, resulting in an avoidance of about 13,324.8 kg of CO_2 emissions annually. Below are the technical and design specifications for the Authority's 16 kWp solar PV system:

No.	Installation	Description
1	**Solar Panel**	400 Wp x 40 units of Mono-crystalline Class II PERC Half-Cell Module Each module has 72 cells Nominal efficiency is 19.5% 4 strings configuration with 10 solar panels per string. Manufacturer : JA Solar.
2	**Inverter**	1 unit of 15 kVA Multi -MPPT String Inverter from Sungrow Efficiency at nominal power is 98.6%
3	**Weather Station**	1 unit of Rainwise Pvmet200 weather station Can capture windspeed, irradiation and module temperature data
4	**Zero Export Energy**	1 unit of Weidmuller zero energy meter
5	**Solar PV Data Logger**	1 unit of Solar-Log 1200 from Solar Log

Exhibit 39 Technical and Design Specification of the Authority's 16 kWp Solar PV System

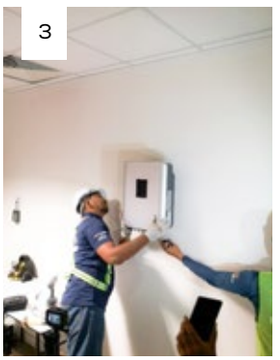
Lamp Zoning Layout Plan

The aerial view of the Authority's 16 kWp Solar PV System Installation

No 1 | 2 | 3 | 4
Project installation by appointed contractor

1

2



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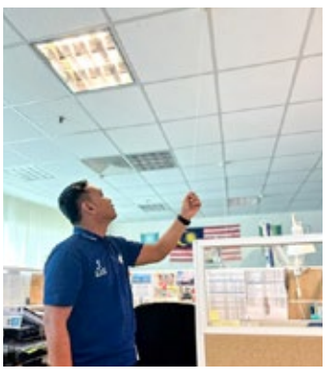


Energy management Initiatives: Lamp Zoning by area

Energy management Initiatives: Use of Table Lamp

Briefing by Project team to the staff of the Authority

Energy management Initiatives: Energy Policy

Energy management Initiatives: Awareness Poster

POWERING THROUGH PARTNERSHIP

Scan this QR Code for Further information of **Powering Through Partnership**

POWERING THROUGH PARTNERSHIP

International Liaison

Senior Officials Meeting on Energy (SOME)

The 42nd Senior Officials Meeting on Energy (SOME) and its associated gatherings took place from 24 to 28 June 2024 in Vientiane, Lao PDR. Chaired by H.E. Dr. Akhomdeth Vongsay, the event was hosted by the ASEAN Secretariat and attended by delegations from all ASEAN member states. Malaysia's delegation was led by Puan Mareena binti Mahpudz, Under Secretary of the Electricity Supply Division. The Authority was represented by:

- Ms. Afroza Banu binti Abd Halim, Head of the Special Unit
- Ts. Mohd Adzha bin Husin, Deputy Director of the Strategic Planning Division

The Authority's representatives for Special SOME Meeting

The meeting had several key objectives, serving as a platform for ASEAN countries to evaluate ongoing energy initiatives, implement annual deliverables, and foster bilateral and multilateral collaborations. Discussions highlighted the importance of regional energy integration through projects such as the ASEAN Power Grid (APG) and the Trans-ASEAN Gas Pipeline (TAGP), as well as cross-border electricity trade via the Laos-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) Phase 2.

Follow-up actions from the meeting include preparations for Malaysia's Vice Chair role at the 42nd ASEAN Ministers on Energy Meeting (AMEM) in September 2024, finalising key agreements such as the APG Successor Agreement and the TAGP protocol, and confirming targets for the ASEAN Plan of Action for Energy Cooperation (APAEC) 2026–2035. Malaysia also conducted a courtesy visit to Thailand's Ministry of Energy and proposed new engagement platforms with Dialogue Partners and International Organisations to enhance collaboration.

In conclusion, the 42nd SOME successfully reinforced ASEAN's shared energy objectives, emphasising cooperation, integration, and sustainability. Malaysia's proactive participation and forthcoming chairmanship in 2025 signal a strong leadership role in advancing the region's energy agenda. The outcomes of the meeting reflect a structured and strategic approach to securing ASEAN's long-term energy future.

The 42nd ASEAN Ministers on Energy Meeting (AMEM)

The 42nd ASEAN Ministers on Energy Meeting (AMEM) was chaired by H.E. Phosay Sayasone from Lao PDR, with Malaysia's Deputy Prime Minister, YAB Dato' Sri Haji Fadillah bin Haji Yusof, serving as Vice Chair. The Authority was represented by:

- Mr. Saiful Hakim bin Abdul Rahman, Director of the Strategic Planning Division
- Ms. Afroza Banu binti Abd Halim, Head of the Special Unit

The meeting brought together ASEAN energy ministers, representatives from Timor-Leste, and deputy heads from international agencies, including the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA). The theme of the meeting, "Enhancing Connectivity and Resilience," underscored the significance of regional collaboration through the ASEAN Plan of Action for Energy Cooperation (APAEC) in achieving energy security, accessibility, affordability, and sustainability.

The meeting acknowledged that the share of RE in ASEAN's total primary energy supply (TPES) reached 15.6% based on 2022 data, reflecting a 0.2% increase from 2021, with notable contributions from wind and solar energy. Additionally, the ASEAN region has made substantial progress towards its Energy Intensity (EI) reduction target, achieving a 24.5% reduction in energy intensity from 2005 levels, according to 2022 data.

The meeting concluded with the celebration of the ASEAN Energy Awards 2024, which recognised excellence in EE, RE and EM. The ASEAN Energy Business Forum (AEBF) 2024 was successfully held alongside the meeting, promoting business dialogue and collaboration. Finally, the ministers agreed to convene the 43rd AMEM in 2025 in Malaysia and expressed their gratitude to Lao PDR for its exemplary hosting of the 42nd AMEM.

Malaysia's Achievements at the ASEAN Energy Awards 2024

At the ASEAN Energy Awards 2024, Malaysia proudly received multiple accolades across various categories, underscoring the nation's robust commitment to EE, green building innovation, and SE management. These achievements not only demonstrate Malaysia's leadership in promoting sustainable practices within the ASEAN region but also its dedication to advancing the energy transition and climate action objectives. Below is the list of winners from Malaysia:

ASEAN Best Practices for Energy Efficient Buildings (EEB)

Award
Winner (New and Existing Building)

Project/Building/Institution
UOB Plaza 1 Kuala Lumpur

Organisation
UOB Properties (KL) Berhad

ASEAN Best Practices for Energy Efficient Buildings (EEB)

Award
Winner (New and Existing Building)

Project/Building/Institution
IOI City Mall Phase 2

Organisation
IOI Properties Group Bhd

ASEAN Best Practices for Energy Efficient Buildings (EEB)

Award
Winner (Tropical Building)

Project/Building/Institution
PETRONAS Leadership Centre

Organisation
PETRONAS

ASEAN Best Practices for Green Buildings (GB)

Award
1st Runner-Up (Large Building)

Project/Building/Institution
Parcel F, Government Complex, Putrajaya

Organisation
Property Management Division, Prime Minister's Department

ASEAN Best Practices for Green Buildings (GB)

Award
Winner (Small and Medium Building)

Project/Building/Institution IOI Galleria

Organisation IOI Properties

ASEAN Best Practices for Green Buildings (GB)

Award
Winner (Residential Building)

Project/Building/Institution
Hydroponic House

Organisation
CH & I Architecture Sdn. Bhd

ASEAN Best Practices for Energy Management (EM)

Award
Winner (Small and Medium Building)

Project/Building/Institution
Hospital Hulu Terengganu

Organisation
Ministry of Health Malaysia

ASEAN Best Practices for Energy Management (EM)

Award
Winner (Large Building)

Project/Building/Institution
Sustainable Development Goal in UTeM: Sustainable Energy Management System

Organisation
Universiti Teknikal Malaysia Melaka (UTeM)

ASEAN Best Practices for Energy Management (EM)

Award
2nd Runner-Up (Large Building)

Project/Building/Institution
Energy Management Program in Hospital Melaka

Organisation
Medivest Sdn Bhd

ASEAN Best Practices for Energy Management (EM)

Award
1st Runner-Up (Small and Medium Industries)

Project/Building/Institution
SMART Modular Technologies

Organisation
SMART Modular Technologies

International Energy Agency Photovoltaic Power Systems Programme (IEA PVPS)

The 65th Executive Committee (ExCo) Meeting of the International Energy Agency Photovoltaic Power Systems Programme (IEA PVPS) was convened from 6 to 8 November 2024 in Yokohama, Japan. The meeting centred on strategic deliberations shaping the future trajectory of the PVPS initiative. Discussions encompassed ongoing research updates, administrative matters including elections, communications development, and programme membership progress.

The session provided a platform for critical evaluations of current task progress, potential collaborations with emerging markets, and future engagement strategies with global agencies. A strong emphasis was placed on the delivery of high-quality data and policy-relevant analysis to accelerate the global shift towards clean energy. Participating countries demonstrated a growing commitment to inter-task collaboration, effective communications, and cutting-edge technical research in areas such as grid integration, system resilience, and diversified PV applications.

Malaysia was represented by Mr. Koh Keng Sen, Chief Operating Officer of the Authority, who reaffirmed the nation's active participation and dedication to the objectives of the IEA PVPS. Malaysia's continued involvement reflects its commitment to advancing international cooperation in photovoltaic technologies and promoting SE solutions.

Through active engagement in discussions, Malaysia reiterated its intention to remain a proactive member of the global solar energy ecosystem, offering regional insights from Southeast Asia and contributing to innovation. Malaysia's contributions were positively acknowledged, with encouragement to enhance data sharing and deepen technical participation within PVPS research domains.

This engagement aligns with Malaysia's national aspiration to become a key player in the global clean energy landscape, and its involvement in PVPS is seen as an important asset in advancing inclusive and internationally representative collaboration.

IEA PVPS Task 1 Meeting

The IEA PVPS Task 1 Meeting brought together international experts to examine the latest developments in the PV sector, including market dynamics, technological advancements, and long-term energy transition scenarios. Discussions highlighted the importance of robust data collection, improvement of National Survey Reports (NSRs), and the development of alternative deployment scenarios beyond conventional IEA projections.

Malaysia was represented by Mr. Saiful Hakim bin Abdul Rahman, Director of Strategic Planning at the Authority, at the meeting held from 25 to 28 November 2024 in Bora Bora, French Polynesia.

The Authority's participation reinforced the country's commitment to expanding solar energy deployment, driving policy reforms, and refining its national energy transition strategy. It also affirmed Malaysia's alignment with global best practices and its intent to contribute valuable regional perspectives.

As of October 2024, Malaysia's installed solar PV capacity stood at 3.36 GW, representing approximately 2.8% of total electricity generation. While natural gas remains the predominant source at 38%, a resurgence in coal usage has been observed due to its comparatively lower cost.

Malaysia's engagement in the Task 1 meeting signified a continued dedication to strengthening its RE ecosystem and supporting global efforts to advance photovoltaic technology and SE development.

Indonesia International Sustainability Forum (ISF)

The Indonesia International Sustainability Forum (ISF) 2024 took place from 5 to 6 September at the Jakarta Convention Center. Organised by the Coordinating Ministry for Maritime and Investment Affairs (Kemenko Marves) in partnership with the Indonesian Chamber of Commerce and Industry (KADIN), the forum sought to enhance international partnerships and accelerate sustainable development initiatives. The Authority was represented its CEO, YBhg. Dato' Hamzah bin Hussin.

The forum was officially opened by President Joko Widodo, who underscored the urgency of global cooperation to tackle the climate crisis and deliver on sustainability goals. Key sessions included plenaries, thematic discussions, and high-level roundtables covering the energy transition, green industry development, and sustainable economic growth.

ISF 2024 highlighted Indonesia's leadership in the global sustainability agenda, including its vast RE potential—estimated at over 440 GW—and its critical mineral reserves. The forum successfully fostered multi-sector dialogue, promoted resource mobilisation, and served as a catalyst for regional and global climate collaboration.

Malaysia's Participation in the High-Level Dialogue on Coal Phase-Out and Technical Visit– London Climate Action Week 2024

Malaysia took part in the High-Level Dialogue on Coal Phase-Out during London Climate Action Week (LCAW), held from 22 to 27 June 2024. The Malaysian delegation was led by YAB Dato' Sri Haji Fadillah bin Haji Yusof, Deputy Prime Minister and Minister of Energy Transition and Water Transformation (PETRA). He was accompanied by YBhg. Dato' Hamzah bin Hussin, CEO of the Authority, along with senior representatives from the Ministry (PETRA), the Energy Commission, and Tenaga Nasional Berhad (TNB).

Hosted at the historic Battersea Power Station, the event brought together international stakeholders to discuss strategies for accelerating coal phase-out and promoting cleaner energy systems. In his address, YAB Dato' Sri Fadillah reaffirmed Malaysia's target to phase out coal by 2044 in line with the National Energy Transition Roadmap (NETR), which also aims for 70% RE contribution by 2050.

Malaysia's active participation reflected its growing leadership in regional energy transition efforts, especially as it prepares to assume the ASEAN Chairmanship in 2025.

The mission included technical visits to advanced clean energy infrastructure in the UK, such as Gridserve's EV Charging Station, the Minety Battery Energy Storage System, and Wessex Water's integrated utilities. These visits provided valuable insights into cutting-edge technologies and operations.

Overall, the engagement raised Malaysia's international profile, strengthened institutional linkages, and contributed to knowledge-sharing for a more sustainable and resilient national energy future.

The 29th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP 29)

Malaysia actively participated in the 29th Conference of the Parties (COP 29) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Baku, Azerbaijan. The Authority was represented by YBrs. Tuan Ahmad Zairin bin Ismail, Chairman of the Authority, and Ts. Mohd Adzha Husin, Deputy Director of Strategic Planning.

The Malaysia Pavilion at COP 29 served as a key platform for showcasing national climate initiatives and fostering international cooperation. Over two weeks, the Pavilion hosted 46 sessions featuring 188 speakers from government, industry, and civil society. It attracted 1,622 in-person participants and approximately 10,000 online viewers. Three Memorandum of Understanding (MoUs) were signed, marking new strategic partnerships in sustainability and cross-sector collaboration.

Malaysia's Minister of Natural Resources and Environmental Sustainability, YB Nik Nazmi Nik Ahmad, reiterated the country's whole-of-nation approach to climate action. He stressed the need to maintain momentum from COP 29 to COP 30 and beyond, reaffirming Malaysia's commitment to collective climate responsibility amid global uncertainties.

Malaysia's Participation in the High-Level Dialogue on Coal Phase-Out and Technical Visit– London Climate Action Week 2024

The 29th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP 29)

Workshop on the Ropes: Forging Green Talent Solutions for an Inclusive Future

Key outcomes of COP29 included agreement on a new climate finance target of USD 300 billion annually until 2035, with a broader mobilisation goal of USD 1.3 trillion per year. Progress was also made on the operationalisation of the Loss and Damage Fund, and a global compliance-based carbon market was established under Article 6 of the Paris Agreement.

Looking ahead, COP30 will be held in Belém, Brazil, from 10-21 November 2025. As the incoming ASEAN Chair, Malaysia is poised to align its climate efforts with global frameworks, foster meaningful partnerships, and play a central role in shaping a resilient, low-carbon future.

Capacity Building Programmes

Workshop on the Ropes: Forging Green Talent Solutions for an Inclusive Future

Held from 5 to 6 September 2024 in Taipei, Chinese Taipei, the Workshop on the ROPES: Forging Green Talent Solutions for an Inclusive Future was organised under the auspices of APEC's Human Resources Development Working Group (HRD WG_203_2023A) and led by the Workforce Development Agency, Ministry of Labour. The event convened policymakers, industry leaders, and education experts from APEC member economies to revisit talent development strategies and policy frameworks necessary to support a more inclusive and sustainable green economy.

Malaysia was represented by:

- Ms. Nurazreena Azha binti Hashim, Assistant Director, Strategic Planning Division, of the Authority; and
- Mr. Norazam bin Mohd Zain, Analyst, Malaysian Green Technology and Climate Change Corporation (MGTC)

The workshop highlighted several key insights, including the promotion of the Bio-Circular-Green (BCG) Economy model, which offers a comprehensive framework that balances human, social, produced, and natural capital. Participants acknowledged that cultivating a green-collar workforce will require targeted clean energy training, the reskilling of workers from conventional sectors, and a focus on inclusivity—particularly in engaging youth, women, and marginalised communities.

Green employment was recognised as spanning a wide range of sectors, including solar energy, sustainable agriculture, electric mobility, and integrated waste management. To strengthen the green workforce ecosystem, several strategic recommendations were outlined: upholding labour rights, embedding BCG principles into organisational practices, and utilising digital platforms to drive workforce transformation.

Best practices shared during the workshop included strategies to assess employment and displacement risks, promote inclusive recruitment policies, foster multi-stakeholder dialogue, and connect workers to appropriate training and employment opportunities within the green economy.

Biomass Innovations Asia 2024

Workshop on Next Generation Data Center Facility in ASEAN

Biomass Innovations Asia 2024

Biomass Innovations Asia 2024, organised by the Centre for Management Technology (CMT), was held at the Tokyo Marriott Hotel and served as a premier regional platform for stakeholders across the biomass and biofuels value chain. The conference brought together key players including biomass pellet producers, agricultural residue suppliers, biofuel manufacturers, traders, and end-users from high-emission sectors such as aviation, shipping, and power generation.

The event explored emerging innovations and commercial opportunities in biofuels, biocarbon, bio-bunkers, sustainable marine fuels, and biochar—shedding light on the sector's potential to support energy transition goals across the Asia-Pacific region.

Malaysia was represented by Ts. Edisham Mohd Sukor, Director of the Authority's Market Operations Division, who also served as a speaker in a dedicated session on decarbonising power generation through biomass. The comprehensive programme featured discussions on net-zero and low-carbon fuel strategies, the economic feasibility of bio-marine fuels, advancements in biofuel production technologies, and sustainability certification mechanisms such as ISCC (International Sustainability and Carbon Certification).

Key sessions also addressed Japan's path to carbon neutrality, economic challenges facing the biofuel industry in comparison to fossil fuels, and policy frameworks to enhance green supply chains.

Malaysia's active involvement in Biomass Innovations Asia 2024 provided access to the latest global developments in biomass and biofuel technologies, while fostering strategic engagement with international industry experts and stakeholders.

Workshop on Next Generation Data Center Facility in ASEAN

This regional workshop focused on addressing the growing energy demands and environmental impacts of data centre operations, particularly in the context of accelerating digitalisation. It highlighted the need for the integration of green energy sources, adoption of energy-efficient technologies, and the development of standardised rating frameworks and certification systems tailored to the ASEAN market. Malaysia was represented by Mr. Mohd Raifuddin bin Daros and Mr. Muhammad Haniff Hasif bin Ahmad Shah from the Authority.

Key outcomes from the workshop included:

- Proposed recommendations to optimise energy consumption in data centres;
- Initiatives to establish a unified sustainability rating framework for ASEAN; and
- Strengthened regional collaboration to drive innovation and improve competitiveness in the digital infrastructure sector.

The workshop concluded with a technical visit to the Huawei Innovation Centre in Jakarta, where participants were introduced to next-generation data centre solutions. The tour showcased advanced features including AI-generated content (AIGC) for predictive maintenance, intelligent cooling systems, and integrated energy storage solutions.

Huawei demonstrated its commitment to sustainable data centre development through the implementation of distributed cooling architectures, the use of AI to optimise performance, and a design ethos centred around reliability, simplicity, and environmental sustainability. The ongoing collaboration between the ASEAN Centre for Energy (ACE) and Huawei is expected to accelerate innovation, harmonise standards, and cultivate talent for the future of data centre infrastructure in the region.

POWERING THROUGH PARTNERSHIP

National Outreach Activities

The Authority continues to play a pivotal role in advancing the nation's SE agenda through extensive outreach and stakeholder engagement. As part of its ongoing mission to promote the adoption of SE solutions across all levels of society, the Authority has undertaken a series of impactful National Outreach Activities throughout 2024. These engagements serve to broaden the understanding and implementation of SE practices, while fostering collaboration across public, private, and community sectors.

The Authority's proactive initiatives are instrumental in shaping Malaysia's clean energy future. In line with the national target of achieving 70% RE in the installed capacity mix by 2050, the Authority has intensified its engagements to support government strategies and catalyse RE development.

Among the flagship engagements in 2024 were the 6th International Sustainable Energy Summit (ISES 2024) and the MADANI Rakyat Programme. These events reinforced the Authority's position as a key driver in energy sector transformation and a trusted advocate for SE awareness nationwide. Complementary initiatives included industry engagement sessions, public awareness campaigns—particularly on the NEM programme—capacity-building workshops, and corporate social responsibility (CSR) efforts to support vulnerable communities.

Together, these outreach activities reflect the Authority's commitment to forging strategic partnerships, advancing knowledge sharing, and encouraging innovation. The following event highlights capture the breadth and impact of these efforts in promoting sustainable energy adoption across the nation.

ISES 2024

The 6th International Sustainable Energy Summit (ISES), held on 20-21 August 2024 at the Kuala Lumpur Convention Centre, served as a landmark event reaffirming Malaysia's leadership in accelerating the global energy transition. Organised by the Authority in collaboration with the Ministry of Energy Transition and Water Transformation (PETRA), the summit returned with renewed ambition under the theme "Accelerating Energy Transition Through Innovation."

ISES 2024 convened over 5,000 delegates, including policymakers, financiers, industry leaders, and innovators, to explore scalable and inclusive pathways towards a low-carbon future. Discussions focused on the transformative power of innovation in reimagining energy production and consumption, expanding access to clean energy, and safeguarding the environment for future generations.

The summit was graced by His Royal Highness The Regent of Pahang, Crown Prince Tengku Hassanal Ibrahim Alam Shah Ibni Al-Sultan Abdullah Ri'ayatuddin Al-Mustafa Billah Shah, who delivered the closing address. His Royal Highness remarked:

"This summit represents a pivotal moment—defined not only by the urgency of our challenges, but also by the opportunities innovation offers. True transformation requires more than technology; it calls for a change in mindset, creativity, and sustained collaboration."

ISES 2024 featured an extensive exhibition with more than 60 booths showcasing cutting-edge RE technologies, products, and services. Business matching sessions and technical dialogues provided valuable platforms for policy exploration, cross-sector collaboration, and investment facilitation.

Through ISES 2024, the Authority further strengthened its position as a thought leader in SE, contributing to regional resilience and investor confidence. The summit's success has set a new benchmark for energy forums in Southeast Asia, demonstrating Malaysia's readiness not only to embrace a clean energy future—but to lead it.

International Sustainable Energy Summit

ISES 2024

Accelerating Energy Transition Through Innovation

20 - 21 Aug 2024 Kuala Lumpur Convention Centre, Malaysia

2024

S

E

MADANI RAKYAT

The MADANI Rakyat Programme, a nationwide initiative spearheaded by the Government of Malaysia under the leadership of Prime Minister, YAB Dato' Seri Anwar bin Ibrahim, aims to bring essential public services closer to the people while promoting key national policies under the Malaysia MADANI framework. Spanning six regions—Central, Northern, Eastern, Southern, Sabah, and Sarawak—the programme fosters direct interaction between citizens and government agencies.

As a key agency under PETRA, the Authority actively participated in all six zonal events. Through its interactive booth, the Authority promoted flagship programmes such as SAVE 4.0, Net Energy Metering (NEM) 3.0, and the Energy Audit Conditional Grant (EACG). Public interest in these initiatives was evident—highlighted by the Kuantan event, where the SAVE 4.0 booth alone received over 200 visitors.

The Authority's involvement in the programme enhanced public awareness of the nation's SE policies while reinforcing collaboration with other PETRA agencies. The presence of high-level leadership—including YAB Dato' Sri Haji Fadillah bin Haji Yusof (Deputy Prime Minister and Minister of PETRA), YB Tuan Haji Akmal Nasrullah bin Mohd Nasir (Deputy Minister), YBhg. Dato' Haji Mad Zaidi bin Mohd Karli (Chief Secretary), and YBhg. Dato' Hamzah bin Hussin (CEO of the Authority)—underscored the strategic importance of the programme in the national energy transition efforts.

Beyond outreach, the initiative enabled direct public feedback and two-way dialogue with the Authority's officers, helping to clarify programme details, address concerns, and improve transparency. These engagements contributed to improved service delivery, while strengthening public trust and programme reach.

Participation in the MADANI Rakyat Programme also allowed the Authority to align its outreach strategies with Malaysia MADANI's values—focusing on inclusivity, sustainability, and people-centric governance. It further enabled the Authority to gather on-the-ground insights, informing the continuous improvement of future initiatives.

The Authority remains firmly committed to empowering communities, enhancing energy literacy, and ensuring equitable access to SE opportunities—contributing meaningfully to Malaysia's long-term energy transition journey.

MADANI RAKYAT PROGRAMME 2024

3-5 May – MADANI Rakyat Programme 2024 (Northern Zone) Sungai Nibong Festival Site, Penang

5 -7 July – MADANI Rakyat Programme 2024 (Eastern Zone) Sayangi Kuantan Square

15 -17 August – MADANI Rakyat Programme 2024 (Southern Zone) UTM Square, Johor Bahru

27-29 September – MADANI Rakyat Programme 2024 Sarawakku Sayang, Boulevard Mall Courtyard, Miri, Sarawak

22 - 24 November – The Two Years MADANI Government Programme Kuala Lumpur Convention Centre

23-25 February – MADANI Rakyat Programme 2024 (Central Zone) Kuala Selangor Sports Complex

18-20 October – MADANI Rakyat Programme 2024 Sabah Likas Sports Complex Grounds, Kota Kinabalu, Sabah

Strategic Engagement

4 January The Authority celebrated the new year with an address delivered by the CEO, YBhg. Dato' Hamzah Hussin, highlighting the Authority's achievement in 2023 and the upcoming programmes throughout the year.

5 January The Authority was honored to welcome YB Tuan Haji Akmal Nasrullah, Deputy Minister of PETRA, alongside senior officials from the Ministry at their office in Galeria PjH, Putrajaya. The visit included a briefing led by CEO YBhg. Dato' Hamzah Hussin.

11 January The Authority welcomed YAB Dato' Sri Haji Fadillah Yusof, Deputy Prime Minister and Minister of PETRA, for a visit and staff engagement session in Putrajaya.

JAN

FEB

2-4 February The Authority had setup a booth at the Putrajaya Open Day 2024, which took place from 2–4 February, to promote initiatives such as SAVE 4.0 and NEM 3.0.

27 February YBhg. Dato' Hamzah Hussin, CEO of the Authority, appeared on Agenda AWANI to discuss RE development and the "Sustainable Lifestyle Starts at Home" campaign.

7 February The Authority welcomed a delegation from the Institute of Engineers Malaysia (IEM) to discuss the sustainable energy landscape and explore collaboration in supporting the National Energy Transition Roadmap (NETR).

MAR

21 March The Authority and PINTARE held a dialogue session on empowering Bumiputera participation in the energy transition sector, featuring industry insights and strategic collaboration.

22 March As part of its Ramadan CSR initiative, the Authority prepared and distributed 1,000 servings of bubur lambuk with Surau An Najah and presented a RM5,000 donation.

APR

2 April In collaboration with Jakel Group, the Authority shared Raya joy with 30 children from Rumah Bakti Nur Syaheera by providing festive clothing and duit raya gifts.

26 April The Authority's CEO, YBhg. Dato' Hamzah Hussin, spoke at the ASIAWATER 2024 ESG Conference, highlighting RE programmes for the water sector, including EACG and FiT–Small Hydro.

19 April Intel Malaysia, led by Johnny Christo, visited the Authority's office to explore the Authority's SE initiatives and potential areas for collaboration.

27-28 April At the National World Water Day 2024 in Kuching, the Authority showcased SAVE 4.0 and ISES 2024. The booth was visited by the Premier of Sarawak and senior PETRA leaders.

MAY

6 May The Authority participated in the Solar@PETRA campaign launch at AEON Mall Shah Alam, promoting NEM 3.0 and hosting pocket talks on solar energy for domestic users.

2 May As part of its CSR efforts, the Authority donated RM50,000 worth of hygiene kits to NADMA to support national disaster preparedness and emergency response.

13 May The Authority supported the launch of the Sustainable Energy Excellence Centre by the Selangor Human Resources Development Centre (SHRDC) and remains committed to training and human capital development in clean energy.

8 May The Authority continues its push for net-zero by 2050 through RE development and the "Sustainable Lifestyle Starts at Home" campaign promoting everyday energy awareness through a Malaysia Hari Ini (MHI) session

14 May At the MPIA Solar Roadshow 2024 in Penang, the Authority's COO Mr. Koh Keng Sen highlighted Malaysia's energy transition progress and promoted NEM and ISES 2024.

16 May YBhg. Dato' Hamzah Hussin joined the Affin ESG Conference 2024 as a panellist, sharing insights on Malaysia's RE progress and a just transition to net-zero.

18 May Congratulations to SM Sains Tuanku Munawer for winning the Sustainability Visit Experience & Renewable Energy Video Competition that is part of the Young Energy Explorer Programme (YEEPE). The programme nurtures youth innovation for a realised SE future.

24 May The Authority hosted the Integrity Reinforcement Briefing 1/2024, promoting workplace ethics and accountability, with a keynote by Tuan Syamsul Debat. Representatives from PETRA and its agencies also attended the event.

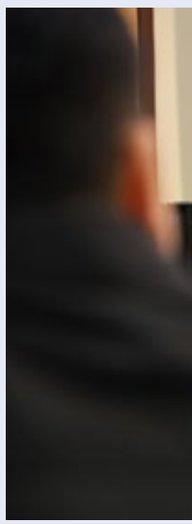
6 June The Authority sponsored the MRSM National Debate Cup 2024. A mock cheque was presented by CSO Ts. Nazri Mizayauddin to support student excellence through public speaking.

23-26 May The Authority setup at PETRA's booth during National Unity Week 2024 at the Padang Akasia & Begonia, Angsana Johor Bahru Mall, to raise awareness on the NEM 3.0, SAVE 4.0, and more.

29-30 June The Authority participated in the National Training Week 2024 at Bukit Jalil, sharing insights on NEM 3.0, SAVE 4.0, and EE with visitors.

13 June Dato' Hamzah Hussin visited the Parliament's 1,550.5kW solar PV installation site, discussing project progress with the Chief Administrator and officials from the Ministry.

6 July The 2024 CEO SEDA Cup Badminton Championship saw Team PETRA crowned as winners. Congratulations to all agencies for fostering team spirit through sports!



JUL

2 July The Authority's COO, Mr. Koh Keng Sen, appeared on Bernama to share tips on energy conservation and the nation's clean energy journey towards net-zero by 2050.

10 July The Authority received a courtesy visit from Toyota Tsusho and Persatuan Industri Tenaga Boleh Baharu dan Alam Sekitar (PINTARE) to explore potential RE collaborations in Malaysia, led by CSO Ts. Nazri Mizayauddin.

21-23 June The SAVE 4.0 Roadshow at AEON Kota Bharu, attracted strong public interest with interactive sessions on energy savings and the SAVE 4.0 programme.

16-17 July The Authority participated in the inaugural Malaysia Energy Literacy Programme (MELP) by TNB, promoting EE and SE awareness to the public.

27 July SEDAxtive hosted a nature walk at FRIM, including a visit to the Rimba Skywalk and a token presentation to FRIM's Deputy Director.

AUG

1 August CEO Dato' Hamzah Hussin was featured in Jurutera magazine, sharing views on Malaysia's RE outlook and the Authority's potential partnership with IEM.

15 August The Authority's Strategic Planning Director, Mr. Saiful Hakim promoted ISES 2024 during a live interview on BERNAMA TV and Radio, highlighting its role in the net-zero agenda.

OCT

9-11 October The Authority participated in IGEM 2024 at KLCC, showcasing green initiatives and programmes in collaboration with agencies under PETRA.

28 August YB Tuan Haji Akmal Nasrullah led a site visit to Gardenia Bakeries under the EACG programme to observe energy audit efforts supported by the Authority.

17 August The Authority joined PETRA's visit to Kampung Orang Asli Berasau, where plans for a solar PV system and community centre were announced under MADANI PETRA.

8-10 October The Authority's COO Mr. Koh Keng Sen joined energy leaders at Enlit Asia 2024 to discuss ASEAN's RE future and net-zero ambitions.

NOV

17 October The Authority announced the FiT 2.0 mechanism and a 190MW quota for biogas, biomass, and small hydropower sources, opening January 2025 to support national RE capacity targets.

18 November The Malaysian-German Chamber of Commerce and Industry (MGCC) organised a delegation to visit the Authority to explore green hydrogen opportunities and support Malaysia's Hydrogen Economy and Technology Roadmap.

12 November The Authority welcomed the Sabah and Sarawak Affairs Division (BHESS) team from the Prime Minister's Department to strengthen strategic cooperation in Sabah and Sarawak's SE development.

25 November Deputy PM YAB Dato' Sri Fadillah Yusof visited Parliament's solar installation site, highlighting Malaysia's move toward clean, sustainable energy.

10 November A special NEM 3.0 briefing was held with the Petaling Jaya MP's office and MBPJ to promote clean energy adoption and net-zero goals.

26-28 November Deputy PM YAB Dato' Sri Fadillah Yusof and Minister of Energy Transition and Water Transformation (PETRA) visited the Authority's booth at the NWICE 2024, promoting innovations in Malaysia's water and sewerage infrastructure.

29 November SMK Dato Jaafar students joined a MELP Parliament session to learn about energy transition, efficiency, and Malaysia's SE vision.

29 November The Authority co-hosted PETRA's Media Appreciation Night, recognising media partners for their support in promoting energy transition awareness.

3 December Deputy Minister YB Akmal Nasrullah launched the YEEPE Studio at Petrosains, KLCC. Since its opening in March 2024, it has welcomed over 45,000 visitors.

DEC

20 December The Authority participated in the Programme Santuni MADANI by PETRA in SK Kebun Baharu, where the Authority promoted the Young Energy Explorer Programme (YEEPE) to 450 students to raise awareness on SE.

12 December The Authority joined PETRA's MADANI Humanitarian Squad Mission to Negeri Sembilan, delivering 136 hygiene kits to flood victims in affected areas.

17 December Malaysia's first EV Fast Charging Station for government use was launched in Putrajaya under the GTALCC project, implemented by the Authority.

GOVERNANCE FOR IMPACT

Audit

Planning and Achievement of the Audit Programme

The Annual Audit Plan for the year 2024 was approved in the Audit Committee Meeting No. 3/2023 on 6 December 2023. The audit achievements are as follows:

APPROVED AUDIT PLANNING	ACHIEVEMENT	REVIEW
CORPORATE GOVERNANCE/COMPLIANCE		
Audit of Management Related to Changes in Approval Conditions for Declared Annual Availability (DAA) Incentives	★★★★	Scope: 2021; • Presented to: Audit and Integrity Committee No. 1/2024 on 19 September 2024; • Three (3) improvement recommendations were proposed to the audit; and Report closed.
Follow-up Audit on ICT Asset Management	✓	Scope: 2020-2022; • Presented to: Audit and Integrity Committee No. 1/2024 on 19 September 2024; with two (2) issues still in action; • Reporting on two (2) issues in action has been completed and presented in Audit and Integrity Committee No. 2/2024 on 13 December 2024; and Report closed.
Follow-up Audit on Net Energy Metering (NEM) 3.0 Application Management	✓	Scope: 2021-2022; • Presented to: Audit and Integrity Committee No. 2/2024 on 13 December 2024; • Six (6) audit findings have been acted upon; and Report closed.
Review of Customer Charter Management	✓	Scope: 2023; • Completed review; and • Will be presented in Audit and Integrity Committee No. 1/2025.

APPROVED AUDIT PLANNING	ACHIEVEMENT	REVIEW
CORPORATE GOVERNANCE/ COMPLIANCE		
Monitoring of Performance Audit on Revenue Collection Management from Electric Tariff Allocation (AOT) at NUR Distribution Sdn. Bhd. (NUR)	✓	Scope: 2022-2023; • Audit Completed – Private Audit Firm (FAS); and • Will be presented in Audit and Integrity Committee No. 1/2025.
Monitoring of Performance Audit on Revenue Collection Management from Electric Tariff Allocation (AOT) at Sabah Electricity Sdn. Bhd. (SESB) and Tenaga Nasional Berhad (TNB)	...	Scope: 2022-2023; • Currently being audited – Private Audit Firm (FAS); • Expected completion in May 2025; and • Periodic monitoring is conducted to ensure the status of audit work progress according to the Audit Planning Memorandum (MPA) submitted to SEDA.
Monitoring of Performance Audit on Cost Recovery Payment Management (ROM) at Sabah Electricity Sdn. Bhd. (SESB)	...	Scope: 2023; • Currently being audited – Private Audit Firm (FAS); • Expected completion in April 2025; and • Periodic monitoring is conducted to ensure the status of audit work progress according to the Audit Planning Memorandum (MPA) submitted to SEDA.
MANAGEMENT CONTROL		
Surprise Inspection (AP 309)	✓	Retail Cashier: • Completed inspections on 25 June 2024, and 5 December 2024; and • The inspection results indicate satisfactory management control with minor improvement suggestions for efficiency enhancement.

Note: The Star Rating is for audit activities only.

STAR RATING GUIDE

★★★★ Very Good
★★★ Good
★★ Satisfactory
★ Unsatisfactory
✓ Activity Completed
... Activity Ongoing/ Being Implemented

GOVERNANCE FOR IMPACT

Integrity

Programme/Activity Implemented

Integrity Reinforcement Briefing Series 1/2024 titled "Beratnya Suatu Amanah" by invited speaker, YBrs. Ustaz Syamsul Amri Ismail (Ustaz Syamsul Debat). Implemented on 24 May 2024, at Baiduri Hall, PETRA

Programme/Activity Objectives

The purpose of this briefing is to:

- Serve as a foundation for fostering and cultivating integrity among the Authority staff. Through this briefing, the Authority aims to raise awareness and encourage the staff to prioritise integrity in carrying out their entrusted duties.
- Aim to shape positive thinking, raise awareness of integrity in daily tasks, enhance the commitment of the Authority staff regarding the cultivation of integrity within the organisation, and improve the values of excellent work and self-management.
- Serve as a knowledge-sharing platform regarding integrity and transparency practices for the Authority staff as guidance and reminders in their daily tasks.

Programme/Activity Target Group, Impact & Outcome

The target group includes all the Authority staff, PETRA staff, and the Integrity Unit of agencies under PETRA as a benchmark for the commitment to integrity of an organisation in combating corruption based on excellent governance and the cultivation of integrity among the Authority staff.

Programme/Activity Implemented

Corruption Risk Management (CRM) Workshop with the Malaysian Anti-Corruption Commission (MACC) Implemented on 26-28 August 2024, at The Everly, Putrajaya

Programme/Activity Objectives

This workshop is organised to understand the basic concepts of laws and public policies regarding corruption while demonstrating understanding in analysing organisational information related to corruption, governance, and integrity. CRM is also an internal control tool to detect corrupt behavior in public and private organisations and helps formulate strategies and develop proactive action or mitigation plans.

Programme/Activity Target Group, Impact & Outcome

The target group consists of representatives from each department/unit.

The outcome/impact is that it can assist organisations in implementing improvements based on policies and legislation, systems and work procedures, noble values and codes of ethics, detection methods, punitive actions and recovery, as well as recognition and reward mechanisms.

Programme/Activity Implemented

Launch of the Organisational Anti-Corruption Plan (OACP) SEDA Malaysia 2024-2028

Programme/Activity Objectives

The launch of the OACP book reflects the Authority's commitment to addressing issues and weaknesses in governance, integrity, and anti-corruption within the organisation. The OACP SEDA Malaysia serves as a guide for SEDA staff and stakeholders in efforts to strengthen governance and integrity so that every activity and programme implemented is always free from corruption, abuse of power, and misconduct. The preparation of this document is in line with the formulation of the National Anti-Corruption Plan (NACP) 2019 – 2023 and aligns with the government's aspiration for Malaysia to be known for integrity rather than corruption.

Programme/Activity Target Group, Impact & Outcome

The OACP SEDA Malaysia 2024-2028 was launched on 5 November 2024, and can be accessed on the the Authority website.

Programme/Activity Implemented

Integrity Reinforcement Programme Series 2/2024 – Screening of the Movie Sheriff: Narko Integriti Implemented on 22 November 2024

Programme/Activity Objectives

In conjunction with the National Integrity Day celebrated on 5 November each year, this programme is implemented to provide lessons while understanding the implications of corruption on oneself, family, organisation, and society, as well as to strengthen the values of integrity within each SEDA staff member.

Programme/Activity Target Group, Impact & Outcome

The target group is all the Authority staff.

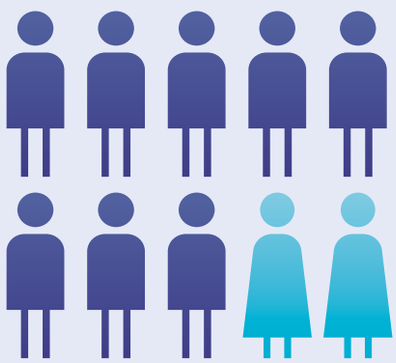
OUR PEOPLE

Our Core Pillars

Empowerment through Inclusion

Gender diversity and inclusion are central to our organisational culture, shaping how we lead, collaborate, and innovate. This commitment is reflected in the gender breakdown of Authority Members, management, and staff below, demonstrating our continuous effort to build a balanced and inclusive workforce.

Authority Members



80% 8 MEN

20% 2 WOMEN

Authority's Management Team

67% 8 MEN

33% 4 WOMEN

Authority's Staff

51% 49 MEN

49% 48 WOMEN

Staff Training and Engagement Activity

Knowledge Sharing Session

A total of four (4) knowledge-sharing sessions were conducted in 2024, as per the schedule below:

SESSION	TITLE
1/2024	Briefing by the Employees Provident Fund (EPF) 24 January 2024
2/2024	Briefing on the 5-Year Strategic Plan of the Authority by the Director of the Strategic Planning Division 29 January 2024
3/2024	Study on Displaced Cost (DC) and Feed-in Tariff (FiT) Rate Revision for Peninsular Malaysia and Sabah by DNV Energy Systems Germany 6 and 7 March 2024
4/2024	Briefing by Takaful Malaysia and PMCare 4 April 2024

Staff Gathering of the Authority

In 2024, the Authority organised one (1) staff gathering session on 26 February 2024.

Training Attended by the Authority Staff

Below is the list of training attended by the Staff in 2024.

TYPE OF TRAINING	PERCENTAGE
Courses	32%
Workshops	25%
Conferences	36%
Seminars	7%

Financial Position

For the financial year ending 31 December 2024, the Authority recorded an after tax surplus of RM6.38 million, representing a decrease of 31.5% compared to RM9.32 million in 2023. This decline was due to the Authority's contribution of RM2.80 million to the Federal Consolidated Fund (Kumpulan Wang Disatukan Persekutuan - KWDP).

Nevertheless, total exchange transactions revenue recorded an increase to RM30.91 million compared to RM29.69 million in the previous year. This growth was driven by the increase in collection of application and processing fees for the FiT system, as well as returns from investments.

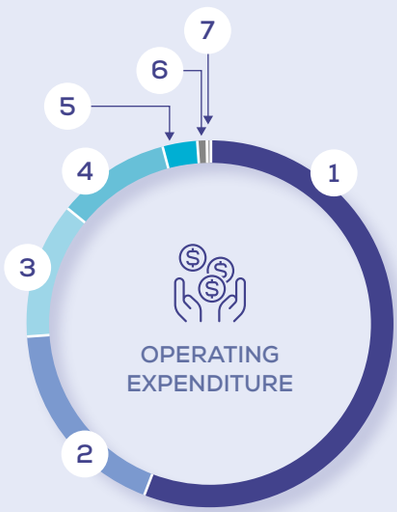
Overall, net assets registered a notable increase to RM79.01 million in 2024 from RM72.63 million recorded at the end of 2023. Total assets amounted to RM161.67 million, while total liabilities stood at RM82.65 million. These figures reflect a strong, sustainable, and resilient financial standing capable of supporting long-term growth.

Development Grant

In 2024, the Authority received total development grant allocation amounting to RM71.44 million from various sources. However, total recorded expenditure for the year stood at RM96.88 million, as it also included the disbursement of the remaining grant balances carried forward from the previous years. This expenditure performance reflects the Authority's continued commitment to accelerate RE initiatives and national level EE programmes.

Operating Expenditure

Throughout 2024, the Authority spent a total of RM24.08 million out of the total approved budget of RM25.37 million, achieving an efficient budget utilisation rate of 94.9%. This expenditure covered:



Total
RM24.08 Mil

1 **Emoluments | 56%**
RM13.63 mil

2 **Supplies and Consumables | 18%**
RM4.31 mil

3 **KWDP Contribution | 12%**
RM2.80 mil

4 **Rental | 10%**
RM2.36 mil

5 **Repairs and Maintenance | 3%**
RM0.63 mil

6 **Grants and Fixed Charges | 1%**
RM0.25 mil

7 **Other Expenditure | 0%**
RM0.10 mil

Exhibit 40 Expenditure for the year 2024

Commitment to the Government

In fulfilling its fiscal responsibility to the nation, the Authority contributed a total of RM2.80 million to the Federal Consolidated Fund (Kumpulan Wang Disatukan Persekutuan - KWDP), from the surplus income for the 2023 financial year. This contribution was made in accordance with the provisions under 29(3) of the Sustainable Energy Development Authority Act 2011 [Act 726].

Financial Statements

SIJIL KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
PIHAK BERKUASA PEMBANGUNAN TENAGA LESTARI MALAYSIA
BAGI TAHUN BERAKHIR 31 DISEMBER 2024

Sijil Mengenai Pengauditan Penyata Kewangan

Pendapat

Saya telah mengaudit Penyata Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia. Penyata kewangan tersebut merangkumi Penyata Kedudukan Kewangan pada 31 Disember 2024 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia dan Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, 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 36.

Pada pendapat saya, penyata kewangan ini memberikan gambaran yang benar dan saksama mengenai kedudukan kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia pada 31 Disember 2024 dan prestasi kewangan serta aliran tunai bagi tahun berakhir pada tarikh tersebut selaras dengan Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) dan keperluan Akta Pihak Berkuasa Pembangunan Tenaga Lestari 2011 [*Akta 726*].

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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia dan telah memenuhi tanggungjawab etika lain berdasarkan International Standards of Supreme Audit Institutions.

Maklumat Lain Selain Daripada Penyata Kewangan dan Sijil Juruaudit Mengenainya

Anggota Pihak Berkuasa, Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia bertanggungjawab terhadap maklumat lain dalam Laporan Tahunan. Pendapat saya terhadap Penyata Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia tidak meliputi maklumat lain selain daripada penyata kewangan dan Sijil Juruaudit mengenainya dan saya tidak menyatakan sebarang bentuk kesimpulan jaminan mengenainya.

Tanggungjawab Anggota Pihak Berkuasa Terhadap Penyata Kewangan

Anggota Pihak Berkuasa bertanggungjawab terhadap penyediaan Penyata Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia yang memberi gambaran benar dan saksama selaras dengan Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) dan keperluan Akta Pihak Berkuasa Pembangunan Tenaga Lestari 2011 [*Akta 726*]. Anggota Pihak Berkuasa juga bertanggungjawab terhadap penetapan kawalan dalaman yang perlu bagi membolehkan penyediaan Penyata Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia yang bebas daripada salah nyata yang ketara, sama ada disebabkan fraud atau kesilapan.

Semasa penyediaan Penyata Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia, Anggota Pihak Berkuasa bertanggungjawab untuk menilai keupayaan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia 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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia 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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia, 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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia;

c. menilai kesesuaian dasar perakaunan yang diguna pakai, kemunasabahan anggaran perakaunan dan pendedahan yang berkaitan oleh Anggota Pihak Berkuasa;

d. membuat kesimpulan terhadap kesesuaian penggunaan asas perakaunan untuk usaha berterusan oleh Anggota Pihak Berkuasa 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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia 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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia 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 Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia tidak lagi berupaya meneruskan operasi secara usaha berterusan; dan

e. menilai persembahan secara keseluruhan, struktur dan kandungan Penyata Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia, termasuk pendedahannya, dan sama ada penyata kewangan tersebut telah melaporkan asas-asas urus niaga dan peristiwa-peristiwa yang memberikan gambaran saksama.

Anggota Pihak Berkuasa 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 Pihak Berkuasa, Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia berdasarkan keperluan Akta Pihak Berkuasa Pembangunan Tenaga Lestari 2011 [*Akta 726*] dan bukan untuk tujuan lain. Saya tidak bertanggungjawab terhadap pihak lain bagi kandungan sijil ini.

(DATO' SERI WAN SURAYA WAN MOHD RADZI)
KETUA AUDIT NEGARA
MALAYSIA

PUTRAJAYA
17 SEPTEMBER 2025

PENYATA PENGERUSI DAN SEORANG ANGGOTA PIHAK BERKUASA PEMBANGUNAN TENAGA LESTARI (SEDA) MALAYSIA

Kami, Ahmad Zairin Bin Ismail dan Dr. Nurmazilah Binti Dato' Mahzan yang merupakan Pengerusi dan salah seorang Anggota Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia dengan ini menyatakan bahawa, pada pendapat Anggota Pihak Berkuasa, Penyata Kewangan yang mengandungi Penyata Kedudukan Kewangan, Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, Penyata Aliran Tunai dan Penyata Prestasi Bajet Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya, adalah disediakan untuk menunjukkan pandangan yang benar dan saksama berkenaan kedudukan Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia pada 31 Disember 2024 dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun berakhir pada tarikh tersebut.

Bagi pihak Anggota Pihak Berkuasa:

.....

Nama: AHMAD ZAIRIN BIN ISMAIL
Gelaran: Pengerusi
Tarikh: 23 APR 2025
Tempat: Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia Presint 4, Putrajaya

Bagi pihak Anggota Pihak Berkuasa:

.....

Nama: Dr. NURMAZILAH BINTI DATO' MAHZAN
Gelaran: Anggota Pihak Berkuasa
Tarikh: 23 APR 2025
Tempat: Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia Presint 4, Putrajaya

PENGAKUAN OLEH PEGAWAI UTAMA YANG BERTANGGUNGJAWAB KE ATAS PENGURUSAN KEWANGAN PIHAK BERKUASA PEMBANGUNAN TENAGA LESTARI (SEDA) MALAYSIA

Saya, Zafina Binti Ahmad, pegawai utama yang bertanggungjawab ke atas pengurusan kewangan dan rekod-rekod perakaunan Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia, dengan ikhlasnya mengakui bahawa Penyata Kedudukan Kewangan, Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, Penyata Aliran Tunai dan Penyata Prestasi Bajet 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 Putrajaya
pada 23 APR 2025

.....

ZAFINA BINTI AHMAD
750505-08-6560
PENGARAH KEWANGAN

Di hadapan saya,

PESURUHJAYA SUMPAH
NO. W 823
MOHD FARID BIN ISMAIL
BC/M/1104
1/1/2024 - 31/12/2026
MALAYSIA

.....

PESURUHJAYA SUMPAH
Block [illegible]
Bazaar@8, Jalan Seluang P8/7,
Presint 8, 62250 Putrajaya.
+6019-3808703, +603-83280306
mf8vocate1@gmail.com

PENYATA KEDUDUKAN KEWANGAN PADA 31 DISEMBER 2024

	NOTA	2024	2023
		RM	RM
ASET			
Aset Semasa			
Tunai dan Kesetaraan Tunai	3	13,904,593	28,340,967
Pelaburan Jangka Pendek	4	118,000,000	141,600,000
Urus Niaga Pertukaran Belum Terima	5	4,560,631	4,071,477
Jumlah Aset Semasa		**136,465,224**	**174,012,444**
Aset Bukan Semasa			
Hartanah, Kelengkapan dan Peralatan	6	24,109,103	969,075
Aset Tak Ketara	7	830,952	921,512
Aset Dalam Pembinaan	8	263,044	2,260,000
Jumlah Aset Bukan Semasa		**25,203,099**	**4,150,587**
Jumlah Aset		**161,668,323**	**178,163,031**
LIABILITI			
Liabiliti Semasa			
Urus Niaga Pertukaran Belum Bayar	9	6,773,169	4,299,521
Jumlah Liabiliti Semasa		**6,773,169**	**4,299,521**
Liabiliti Bukan Semasa			
Manfaat Pekerja Jangka Panjang	10	215,837	122,731
Geran Tertunda	11	75,665,156	101,109,694
Jumlah Liabiliti Bukan Semasa		**75,880,993**	**101,232,425**
Jumlah Liabiliti		**82,654,162**	**105,531,946**
Aset Bersih		**79,014,161**	**72,631,085**
ASET BERSIH			
Lebihan Terkumpul		79,014,161	72,631,085
Jumlah Aset Bersih		**79,014,161**	**72,631,085**

Nota-nota yang dikemukakan merupakan sebahagian asasi daripada penyata kewangan ini dan hendaklah dibaca bersama.

PENYATA PRESTASI KEWANGAN BAGI TAHUN BERAKHIR 31 DISEMBER 2024

	NOTA	2024	2023
		RM	RM
HASIL			
Urus Niaga Pertukaran	12	30,907,496	29,689,916
Urus Niaga Bukan Pertukaran	13	95,503,053	12,403,543
Jumlah Hasil		**126,410,549**	**42,093,459**
BELANJA			
Anggota Pengurusan Utama	14	605,352	458,666
Upah, Gaji dan Manfaat Pekerja	15	13,029,271	11,047,713
Bekalan dan Bahan Guna Habis	16	4,309,771	4,615,522
Belanja Sewaan	17	2,363,543	2,118,638
Belanja Susut Nilai dan Pelunasan	18	481,147	516,163
Pembaikan dan Penyelenggaraan	17	629,481	520,067
Geran dan Pindahan Bayaran Lain	19	95,467,770	12,385,118
Perbelanjaan Lain	20	3,141,138	1,114,506
Jumlah Belanja		**120,027,473**	**32,776,393**
Lebihan Bagi Tahun Semasa		**6,383,076**	**9,317,066**

Nota-nota yang dikemukakan merupakan sebahagian asasi daripada penyata kewangan ini dan hendaklah dibaca bersama.

PENYATA PERUBAHAN ASET BERSIH BAGI TAHUN BERAKHIR 31 DISEMBER 2024

	Lebihan Terkumpul	Jumlah Aset Bersih
	RM	RM
Baki Pada 1 Januari 2023	**63,314,019**	**63,314,019**
Lebihan Bagi Tahun Semasa	9,317,066	9,317,066
Baki Pada 31 Disember 2023	72,631,085	72,631,085
Lebihan Bagi Tahun Semasa	6,383,076	6,383,076
Baki Pada 31 Disember 2024	**79,014,161**	**79,014,161**

Nota-nota yang dikemukakan merupakan sebahagian asasi daripada penyata kewangan ini dan hendaklah dibaca bersama.

PENYATA ALIRAN TUNAI BAGI TAHUN BERAKHIR 31 DISEMBER 2024

	NOTA	2024	Seperti yang dinyatakan semula 2023
		RM	RM
ALIRAN TUNAI DARIPADA AKTIVITI OPERASI			
Lebihan Sebelum Cukai		6,383,076	9,317,066
Pergerakan/ Pelarasan Bukan Tunai:			
Belanja Susut Nilai Hartanah, Loji dan Peralatan		347,388	407,055
Pelunasan Aset Tak Ketara		133,760	109,108
Peruntukan Manfaat Kakitangan		93,106	105,215
Kumpulan Wang Disatukan Persekutuan		2,795,120	-
Terimaan Geran	22	71,438,784	81,775,038
Pelunasan Geran		(96,883,321)	(14,283,916)
Hibah Bank		(936,081)	(963,451)
Lebihan Pelaburan Jangka Pendek		(5,182,435)	(3,805,862)
Kurangan Pelupusan Hartanah, Loji dan Peralatan		-	54,599
Pertambahan Operasi Sebelum Perubahan Modal Kerja		(21,810,604)	72,714,852
Perubahan Dalam Modal Kerja:			
Peningkatan Urus Niaga Pertukaran Belum Terima		411,577	1,110,016
Peningkatan/ (Pengurangan) dalam Pertukaran Belum Bayar		(321,472)	(1,056,359)
Tunai Bersih Dihasilkan daripada Aktiviti Operasi		(21,720,498)	72,768,509
Hibah Diterima		936,081	963,451
Aliran Tunai Bersih daripada Aktiviti Operasi		**(20,784,417)**	**73,731,960**
ALIRAN TUNAI DARIPADA AKTIVITI PELABURAN			
Pembelian Hartanah, Loji dan Peralatan		(21,229,660)	(253,756)
Pembelian Aset Tak Ketara		(43,200)	(353,510)
Aset Dalam Pembinaan		(263,044)	(2,260,000)
Kerugian Pelupusan Hartanah, Loji dan Peralatan		2,244	-
Pelupusan/ (Pembelian) Pelaburan Jangka Pendek		23,600,000	(63,600,000)
Terimaan daripada Jualan Pelaburan		4,281,703	2,681,056
Aliran Tunai Bersih daripada Aktiviti Pelaburan		**6,348,044**	**(63,786,210)**
ALIRAN TUNAI DARIPADA AKTIVITI PEMBIAYAAN		**-**	**-**
Peningkatan/ (Penurunan) Dalam Tunai dan Kesetaraan Tunai		(14,436,374)	9,945,750
Tunai dan Kesetaraan Tunai Pada Awal Tahun		28,340,967	18,395,217
Tunai dan Kesetaraan Tunai Pada Akhir Tahun		**13,904,593**	**28,340,967**
Nota kepada tunai dan setara tunai pada akhir tahun:			
Tunai di Tangan dan Bank	3	13,904,593	28,340,967
		13,904,593	**28,340,967**

Nota-nota yang dikemukakan merupakan sebahagian asasi daripada penyata kewangan ini dan hendaklah dibaca bersama.

PENYATA PRESTASI BAJET BAGI TAHUN BERAKHIR 31 DISEMBER 2024

	NOTA	Amaun Bajet		Sebenar	Perbezaan
		Bajet Asal	Bajet Akhir		
		RM	RM	RM	RM
MENGURUS					
PENDAPATAN					
Urus Niaga Pertukaran	**23(a)**	26,432,000	26,432,000	30,907,496	4,475,496
Urus Niaga Bukan Pertukaran		86,602,870	86,602,870	95,503,053	8,900,183
Jumlah Pendapatan		**113,034,870**	**113,034,870**	**126,410,549**	**13,375,679**
PERBELANJAAN					
Emolumen	**23(b)**	16,797,400	16,566,000	13,634,623	2,931,377
Bekalan dan Bahan Guna Habis	**23(c)**	4,983,900	5,228,596	4,309,771	918,825
Belanja Sewaan		2,299,900	2,407,900	2,363,543	44,357
Pembaikan dan Penyelenggaraan	**23(d)**	993,200	815,000	629,481	185,519
Pemberian dan Kenaan Bayaran	**23(e)**				
Tetap		222,400	248,104	3,046,764	(2,798,661)
Perbelanjaan Lain		73,900	105,100	94,373	10,727
Jumlah Perbelanjaan		**25,370,700**	**25,370,700**	**24,078,555**	**1,292,145**
LEBIHAN BERSIH SEBELUM PELUNASAN GERAN		**87,664,170**	**87,664,170**	**102,331,994**	**(14,667,824)**
Geran dan Pindahan Bayaran Lain	**23(f)**	86,602,870	86,602,870	95,467,770	(8,864,900)
LEBIHAN BERSIH SELEPAS PELUNASAN GERAN		**1,061,300**	**1,061,300**	**6,864,224**	**(5,802,924)**
HARTA MODAL					
Hartanah, Loji dan Peralatan	**23(g)**	33,300,000	33,286,800	23,489,660	9,797,140
Aset Tak Ketara		30,000	43,200	43,200	-
Aset Dalam Pembinaan	**8**	-	-	263,044	(263,044)
LEBIHAN BERSIH	**23(h)**	**(32,268,700)**	**(32,268,700)**	**(16,931,680)**	**(15,337,020)**

Nota-nota yang dikemukakan merupakan sebahagian asasi daripada penyata kewangan ini dan hendaklah dibaca bersama.

PENYATA PRESTASI BAJET BAGI TAHUN BERAKHIR 31 DISEMBER 2024

	NOTA 23 (f)	Anggaran Asal/Akhir	Sebenar	Perbezaan
		RM	RM	RM
PELUNASAN GERAN				
Geran Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA)	(i)	575,000	-	575,000
Geran Program MySuria		60,000	58,468	1,532
Geran *Government Lead By Example* (GLBE)	(ii)	1,886,000	49,140	1,836,860
Geran *Renewable Energy Business Facility* (REBF)	(iii)	5,000,000	471,345	4,528,655
Geran Audit Tenaga Bersyarat RMK-11	(iv)	1,104,950	-	1,104,950
Geran Audit Tenaga Bersyarat RMK-12	(v)	12,356,350	8,112,186	4,244,164
Geran Program *Sustainability Achieved Via Energy Efficiency* (SAVE)	(vi)	250,000	92,574	157,426
Geran *TNB ROM Enhancement*		12,000	9,338	2,662
Geran *Green Technology Application for the Development of Low Carbon Cities*	(vii)	931,000	85,177	845,823
Geran Program SAVE 2.0 (AAIBE)		102,000	-	102,000
Geran Program SAVE 4.0 (AAIBE)	(viii)	5,115,110	59,472,516	(54,357,406)
Geran Kumpulan Wang Tenaga Boleh Baharu	(ix)	2,252,630	2,255,673	(3,043)
Geran Retrofit Kecekapan Tenaga		2,196,230	2,162,278	33,952
Geran *Government of Selangor* - Teknologi Hijau		41,600	19,915	21,685
Geran Pemasangan Sistem Solar di Bangunan Kerajaan	(x)	54,720,000	22,532,117	32,187,883
Geran Program SAVE 3.0 (AAIBE)		-	31,115	(31,115)
Belanja Geran Mesyuarat ASEAN		-	36,515	(36,515)
Belanja Geran Santuni MADANI		-	48,000	(48,000)
Geran *Building Energy Data Online Monitoring System* (BEDOS)		-	31,413	(31,413)
JUMLAH PELUNASAN GERAN		**86,602,870**	**95,467,770**	**(8,864,900)**

Nota-nota yang dikemukakan merupakan sebahagian asasi daripada penyata kewangan ini dan hendaklah dibaca bersama.

NOTA AKAUN KEPADA PENYATA KEWANGAN BAGI TAHUN BERAKHIR 31 DISEMBER 2024

1. ASAS PENYEDIAAN

(a) Maklumat Am

Pihak Berkuasa Pembangunan Tenaga Lestari (SEDA) Malaysia ("Pihak Berkuasa") ditubuhkan dengan berkuat kuasanya Akta Pihak Berkuasa Pembangunan Tenaga Lestari 2011 [*Akta 726*] pada 1 September 2011.

Objektif utama penubuhan Pihak Berkuasa adalah untuk melaksanakan fungsi-fungsi perbadanan Pihak Berkuasa selaras dengan kehendak Akta 726.

Anggota Pihak Berkuasa dilantik oleh Menteri Peralihan Tenaga dan Transformasi Air (PETRA). Anggota Pihak Berkuasa terdiri daripada seorang (1) Pengerusi, tiga (3) wakil Kerajaan Persekutuan, lima (5) orang anggota lain dan Ketua Pegawai Eksekutif.

Anggota Pihak Berkuasa yang masih berkhidmat sejak tarikh akhir Penyata Kewangan ini adalah seperti berikut:

Anggota yang masih kekal pada tahun 2024:
YBrs. Tuan Ahmad Zairin bin Ismail - Pengerusi
YBrs. Puan Haslina binti Abdul Samad
YBrs. Dr. Nurmazilah binti Dato' Mahzan
YB Tuan Lee Chean Chung
YBrs. Ir. Ts. Dr. Mohd Azhar bin Abd Hamid
YB Tuan Ganabatirau a/l Veranam
YBrs. Ir. Abdul Rahim bin Ibrahim
YBhg. Dato' Hamzah bin Hussin – Ketua Pegawai Eksekutif

Anggota baharu yang dilantik pada tahun 2024:
YBhg. Dato' Haji Mad Zaidi bin Mohd Karli (dilantik pada 1 Februari 2024)
YBhg.Tan Sri Wan Ahmad Dahlan bin Haji Abdul Aziz (dilantik pada 1 Ogos 2024)

Anggota yang tamat perkhidmatan pada tahun 2024:
YBhg. Dr. Ching Thoo a/l Kim (Tamat perkhidmatan pada 31 Januari 2024)
YBrs. Ts. Dr. Sang Yew Ngin (Tamat perkhidmatan pada 31 Mac 2024)
YBrs. En. Saiful Sungkih bin Abdullah (Tamat perkhidmatan pada 31 Julai 2024)

Sejak akhir tahun kewangan yang lepas, tiada Anggota Pihak Berkuasa menerima atau layak menerima sebarang manfaat (selain daripada Elaun Anggota seperti yang ditunjukkan di dalam Penyata Kewangan, *rujuk* ***Nota 14***) seperti yang termaktub di dalam Akta 726.

Berdasarkan kepada Seksyen 37 Akta 726, tahun kewangan Pihak Berkuasa hendaklah bermula pada 1 Januari dan berakhir pada 31 Disember setiap tahun. Tempoh perakaunan Pihak Berkuasa bagi tahun 2024 bermula dari 1 Januari 2024 sehingga 31 Disember 2024.

Penyata Kewangan Pihak Berkuasa bagi tahun berakhir 31 Disember 2024 telah dibentang dan diperakukan di Mesyuarat Jawatankuasa Kewangan Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia Bil. 01/2025 pada 24 Mac 2025 dan diluluskan melalui Ketetapan Tanpa Bermesyuarat Anggota Pihak Berkuasa Pembangunan Tenaga Lestari Bil. 2/2025 pada 23 April 2025.

(b) Penyata Pematuhan

Penyata Kewangan ini telah disediakan berdasarkan kepada Piawaian Perakaunan Sektor Awam Malaysia (MPSAS).

Penyata Kewangan ini telah disediakan mengikut asas akruan menurut kelaziman Kos Sejarah kecuali seperti yang didedahkan di Dasar Perakaunan.

Peristiwa Selepas Tarikh Pelaporan ialah peristiwa yang memuaskan atau sebaliknya, yang berlaku antara tarikh pelaporan dengan tarikh apabila Penyata Kewangan diterbitkan.

(c) Pertimbangan dan Anggaran

Penyediaan Penyata Kewangan memerlukan pertimbangan, anggaran dan andaian yang memberi kesan kepada penggunaan dasar dan amaun bagi Aset, Liabiliti, Hasil dan Belanja yang dilaporkan.

Anggaran dan andaian yang digunakan akan disemak secara berterusan. Semakan semula kepada anggaran perakaunan akan diiktiraf dalam tempoh anggaran tersebut disemak, jika semakan semula hanya memberi kesan kepada tempoh tersebut, atau dalam tempoh semakan dan tempoh masa hadapan sekiranya semakan semula memberi kesan kepada tempoh semasa dan masa yang akan datang.

2. DASAR PERAKAUNAN

Dasar perakaunan yang berikut diamalkan oleh Pihak Berkuasa:

(a) Asas Perakaunan

Pihak Berkuasa mengguna pakai piawaian perakaunan MPSAS seperti yang telah diluluskan oleh Jabatan Akauntan Negara Malaysia.

(b) Pengiktirafan Pendapatan

i) Hasil Daripada Urus Niaga Bukan Pertukaran

Urus Niaga 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 Kedudukan Kewangan. Apabila obligasi terhadap sesuatu liabiliti itu telah dipenuhi, Pihak Berkuasa hendaklah mengurangkan amaun bawaan liabiliti yang diiktiraf itu dan mengiktiraf amaun hasil yang sama dengan pengurangan itu.

Hasil Daripada Urus Niaga Bukan Pertukaran adalah seperti berikut:

- **Pemberian daripada Kerajaan**

  Pemberian daripada Kerajaan diiktiraf apabila diterima dan akan dilunaskan apabila Pihak Berkuasa menanggung perbelanjaan tersebut.

ii) Hasil Daripada Urus Niaga Pertukaran

Hasil daripada Urus Niaga Pertukaran diiktiraf apabila terdapat kemungkinan bahawa manfaat ekonomi masa hadapan atau potensi perkhidmatan akan mengalir kepada Pihak Berkuasa dan manfaat ini boleh diukur dengan pasti.

Hasil daripada Urus Niaga Pertukaran adalah seperti berikut:

- **Pendapatan Perkhidmatan**

  Pendapatan perkhidmatan terdiri daripada kutipan fi yang kena dibayar kepada Pihak Berkuasa sebagaimana yang diperuntukkan di bawah Akta 726 serta kutipan bagi perkhidmatan lain-lain. Pendapatan ini diambil kira apabila fi yang kena dibayar dikenakan dan diterima.

  Pendapatan Fi Pentadbiran Tarif Galakan (FiT) diiktiraf berdasarkan tarikh janaan meter hasil yang dituntut sehingga 31 Disember setiap tahun.

  Selaras Penyerahan Kuasa Kawal Selia Pembekalan Elektrik Negeri Sabah dan Sabah Electricity Sdn Bhd (SESB) kepada Kerajaan Negeri Sabah melalui Enakmen Tenaga Boleh Baharu Sabah 2024 berkuat kuasa 3 Januari 2024, semua fungsi berkaitan pentadbiran Mekanisme Tarif Galakan bagi Negeri Sabah (tidak termasuk Wilayah Persekutuan Labuan) telah diambil alih sepenuhnya oleh *Energy Commission of Sabah* (ECoS). Oleh itu, tiada hasil Fi Pentadbiran akan diterima oleh Pihak Berkuasa daripada SESB untuk Negeri Sabah (tidak termasuk Wilayah Persekutuan Labuan) dari 3 Januari 2024.

- **Pendapatan Faedah dan Hibah**

  Pendapatan faedah dan hibah diiktiraf atas perkadaran masa yang mengambil kira kadar pulangan hasil efektif atas aset tersebut. Kadar pulangan hasil efektif ke atas aset ialah kadar keuntungan yang diperlukan untuk mendiskaunkan jangkaan aliran penerimaan tunai masa hadapan sepanjang hayat aset tersebut untuk disamakan dengan amaun bawaan awal aset tersebut.

- **Perolehan dari Jualan Barang**

  Perolehan dari Jualan Barang merupakan terimaan daripada jualan borang sebut harga dan tender serta jualan harta benda fizikal (tidak termasuk pelaburan) dan lain-lain yang diiktiraf apabila terdapat kemungkinan bahawa manfaat ekonomi masa hadapan atau potensi perkhidmatan akan mengalir kepada Pihak Berkuasa dan manfaat ini boleh diukur dengan pasti.

(c) Hartanah, Loji dan Peralatan

Aset diiktiraf sebagai Hartanah, Loji dan Peralatan apabila terdapat manfaat ekonomi masa depan atau potensi perkhidmatan dijangka mengalir ke dalam Pihak Berkuasa, ianya berpunca daripada peristiwa lampau serta nilai saksama aset dapat diukur dengan munasabah. Had nilai dipermodalkan untuk Hartanah, Loji dan Peralatan adalah RM2,000 bagi setiap item tertakluk kepada kajian semula pada masa hadapan.

Hartanah, Loji dan Peralatan dinyatakan pada kos tolak susut nilai dan rosot nilai terkumpul (jika ada). Kos termasuk semua kos yang terlibat untuk membawa aset tersebut ke lokasi dan keadaan yang membolehkannya beroperasi dalam cara yang dikehendaki oleh pihak pengurusan. Kos penggantian bagi mana-mana aset yang memerlukan penggantian secara berkala akan dipermodalkan manakala nilai dibawa bagi bahagian yang diganti tersebut akan dinyahiktirafkan. Kos-kos perkhidmatan harian akan diiktiraf sebagai perbelanjaan dalam Lebihan atau Kurangan.

Jika sesuatu aset diperoleh melalui Urus Niaga Bukan Pertukaran, kos hendaklah diukur berdasarkan nilai saksama pada tarikh perolehan. Aset-aset ini kemudiannya akan dikreditkan di dalam Penyata Prestasi Kewangan melainkan jika terdapat syarat-syarat mengenai penggunaan aset tersebut, di mana ia perlu diiktiraf di dalam Liabiliti Semasa. Nilai saksama ditentukan dengan merujuk kepada nilaian oleh Jurunilai Berlesen.

Nilai dibawa item Hartanah, Loji dan Peralatan hendaklah dinyahiktiraf semasa pelupusan atau apabila tiada manfaat ekonomi masa hadapan atau potensi perkhidmatan yang dijangka daripada penggunaan atau pelupusannya. Keuntungan atau kerugian atas nyahiktiraf Hartanah, Loji dan Peralatan adalah ditentukan dengan membandingkan nilai pelupusan bersih dengan nilai dibawa aset di mana perbezaannya akan diambil kira sebagai keuntungan atau kerugian di dalam Lebihan atau Kurangan.

Susut Nilai

Susut Nilai bagi Hartanah, Loji dan Peralatan dikira berdasarkan kaedah asas garis lurus ke atas anggaran jangka masa guna aset berkenaan.

Jika terdapat tanda perubahan yang ketara dalam faktor-faktor yang memberi kesan kepada nilai sisa, jangkaan hayat atau corak berguna aset sejak tarikh laporan tahunan lepas, nilai sisa, kaedah susut nilai dan hayat berguna aset yang boleh disusut nilai akan disemak semula dan dilaraskan secara prospektif.

Kadar tahunan susut nilai adalah seperti berikut:

Kategori Hartanah, Loji dan Peralatan	Kadar susut nilai (%)
Bangunan	2
Perabot, Kelengkapan dan Ubahsuai	20
Komputer dan Sistem Aplikasi	33 1/3
Kenderaan Bermotor	20
Elektronik	20

Susut nilai bangunan bagi tahun kewangan 2024 masih belum direkodkan selaras perenggan 71 MPSAS 17 di mana susut nilai sesebuah aset hanya bermula apabila aset tersebut telah tersedia untuk digunakan dan boleh beroperasi dalam cara yang dikehendaki oleh Pihak Berkuasa.

Tanah pada nilai kos adalah jenis pegangan untuk selama-lamanya dan tidak disusutnilaikan.

(d) Aset Tak Ketara

Aset Tak Ketara diiktiraf apabila ia terdapat kemungkinan bahawa manfaat ekonomi masa hadapan atau potensi perkhidmatan akan mengalir kepada Pihak Berkuasa dan kos atau nilai saksama aset boleh diukur dengan pasti.

Aset Tak Ketara diambil alih secara berasingan adalah diukur pada kos pada awalnya manakala aset yang diperolehi melalui Urus Niaga Bukan Pertukaran akan diukur berdasarkan nilai saksama pada tarikh perolehan. Selepas itu, Aset Tak Ketara diukur pada kos ditolak sebarang pelunasan terkumpul dan sebarang kerugian rosot nilai terkumpul, jika ada. Kos yang berkaitan dengan Aset Tak Ketara yang dijanakan secara dalaman kecuali perbelanjaan pembangunan diiktiraf sebagai perbelanjaan. Nilai saksama ditentukan dengan merujuk kepada nilaian oleh Pengarah Bahagian Perkhidmatan Digital.

Sesuatu Aset Tak Ketara itu akan dinilai sama ada terdapat tempoh jangkaan hayat ataupun tidak. Jika Aset Tak Ketara itu tidak mempunyai jangkaan hayat, maka ia tidak perlu dilunaskan tetapi perlu dinilai sama ada perlu dibuat rosot nilai jika terdapat sebarang petunjuk.

Tempoh jangka hayat Aset Tak Ketara adalah dalam tempoh lima (5) hingga sepuluh (10) tahun. Namun jika terdapat penambahbaikan kepada Aset Tak Ketara dan direkodkan sebagai dipermodalkan kepada bersama aset utama, jangka hayat aset tersebut adalah tertakluk kepada baki jangka hayat aset utama tersebut.

Pada setiap tarikh pelaporan, tempoh dan kaedah pelunasan akan dikaji semula jika terdapat tanda perubahan yang ketara dalam faktor-faktor yang memberi kesan kepada nilai sisa jangkaan hayat atau corak penggunaan aset sejak tarikh pelaporan tahunan yang lalu.

Keuntungan atau kerugian atas nyahiktiraf Aset Tak Ketara adalah ditentukan dengan membandingkan nilai pelupusan bersih dengan nilai dibawa aset di mana perbezaannya akan diambil kira sebagai keuntungan atau kerugian di dalam Lebihan atau Kurangan.

(e) Aset Kewangan

Aset Kewangan diiktiraf dalam Penyata Kedudukan Kewangan apabila Pihak Berkuasa 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 mengisu Aset Kewangan.

Selepas pengiktirafan awal, Aset Kewangan akan dikelaskan kepada salah satu daripada empat kategori Aset Kewangan iaitu Aset Kewangan diukur pada nilai saksama menerusi 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 transaksi itu dibuat, iaitu tarikh di mana Pihak Berkuasa membuat komitmen untuk membeli atau menjual aset tersebut.

Pihak Berkuasa mempunyai kategori Aset Kewangan seperti berikut:

- **Belum Terima**

  Belum Terima adalah Aset Kewangan bukan derivatif dengan bayaran tetap atau boleh ditentukan yang tidak disebut harga dalam pasaran aktif. Selepas pengukuran awal, Aset Kewangan tersebut kemudiannya diukur pada kos dilunaskan menggunakan kaedah faedah berkesan 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 berkesan. Kerugian yang timbul daripada kemerosotan nilai diiktiraf dalam Lebihan atau Kurangan.

- **Kerugian Hutang Ragu Bagi Belum Terima**

  Pihak Berkuasa menilai pada setiap tarikh pelaporan sama ada terdapat sebarang objektif bahawa Aset Kewangan terjejas. Untuk menentukan sama ada terdapat bukti objektif rosot nilai, Pihak Berkuasa menganggap faktor seperti ketidakmampuan bayar siberhutang dan keingkaran atau kelewatan pembayaran yang ketara. Jika terdapat bukti potensi hutang tak mampu, jumlah dan aliran tunai masa depan dianggarkan berdasarkan sejarah pengalaman kerugian untuk aset yang mempunyai ciri-ciri risiko kredit yang serupa.

  Urus Niaga Pertukaran Belum Terima dinyatakan pada kos. Hutang Ragu akan diperuntukkan bagi hutang yang tidak berbayar melebihi tempoh satu (1) tahun.

- **Pelaburan Dipegang Hingga Matang**

  Aset Kewangan bukan derivatif dengan tempoh matang pembayaran tetap atau boleh ditentukan dan tetap diklasifikasikan sebagai dipegang untuk matang apabila Pihak Berkuasa mempunyai niat positif dengan keupayaan untuk memegang sehingga matang. Selepas pengukuran awal, dipegang hingga matang pelaburan 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 Lebihan atau Kurangan.

- **Penyahiktirafan Aset Kewangan**

  Aset Kewangan dinyahiktiraf apabila hak kontrak untuk aliran tunai daripada Aset Kewangan tersebut tamat tempoh atau diselesai serta Pihak Berkuasa telah memindahkan risiko dan ganjaran pemilikan Aset Kewangan yang ketara kepada pihak lain.

  Pada penyahiktiraf Aset Kewangan secara keseluruhannya, perbezaan di antara nilai dibawa dan jumlah pertimbangan diterima diiktiraf dalam Lebihan atau Kurangan dalam tempoh penyahiktiraf.

(f) 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 tiga (3) bulan dan kurang dari tarikh pelaburan dan sedia ditukar dalam bentuk tunai dengan risiko perubahan nilai yang rendah.

(g) Pelaburan Jangka Pendek

Pelaburan berjangka pendek yang mempunyai kecairan tinggi dengan tempoh matang lebih tiga (3) bulan dan sehingga setahun dari tarikh pelaburan dan sedia ditukar dalam bentuk tunai dengan risiko perubahan nilai yang rendah.

(h) Liabiliti Kewangan

Liabiliti Kewangan diiktiraf dalam Penyata Kedudukan Kewangan apabila Pihak Berkuasa 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 mengisu 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 dan Pinjaman Belum Bayar.

Pihak Berkuasa mempunyai kategori Liabiliti Kewangan seperti berikut:

- **Belum Bayar**

  Selepas pengiktirafan awal, Belum Bayar adalah diukur pada kos dilunaskan menggunakan kaedah faedah berkesan. Keuntungan atau kerugian diiktiraf di dalam Lebihan atau Kurangan apabila Liabiliti Kewangan dinyahiktiraf atau dirosot nilai.

  Kaedah faedah berkesan adalah kaedah untuk mengira kos dilunaskan Liabiliti Kewangan dan untuk memperuntukkan perbelanjaan faedah ke atas tempoh yang berkaitan. Kadar faedah berkesan adalah kadar diskaun anggaran pembayaran tunai masa depan yang tepat menerusi jangka hayat Liabiliti Kewangan atau apabila sesuai, tempoh yang lebih singkat dengan nilai dibawa Liabiliti Kewangan tersebut.

- **Wang Jaminan Pelaksanaan (WJP)**

  Wang Jaminan Pelaksanaan (WJP) ialah satu kemudahan bagi menggantikan keperluan bon pelaksanaan. WJP adalah sejumlah wang yang ditahan semasa projek sedang dilaksana dan direkodkan pada kos bagi memastikan kontraktor mematuhi dan melaksanakan obligasinya di bawah kontrak yang ditandatangani. Bayaran balik untuk WJP akan dibuat apabila projek telah siap dilaksanakan berserta laporan yang telah disahkan.

- **Penyahiktirafan Liabiliti Kewangan**

  Liabiliti Kewangan dinyahiktiraf apabila obligasi yang dinyatakan dalam kontrak telah dilepaskan, dibatalkan atau tamat hayat.

  Sebarang perbezaan di antara nilai dibawa Liabiliti Kewangan yang dinyahiktiraf dan pertimbangan dibayar adalah diiktiraf di dalam Lebihan atau Kurangan dalam tempoh penyahiktirafan.

(i) Manfaat Pekerja

- **Manfaat Jangka Pendek**

  Gaji, bonus dan lain-lain faedah yang diterima oleh pekerja diiktiraf sebagai perbelanjaan dalam tempoh di mana perkhidmatan berkaitan diberikan oleh pekerja Pihak Berkuasa.

- **Manfaat Jangka Panjang**

  Pengumpulan jangka panjang ganjaran ketidakhadiran seperti cuti tahunan berbayar akan diambil kira apabila perkhidmatan telah diberikan oleh pekerja yang mana telah meningkatkan hak mereka (pekerja yang memohon sahaja) ke atas ganjaran ketidakhadiran di masa hadapan.

  Pengiraan Gantian Cuti Rehat (GCR) Pihak Berkuasa dikira dengan menggunakan kaedah *projected unit credit* di mana ia melibatkan beberapa andaian seperti gaji akhir di gred jawatan semasa serta jumlah maksima GCR yang dikumpul sebanyak 150 hari (tertakluk kepada maksima 15 hari baki cuti setiap tahun sahaja) dan baki tempoh perkhidmatan sebelum bersara. Skim GCR ini adalah tidak mandatori dan peruntukan pengiraan GCR hanya dibuat ke atas pekerja yang memohon dan telah disahkan jawatan secara tetap. Pengiraan ini diperolehi selepas mendiskaunkan jumlah pembayaran GCR dengan menggunakan kadar diskaun tertentu. Namun, Pihak Berkuasa berhak untuk melaksanakan manfaat ini tertakluk kepada kedudukan kewangan Pihak Berkuasa.

  Andaian utama yang digunakan dalam pengiraan peruntukan GCR tahun semasa adalah seperti berikut:

Kadar Diskaun	4%
Kadar Kenaikan Gaji Setahun	5.0%
Maksima Umur Persaraan Sebenar	58 Tahun

- **Pelan Caruman Tetap**

  Menurut peruntukan perundangan, Badan Berkanun Persekutuan di Malaysia perlu membayar caruman kepada Pertubuhan Keselamatan Sosial, Kumpulan Wang Amanah Persaraan dan Kumpulan Wang Simpanan Pekerja. Perbelanjaan tersebut diiktiraf sebagai perbelanjaan semasa di dalam Penyata Prestasi Kewangan apabila ianya tertanggung.

(j) Cukai

Perbelanjaan cukai pendapatan berhubung dengan cukai ke atas pendapatan faedah dan sewa diperoleh dalam tahun kewangan. Semua pendapatan lain dikecualikan daripada cukai memandangkan Pihak Berkuasa dikecualikan cukai di bawah Seksyen 127(3A) Akta Cukai Pendapatan, 1967.

Pihak Berkuasa mendapat Pengecualian Cukai Pendapatan (PCP) ke atas pemberian atau subsidi (*geran*) dan pendapatan pihak berkuasa berkanun berdasarkan kepada PCP (Pengecualian) (No 4) 2003 berkuat kuasa mulai tahun taksiran 2002 hingga 2005 dan diganti dengan PCP (Pengecualian) (No 22) 2006 berkuat kuasa mulai tahun taksiran 2006.

(k) Rosot Nilai Aset Kewangan

Pada akhir setiap tempoh pelaporan, Pihak Berkuasa akan menilai sama ada terdapat sebarang bukti objektif bahawa Aset Kewangan perlu untuk dirosot nilai. Bukti objektif termasuk:

- Kesukaran kewangan yang ketara oleh peminjam;
- Pembayaran tertunggak;
- Kemungkinan bahawa peminjam akan muflis; atau
- Data yang menunjukkan bahawa terdapat penurunan di dalam anggaran aliran tunai masa depan.

Bagi kategori Aset Kewangan yang diukur pada kos dilunaskan, jika tiada bukti objektif wujud bagi individu yang ketara, maka semua aset dalam kumpulan yang mempunyai ciri-ciri risiko yang serupa tidak kira sama ada ia ketara atau tidak, akan dinilai secara kolektif untuk menentukan sama ada ia perlu dibuat rosot nilai.

Kerugian rosot nilai, berhubung dengan Aset Kewangan yang diukur pada kos dilunaskan, diukur sebagai perbezaan di antara nilai dibawa aset berkenaan dan nilai semasa anggaran aliran tunai yang didiskaunkan pada kadar faedah berkesan yang asal. Nilai dibawa aset tersebut akan dikurangkan melalui penggunaan akaun elaun. Sebarang kerugian rosot nilai diiktiraf dalam Penyata Prestasi Kewangan dengan serta-merta. Jika, dalam tempoh kemudiannya, sebarang amaun kerugian rosot nilai menurun, kerugian rosot nilai yang diiktiraf sebelumnya akan dibalikkan secara langsung dalam akaun elaun. Pembalikan ini diiktiraf dalam Penyata Prestasi Kewangan dengan serta-merta.

(l) Rosot Nilai Aset Bukan Kewangan

Nilai bawaan Hartanah, Loji dan Peralatan disemak semula untuk menentukan sama ada terdapatnya sebarang petunjuk kemerosotan. Kemerosotan diukur dengan membandingkan nilai bawaan aset dengan jumlah boleh diperolehi semula. Kerugian kemerosotan diiktiraf sebagai Perbelanjaan dalam Penyata Prestasi Kewangan dengan serta merta.

Peningkatan jumlah boleh diperolehi semula aset yang berikutnya dianggap sebagai penerbalikan kerugian kemerosotan sebelum ini dan diiktiraf sehingga tahap nilai bawaan aset yang akan ditentukan (bersih daripada pelunasan dan susut nilai) sekiranya tiada kerugian kemerosotan diiktiraf. Penerbalikan diiktiraf dalam Penyata Prestasi Kewangan dengan serta merta.

Aset Bukan Kewangan yang tertakluk kepada pelunasan akan disemak untuk penjejasan apabila peristiwa atau berlaku perubahan pada keadaan yang menunjukkan nilai dibawa berkemungkinan tidak akan diperolehi.

- **Aset Penjanaan Tunai**

  Pada setiap tarikh Penyata Kedudukan Kewangan, Pihak Berkuasa mengkaji semula nilai dibawa bagi aset-asetnya untuk menentukan sama ada terdapat sebarang petunjuk kemerosotan nilai. Jika sebarang petunjuk wujud, 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 didiskaun kepada nilai semasanya menggunakan kadar diskaun sebelum cukai yang menggambarkan nilai pasaran semasa nilai mata 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 Lebihan atau Kurangan serta merta apabila nilai dibawa aset melebihi amaun boleh pulihnya.

- **Aset Penjanaan Bukan Tunai**

  Pihak Berkuasa akan menilai pada setiap tarikh pelaporan sama ada terdapat petunjuk bahawa aset penjanaan bukan tunai mungkin terjejas. Jika sebarang petunjuk wujud, maka Pihak Berkuasa 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 Lebihan atau Kurangan serta merta apabila nilai dibawa aset melebihi jumlah perkhidmatan boleh pulihnya.

  Dalam menentukan nilai dalam penggunaan, Pihak Berkuasa telah mengguna pakai pendekatan kos penggantian yang disusut nilai. Di bawah 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 bagi menentukan 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 mengikat atau pasaran aktif bagi aset, Pihak Berkuasa 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, Pihak Berkuasa 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 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 Lebihan atau Kurangan.

(m) Peruntukan

Peruntukan merujuk kepada obligasi perundangan atau komitmen konstruktif berpunca daripada peristiwa lampau yang ada kecenderungan berlakunya aliran keluar sumber ekonomi atau potensi perkhidmatan untuk melunaskan obligasi tersebut. Anggaran jumlah aliran keluar tersebut mestilah boleh dibuat dengan objektif.

Bagi obligasi atau komitmen yang diperuntukan pembayaran balik (diinsurankan), pembayaran balik tersebut akan diiktiraf sebagai aset yang berasingan dengan syarat pembayaran balik tersebut benar-benar dapat dipastikan.

Peruntukan-peruntukan ini akan dikaji semula pada setiap tarikh Penyata Kedudukan Kewangan dan diselaraskan untuk menggambarkan anggaran semasa yang terbaik. Di mana kesan nilai semasa wang adalah material, jumlah peruntukan adalah nilai kini perbelanjaan yang dijangka akan diperlukan untuk menyelesaikan obligasi tersebut.

(n) Pertimbangan Perakaunan Kritikal dan Sumber Utama Ketidakpastian Anggaran

- **Pertimbangan Perakaunan Kritikal**

  Tiada sebarang pertimbangan perakaunan kritikal yang mempunyai kesan ketara ke atas jumlah yang diiktiraf di dalam Penyata Kewangan.

- **Sumber Utama Ketidakpastian Anggaran**

  Anggaran utama berkenaan masa hadapan, dan lain-lain sumber utama ketidakpastian anggaran pada tarikh pelaporan, yang mempunyai risiko ketara yang akan menyebabkan pelarasan penting terhadap nilai dibawa Aset dan Liabiliti di dalam tahun kewangan seterusnya adalah seperti berikut:

  - Perubahan Anggaran Jangka Hayat bagi Hartanah, Loji dan Peralatan

    Semua Hartanah, Loji dan Peralatan disusut nilai 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.

  - Pengukuran Peruntukan

    Pihak Berkuasa sentiasa menggunakan anggaran terbaik sebagai asas untuk mengukur sesuatu peruntukan itu. Anggaran itu dibuat berdasarkan kepada pengalaman lalu, lain-lain petunjuk atau andaian, perkembangan terkini dan peristiwa masa hadapan yang munasabah dalam menentukan sesuatu peruntukan.

3. TUNAI DAN KESETARAAN TUNAI

Tunai dan Kesetaraan Tunai pada akhir tahun kewangan terdiri daripada:

	2024 RM	2023 RM
Tunai di Tangan	5,000	5,000
Tunai di Bank	3,899,593	28,335,967
Deposit Jangka Pendek	10,000,000	-
	13,904,593	**28,340,967**

4. PELABURAN JANGKA PENDEK

Kadar faedah bagi deposit simpanan tetap dengan bank berlesen ialah antara 3.85% hingga 4.28% setahun (2023: antara 4.05% hingga 4.60% setahun). Tempoh matang deposit simpanan tetap adalah antara melebihi tiga (3) bulan hingga dua belas (12) bulan. Deposit simpanan tetap dengan bank-bank berlesen seperti berikut:

	2024 RM	2023 RM
MBSB Bank Berhad	2,000,000	-
CIMB Islamic Bank Berhad	-	16,000,000
Koperasi Co-opbank Pertama Malaysia Berhad	-	7,000,000
RHB Bank Berhad	10,000,000	-
SME Development Bank Malaysia Berhad	27,000,000	83,300,000
Bank Pembangunan Malaysia Berhad	18,000,000	35,300,000
Bank Kerjasama Rakyat Malaysia Berhad	56,000,000	-
Bank Simpanan Nasional Berhad	5,000,000	-
	118,000,000	**141,600,000**

5. URUS NIAGA PERTUKARAN BELUM TERIMA

	2024 RM	2023 RM
Akaun Belum Terima	2,082,441	2,734,619
Faedah Belum Terima	2,223,005	1,322,273
Deposit dan Prabayar	255,185	14,584
	4,560,631	**4,071,477**

(a) Akaun Belum Terima

Akaun Belum Terima tidak dikenakan faedah dan secara umumnya tempoh yang terlibat ialah dari tiga puluh (30) hari ke dua belas (12) bulan (2023: dari tiga puluh (30) hari ke dua belas (12) bulan). Akaun Belum Terima diiktiraf pada Nilai Saksama semasa pengiktirafan awal. Amaun dijangka boleh pulih dalam masa dua belas (12) bulan, akan diiktiraf pada amaun invois asal. Jika tidak, ia akan diiktiraf pada Nilai Kini amaun invois asal. Akaun Belum Terima didenominasi dalam Ringgit Malaysia. Analisis pengumuran Akaun Belum Terima (pada Amaun Kasar) adalah seperti berikut:

	2024 RM	2023 RM
Tidak melebihi tempoh dan tidak terjejas	2,046,865	2,709,419
1 hingga 3 bulan	35,576	-
3 hingga 6 bulan	-	-
6 hingga 12 bulan	-	25,200
Lebih 12 bulan	-	-
	2,082,441	2,734,619

Penumpuan Risiko Kredit adalah terhad dan ianya tidak dilakukan.

(b) Pendahuluan Kakitangan

Pecahan pada akhir tahun kewangan adalah seperti berikut:

	2024 RM	2023 RM
Pendahuluan Kakitangan	1,581	-

Risiko Kredit ke atas Pendahuluan Kakitangan adalah kecil kerana amaun yang tertunggak boleh dipulihkan secara bulanan melalui potongan gaji.

6. HARTANAH, LOJI DAN PERALATAN

	Tanah	Bangunan	Perabot, Kelengkapan dan Ubah suai	Komputer dan Sistem Aplikasi	Kenderaan Bermotor	Elektronik	Jumlah
	RM	RM	RM	RM	RM	RM	RM
Kos							
Pada 1 Januari 2024	-	-	3,923,503	2,342,141	1,314,803	217,563	7,798,010
Tambahan	4,704,150	18,785,510	-	-	-	-	23,489,660
Pelupusan	-	-	(10,350)	(1,695,971)	(173,515)	(8,975)	(1,888,811)
Pada 31 Disember 2024	**4,704,150**	**18,785,510**	**3,913,153**	**646,170**	**1,141,288**	**208,588**	**29,398,859**
Susut Nilai Terkumpul							
Pada 1 Januari 2024	-	-	3,813,494	2,143,032	700,144	172,265	6,828,935
Tambahan	-	-	40,987	113,853	179,699	12,848	347,388
Pelupusan	-	-	(8,106)	(1,695,971)	(173,515)	(8,975)	(1,886,567)
Pada 31 Disember 2024	**-**	**-**	**3,846,375**	**560,914**	**706,328**	**176,138**	**5,289,756**
Nilai Bawaan	**4,704,150**	**18,785,510**	**66,777**	**85,256**	**434,960**	**32,450**	**24,109,103**
Kos							
Pada 1 Januari 2023	-	-	4,069,057	3,067,092	1,138,387	232,003	8,506,539
Tambahan	-	-	59,780	15,460	176,416	2,100	253,756
Pelupusan	**-**	**-**	(205,334)	(740,411)	-	(16,540)	(962,285)
Pada 31 Disember 2023	**-**	**-**	**3,923,503**	**2,342,141**	**1,314,803**	**217,563**	**7,798,010**
Susut Nilai Terkumpul							
Pada 1 Januari 2023	-	-	3,972,514	2,731,898	514,285	165,468	7,384,165
Tambahan	-	-	46,314	151,545	185,859	23,337	407,055
Pelupusan	**-**	**-**	(205,334)	(740,411)	-	(16,540)	(962,285)
Pada 31 Disember 2023	**-**	**-**	**3,813,494**	**2,143,032**	**700,144**	**172,265**	**6,828,935**
Nilai Bawaan	**-**	**-**	**110,009**	**199,109**	**614,659**	**45,298**	**969,075**

7. ASET TAK KETARA

	Sistem E-FiT	Sistem Fingertips	Sistem SAGA	Sistem Email	Sistem Microsoft 365	Sistem Attendance	Sistem Online Monitoring Cloud Platform	Sistem BEDOS 2.0	Sistem NEM	STAR	Jumlah
	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Kos											
Pada 1 Januari 2024	5,185,735	-	606,720	141,657	48,400	-	130,000	19,800	49,900	280,370	6,462,582
Tambahan	-	-	43,200	-	-	-	-	-	-	-	43,200
Pelupusan	-	-	-	-	-	-	-	-	-	-	-
Pada 31 Disember 2024	**5,185,735**	**-**	**693,120**	**141,657**	**48,400**	**-**	**130,000**	**19,800**	**49,900**	**280,370**	**6,548,982**
Susut Nilai Terkumpul											
Pada 1 Januari 2024	5,185,734	-	217,367	69,434	29,033	-	13,839	1,991	10,635	3,037	5,541,070
Tambahan	-	-	66,748	14,166	4,840	-	13,000	1,980	4,990	28,037	133,760
Pelupusan	-	-	-	-	-	-	-	-	-	-	-
Pada 31 Disember 2024	**5,185,734**	**-**	**284,115**	**83,600**	**43,873**	**-**	**26,838**	**3,970**	**15,625**	**31,074**	**5,674,830**
Nilai Bawaan	**1**	**-**	**365,805**	**58,057**	**4,527**	**-**	**103,162**	**15,830**	**34,275**	**249,296**	**830,952**
Kos											
Pada 1 Januari 2023	5,185,735	143,000	533,580	141,657	48,400	19,500	130,000	19,800	49,900	-	6,271,572
Tambahan	-	-	73,140	-	-	-	-	-	-	280,370	353,510
Pelupusan	-	(143,000)	-	-	-	(19,500)	-	-	-	-	(162,500)
Pada 31 Disember 2023	**5,185,735**	**-**	**606,720**	**141,657**	**48,400**	**-**	**130,000**	**19,800**	**49,900**	**280,370**	**6,462,582**
Susut Nilai Terkumpul											
Pada 1 Januari 2023	5,185,734	88,183	163,812	55,269	34,194	6,177	839	11	5,645	-	5,539,863
Tambahan	-	11,917	53,555	14,166	4,840	1,625	13,000	1,980	4,990	3,037	97,192
Pelupusan	-	(100,100)	-	-	-	(7,801)	-	-	-	-	(95,985)
Pada 31 Disember 2023	**5,185,734**	**-**	**217,367**	**69,434**	**39,033**	**-**	**13,839**	**1,991**	**10,635**	**3,037**	**5,541,070**
Nilai Bawaan	**1**	**-**	**389,353**	**72,223**	**9,367**	**-**	**116,161**	**17,809**	**39,265**	**277,333**	**921,512**

8. ASET DALAM PEMBINAAN

Pihak Berkuasa telah membuat pembelian satu (1) unit bangunan pejabat 4 tingkat dengan status tanah pegangan kekal di Lot 33086, Mukim Dengkil, Daerah Sepang, Selangor Darul Ehsan di alamat Blok 3517, Jalan Teknokrat 5, Cyber 5, 63000 Cyberjaya, Selangor daripada Cyberview Sdn Bhd selaras kelulusan Mesyuarat Anggota Pihak Berkuasa Pembangunan Tenaga Lestari (APBPTL) Bil. 6/2021 dan Kementerian Kewangan pada 6 September 2022. Pembelian bangunan ini telah diselesaikan pada 25 Julai 2024, oleh itu Aset Dalam Pembinaan telah dipindahkan kepada Hartanah, Loji Dan Peralatan dalam tahun 2024 sebagai kategori Tanah dan Bangunan.

Seterusnya Pihak Berkuasa telah memulakan proses awal ubahsuai bangunan pejabat tersebut merangkumi pelantikan perunding teknikal, pengurus projek dan perunding hiasan dalaman. Proses ubahsuai ini dijangka selesai pada suku keempat tahun 2025. Kos yang diiktiraf dalam tahun 2024 ini direkodkan sebagai Aset Dalam Pembinaan berjumlah RM263,044.

9. URUS NIAGA PERTUKARAN BELUM BAYAR

	2024 RM	2023 RM
Akaun Belum Bayar	413,837	2,038,361
Wang Jaminan Pelaksanaan	1,295,118	-
Terakru	5,064,213	2,261,160
	6,773,169	**4,299,521**

Wang Jaminan Pelaksanaan tidak dikenakan faedah dan pada kebiasaannya dibayar setelah tamat tempoh jaminan pelaksanaan. Akaun Belum Bayar dan Belum Bayar Lain adalah tidak dikenakan faedah dan pada kebiasaannya diselesaikan atas terma 30 hari.

(a) Akaun Belum Bayar

Akaun Belum Bayar didenominasi dalam Ringgit Malaysia. Analisis pengumuran Akaun Belum Bayar (pada Amaun Kasar) adalah seperti berikut:

	2024 RM	2023 RM
Tidak melebihi tempoh dan tidak terjejas	386,227	667,677
1 hingga 3 bulan	-	-
3 hingga 6 bulan	-	785,380
6 hingga 12 bulan	-	4,489
Lebih 12 bulan	27,610	580,815
	413,837	2,038,361

(b) Wang Jaminan Pelaksanaan

Projek	2024 RM
Pemasangan Sistem Solar di Bangunan Kerajaan	1,202,408
Study With Focus On Hydrological Study On Hydro Potential In Peninsular Malaysia	92,710
Jumlah	**1,295,118**

10. MANFAAT PEKERJA JANGKA PANJANG

Manfaat Pekerja Jangka Panjang merupakan peruntukan Gantian Cuti Rehat (GCR) yang merujuk kepada manfaat persaraan yang membenarkan kakitangan mengumpul cuti tahunan yang boleh ditukarkan kepada wang tunai di mana bayaran sekaligus dibuat pada tarikh persaraan sebenar (58 tahun) atau lebih awal melalui persaraan pilihan bermula 50 tahun. Peruntukan tahun semasa GCR adalah seperti berikut:

	2024 RM	2023 RM
Baki awal tahun	122,731	17,516
Peruntukan tahun semasa	93,106	66,209
Peruntukan tahun terdahulu terkurang nyata	-	39,006
	215,837	**122,731**

11. GERAN TERTUNDA

	2024 RM	2023 RM
Pada 1 Januari	101,109,694	33,618,572
Terimaan Geran	71,438,784	81,770,653
Pelunasan Geran	(96,883,321)	(14,279,531)
Pada 31 Disember	**75,665,156**	**101,109,694**

(a) Baki Geran Tertunda pada 31 Disember 2024 adalah seperti berikut:

	2024 RM	2023 RM
Geran Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA)	666,000	701,283
Geran *Renewable Energy Business Facility* (REBF)	9,219,905	9,691,250
Geran *MySuria*	376,169	434,637
Geran *Government Lead By Example* (GLBE)	2,037,789	2,086,929
Geran Pemasangan Sistem Solar di Bangunan Kerajaan	35,067,883	57,600,000
Geran Kampung Angkat MADANI	2,500,000	-
Geran Mesyuarat ASEAN	163,485	-
Geran Audit Tenaga Bersyarat RMK-11	1,881,781	1,881,781
Geran Audit Tenaga Bersyarat RMK-12	18,453,707	13,875,893
Geran Kerajaan Negeri Selangor - Teknologi Hijau	-	41,600
Geran Program *Sustainability Achieved Via Energy Efficiency* (SAVE)	1,157,572	1,219,031
Geran Program SAVE 3.0 (AAIBE)	-	31,115
Geran Program SAVE 4.0 (AAIBE)	1,141,722	7,083,014
Geran *Building Energy Data Online Monitoring System* (BEDOS)	137,032	-
Geran Kumpulan Wang Tenaga Boleh Baharu	-	2,255,673
Geran *ROM TNB Enhancement*	422,235	431,573
Geran *Green Technology Application For The Development of Low Carbon Cities*	1,234,245	1,458,005
Geran Retrofit Kecekapan Tenaga	1,205,632	2,317,910
JUMLAH	**75,665,156**	**101,109,694**

(b) Perbezaan jumlah Terimaan Geran berbanding jumlah Hasil Pelunasan Urus Niaga Bukan Pertukaran (Nota 13) berjumlah RM1,380,268 kerana Pihak Berkuasa mengiktiraf hasil pengurusan projek di bawah kategori Hasil Urus Niaga Pertukaran (Lain-Lain Hasil Dari Perkhidmatan Yang Diberi) bagi Audit Tenaga Bersyarat RMK-12, projek *Green Technology Application for The Development of Low Carbon Cities* (GTALCC) dan Geran Selangor – Teknologi Hijau selaras kelulusan yang telah diterima seperti butiran berikut:

Projek	RM	Butiran
RMK-12	1,220,000	Hasil Pengurusan Projek
GTALCC	138,583	Hasil Pengurusan Projek
Geran Selangor – Teknologi Hijau	21,685	Hasil Pengurusan Projek
	1,380,268	

12. URUS NIAGA PERTUKARAN

Pendapatan yang diterima oleh Pihak Berkuasa adalah wang yang didapati daripada fi yang dibayar kepada Pihak Berkuasa, yuran latihan yang dianjurkan, jualan borang serta buku latihan, faedah simpanan pasaran wang jangka pendek, hibah bank seperti yang diperuntukkan di bawah Akta Pihak Berkuasa Pembangunan Tenaga Lestari 2011 [Akta 726] dan Akta Tenaga Boleh Baharu 2011 [Akta 725].

	2024 RM	2023 RM
Fi Pentadbiran Tarif Galakan (FiT)	12,388,428	13,644,888
Fi Permohonan dan Pemprosesan Tarif Galakan (FiT)	432,749	1,681,856
Fi e-Bidding Pemegang Tarif Galakan	364,340	36,000
Fi Permohonan dan Pemprosesan *Net Energy Metering* (NEM)	6,250,204	4,682,531
Fi Permohonan *Registered Solar PV Investor / Registered Solar PV Service Provider* (RPVI/ RPVSP)	2,116,000	1,686,400
Fi Latihan	1,582,247	1,259,986
Jualan Buku Latihan dan Dokumen Tender	62,183	41,830
Hasil Dari Perkhidmatan Yang Diberi	1,559,831	1,885,612
Faedah Diterima Daripada Pelaburan	5,182,435	3,805,862
Hibah Bank	936,081	963,451
Hasil Dari Pelupusan Aset	33,000	1,500
	30,907,496	**29,689,916**

13. URUS NIAGA BUKAN PERTUKARAN

Merupakan hasil pelunasan Geran Kumpulan Wang Pembangunan Bersyarat.

	2024 RM	2023 RM
Geran Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA)	35,283	26,976
Geran Program *MySuria*	58,468	7,650
Geran *Government Lead By Example* (GLBE)	49,140	5,114
Geran *Renewable Energy Business Facility* (REBF)	471,345	308,750
Geran Audit Tenaga Bersyarat RMK-11	-	45,000
Geran Audit Tenaga Bersyarat RMK-12	8,112,186	6,265,688
Geran Program *Sustainability Achieved Via Energy Efficiency* (SAVE)	92,574	736,726
Geran TNB *ROM Enhancement*	9,338	30,030
Geran *Green Technology Application for the Development of Low Carbon Cities*	85,177	402,419
Geran Program SAVE 3.0 (AAIBE)	31,115	592,279
Geran Pelan Komunikasi FiT	2,255,673	418,235
Geran Program SAVE (BANJIR)	-	81,400
Geran Retrofit Kecekapan Tenaga	2,162,278	1,019,623
Geran *International Sustainable Energy Summit* (ISES)	-	2,463,653
Geran Pemasangan Sistem Solar di Bangunan Kerajaan	22,532,117	-
Hasil Geran Mesyuarat ASEAN	36,515	-
Hasil Geran Santuni MADANI	48,000	-
Geran *Government of Selangor* - Teknologi Hijau	19,915	-
Geran Program SAVE 4.0 (AAIBE)	59,472,516	-
Geran *Building Energy Data Online Monitoring System* (BEDOS)	31,413	-
	95,503,053	**12,403,543**

14. ANGGOTA PENGURUSAN UTAMA

Anggota pengurusan utama adalah mereka yang mempunyai kuasa dan tanggungjawab untuk perancangan, arahan dan kawalan ke atas aktiviti Pihak Berkuasa sama ada secara langsung atau tidak langsung.

Bilangan anggota pengurusan utama Pihak Berkuasa ialah 10 orang (2023: 10 orang).

Pembayaran untuk anggota pengurusan utama adalah seperti berikut:

	2024 RM	2023 RM
Anggota Pihak Berkuasa	605,352	458,666
	605,352	**458,666**

15. UPAH, GAJI DAN MANFAAT PEKERJA

	2024 RM	2023 RM
Gaji dan Upah	9,193,182	8,079,104
Elaun/Manfaat Tetap	1,241,827	838,277
Sumbangan Berkanun Untuk Kakitangan	2,246,032	1,686,775
Bayaran Lebih Masa	75,395	61,157
Manfaat Kewangan Lain	272,835	382,400
	13,029,271	**11,047,713**

Upah, Gaji dan Manfaat Pekerja yang diterima oleh kakitangan Pihak Berkuasa adalah seperti yang termaktub di dalam Akta 726. Upah, Gaji dan Manfaat Pekerja adalah termasuk pembayaran kepada Ketua Pegawai Eksekutif.

16. BEKALAN DAN BAHAN GUNA HABIS

	2024 RM	2023 RM
Perbelanjaan Perjalanan dan Sara Hidup	812,503	1,065,079
Perhubungan dan Utiliti	114,581	108,491
Bahan-Bahan Makanan dan Minuman	140,364	111,426
Bekalan Bahan Mentah dan Bahan-Bahan Untuk Penyelenggaraan dan Pembaikan	22,975	16,525
Bekalan dan Bahan Lain	819,340	495,878
Perkhidmatan Ikhtisas dan Perkhidmatan Lain dan Hospitaliti	2,400,008	2,818,123
	4,309,771	**4,615,522**

17. BELANJA SEWAAN DAN PENYELENGGARAAN

	2024 RM	2023 RM
Sewaan	2,363,543	2,118,638
Penyelenggaraan	629,481	520,067
	2,993,024	**2,638,705**

18. BELANJA SUSUT NILAI DAN PELUNASAN

	2024 RM	2023 RM
Belanja Susut Nilai		
Perabot, Kelengkapan dan Ubah suai	40,987	46,314
Komputer dan Sistem Aplikasi	113,853	151,545
Kenderaan Bermotor	179,699	185,859
Elektronik	12,848	23,337
Jumlah Belanja Susut Nilai	**347,388**	**407,055**
Pelunasan Aset Tak Ketara		
Sistem *FingerTips*	-	11,916
Sistem SAGA	66,748	53,554
Sistem *Email*	14,166	14,166
Sistem *Microsoft 365*	4,840	4,840
Sistem *Attendance*	-	1,625
Sistem NEM	4,990	4,990
Sistem *Online Monitoring Cloud Platform*	13,000	13,000
Sistem BEDOS 2.0	1,980	1,980
Sistem STAR	28,037	3,037
Jumlah Pelunasan Aset Tak Ketara	**133,760**	**109,108**
Jumlah Susut Nilai Dan Pelunasan	**481,147**	**516,163**

19. GERAN DAN PINDAHAN BAYARAN LAIN

Merupakan belanja pelunasan Geran Kumpulan Wang Pembangunan.

	2024 RM	2023 RM
Geran Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA)	-	8,550
Geran Program *MySuria*	58,468	7,650
Geran *Government Lead By Example* (GLBE)	49,140	5,115
Geran *Renewable Energy Business Facility* (REBF)	471,345	308,750
Geran Audit Tenaga Bersyarat RMK-11	-	45,000
Geran Audit Tenaga Bersyarat RMK-12	8,112,186	6,265,688
Geran Program *Sustainability Achieved Via Energy Efficiency* (SAVE)	92,574	112,740
Geran *TNB ROM Enhancement*	9,338	30,030
Geran *Green Technology Application for the Development of Low Carbon Cities*	85,177	402,419
Geran Program SAVE 3.0 (AAIBE)	31,115	592,279
Geran Program SAVE 4.0 (AAIBE)	59,472,516	623,986
Geran Kumpulan Wang Tenaga Boleh Baharu	2,255,673	418,235
Geran Program Rebat Pembelian Peralatan Elektrik	-	81,400
Geran Retrofit Kecekapan Tenaga	2,162,278	1,019,624
Geran *International Sustainable Energy Summit* (ISES)	-	2,463,653
Geran *Government of Selangor* - Teknologi Hijau	19,915	-
Belanja Geran Mesyuarat ASEAN	36,515	-
Belanja Geran Santuni MADANI	48,000	-
Geran *Building Energy Data Online Monitoring System* (BEDOS)	31,413	-
Geran Pemasangan Sistem Solar di Bangunan Kerajaan	22,532,117	-
	95,467,770	**12,385,118**

Pihak Berkuasa telah menggunakan Geran KeTTHA untuk pembelian kereta elektrik Model BYD ATTO 3 dan direkodkan sebagai Aset Alih Pihak Berkuasa. Oleh itu, terdapat perbezaan antara Hasil Pelunasan Geran (Nota 13) berbanding Belanja Pelunasan Geran sebanyak RM35,283 kerana hanya jumlah susut nilai direkodkan di Belanja Pelunasan Geran.

20. PERBELANJAAN LAIN

	2024 RM	2023 RM
Sumbangan	2,953,659	870,828
Manfaat Jangka Panjang	93,106	105,216
Kurangan Pelupusan Aset	2,244	54,599
Pelbagai	92,129	83,863
	3,141,138	**1,114,506**

Perbelanjaan Sumbangan adalah termasuk peruntukan bayaran sumbangan kepada Kumpulan Wang Disatukan Persekutuan (KWDP) bagi tahun 2024 berjumlah RM2,795,120 berdasarkan 30 peratus daripada lebihan pendapatan bagi tahun kewangan berakhir 31 Disember 2023 selaras surat Kementerian Kewangan bertarikh 22 Oktober 2024 dan 28 Mac 2025.

21. CUKAI

Tiada pengecualian cukai pendapatan daripada pihak Kementerian Kewangan bagi tahun taksiran 2024.

Namun, tiada peruntukan cukai dikenakan ke atas Pihak Berkuasa kerana berdasarkan pengiraan Cukai Pendapatan, Pihak Berkuasa mempunyai kerugian dan elaun modal yang belum diserap dan boleh digunakan dalam tahun semasa.

Penyelarasan bagi perbelanjaan cukai pendapatan yang berkaitan dengan keuntungan sebelum cukai pada kadar cukai pendapatan berkanun kepada perbelanjaan cukai pendapatan pada kadar cukai efektif ke atas Pihak Berkuasa adalah seperti berikut:

	2024 RM	2023 RM
Lebihan bagi tahun sebelum cukai	6,383,076	9,317,066
Cukai yang dikenakan pada kadar 24%	1,531,938	2,236,096
Kesan cukai ke atas:		
Perbelanjaan tidak ditolak untuk tujuan cukai	23,765,210	3,235,815
Pendapatan tidak dikenakan cukai	(29,782,087)	(8,955,993)
Aset cukai tertunda tidak diiktiraf	4,484,939	3,484,082
Perbelanjaan cukai	**-**	**-**

Perbelanjaan cukai pendapatan berhubung dengan cukai ke atas pendapatan faedah diperoleh dalam tahun kewangan. Semua pendapatan lain dikecualikan daripada cukai memandangkan Pihak Berkuasa dikecualikan cukai di bawah Seksyen 127(3A) Akta Cukai Pendapatan, 1967.

Pihak Berkuasa mendapat Pengecualian Cukai Pendapatan (PCP) ke atas pemberian atau subsidi *(grant)* dan pendapatan pihak berkuasa berkanun berdasarkan kepada PCP (Pengecualian) (No 4) 2003 berkuat kuasa mulai tahun taksiran 2002 hingga 2005 dan diganti dengan PCP (Pengecualian) (No 22) 2006 berkuat kuasa mulai tahun taksiran 2006.

Aset cukai tertunda tidak diiktiraf untuk perbezaan sementara kerana berkemungkinan manfaatnya tidak digunakan pada masa hadapan. Keuntungan bercukai boleh digunakan untuk perbezaan sementara boleh ditolak, tidak diserap elaun modal dan kerugian cukai yang tidak digunakan boleh digunakan sebagai aliran keuntungan masa hadapan. Walau bagaimanapun, kerugian cukai yang tidak digunakan dan elaun modal yang tidak diserap boleh dibawa ke hadapan.

22. NOTA KEPADA PENYATA ALIRAN TUNAI

Angka Perbandingan

	Seperti yang dinyatakan semula 2023 RM	Seperti yang dilaporkan terdahulu 2023 RM
Aliran Tunai Bersih Daripada Aktiviti Operasi		
Terimaan Geran	81,775,038	-
Aliran Tunai Bersih Daripada Aktiviti Pembiayaan		
Terimaan Geran	-	81,775,038

Terimaan Geran diklasifikasikan dari Aktiviti Pembiayaan ke Aktiviti Operasi kerana ianya tidak termasuk di dalam senarai aktiviti pembiayaan seperti di perenggan 26 dan perenggan 30 MPSAS 2 serta selaras perenggan 22(c) di mana aliran tunai daripada aktiviti operasi sebahagian besarnya terhasil daripada aktiviti utama penjanaan tunai Pihak Berkuasa termasuklah terimaan geran atau pindahan dan peruntukan lain yang dibuat oleh Kerajaan Persekutuan atau entiti sektor awam yang lain. Oleh itu, item Terimaan Geran diklasifikasikan daripada Aktiviti Pembiayaan kepada Aktiviti Operasi kerana mengambil kira peratus keuntungan yang diperoleh melalui Terimaan Geran sebagai pendapatan Pihak Berkuasa.

23. PRESTASI BAJET

Bajet Tahun 2024 Pihak Berkuasa telah diluluskan oleh Mesyuarat Anggota Pihak Berkuasa Pembangunan Tenaga Lestari Malaysia (APBPTL) Bil. 7/2023 pada 19 Disember 2023.

Bajet yang diluluskan disediakan mengikut asas akruan bagi tempoh 1 Januari 2024 hingga 31 Disember 2024.

Perbezaan sebenar berbanding bajet 2024 diperincikan seperti berikut:

PENDAPATAN

(a) Urus Niaga Pertukaran

i) Hasil dari Fi Permohonan dan Pemprosesan NEM meningkat kepada RM6,250,204 berbanding bajet RM1,106,000 berikutan pertambahan kuota di dalam tahun 2024 iaitu 200 MW bagi NEM Rakyat dan 300 MW bagi NEM NOVA.

ii) Faedah Diterima Daripada Pelaburan meningkat kepada RM5,182,435 berbanding bajet RM3,481,700 kerana kadar faedah yang lebih baik berikutan tempoh pelaburan Simpanan Tetap dilanjutkan kepada tempoh setahun susulan pelunasan perbelanjaan geran dibuat secara berperingkat dan penundaan perbelanjaan ubahsuai pejabat Pihak Berkuasa ke tahun 2025.

iii) Fi Permohonan RPVI/RPVSP meningkat kepada RM2,116,000 berbanding bajet RM1,575,000 kerana pertambahan pendaftaran diterima susulan pengumuman kuota program NEM ditambah dan dilanjutkan sehingga bulan Jun 2025.

iv) Hasil Fi Pentadbiran Tarif Galakan (FiT) berjumlah RM12,388,428 lebih rendah berbanding bajet RM13,081,300 kerana terdapat pengurangan janaan tenaga yang dituntut oleh Pemegang Kelulusan Galakan berikutan kerosakan loji biomas.

v) Tiada hasil direkodkan untuk Fi perkhidmatan konsultansi bagi projek ISES 2024.

PERBELANJAAN

(b) Perbelanjaan Emolumen berjumlah RM13,634,623 adalah kurang berbanding bajet RM16,566,000 kerana pengisian perjawatan berlaku secara berperingkat.

(c) Bekalan dan Guna Habis merekodkan perbelanjaan RM4,309,771 berbanding bajet RM5,228,596 kerana terdapat penjimatan untuk perbelanjaan perjalanan dalam dan luar negeri, makanan dan minuman mesyuarat serta Bekalan dan Bahan lain. Selain itu, perbelanjaan untuk perkhidmatan konsultan berjumlah RM296,806 tidak digunakan dalam tahun 2024. Perbelanjaan Perkhidmatan insurans juga rendah iaitu penjimatan berjumlah RM132,771 berbanding bajet kerana tarikh kuatkuasa insurans bagi bangunan baharu Pihak Berkuasa hanya bermula pada Disember 2024 berbanding yang dibajet mulai bulan Julai 2024.

(d) Perbelanjaan Pembaikan dan Penyelenggaraan lebih rendah berbanding bajet sebanyak RM185,519 susulan penundaan proses perpindahan Pihak Berkuasa ke bangunan baharu dan penjimatan kos penyelenggaraan sistem berdasarkan perolehan sebenar.

(e) Perbelanjaan Pemberian dan Kenaan Bayaran Tetap menunjukkan lebihan belanja berbanding belanja kerana jumlah ini adalah termasuk bayaran sumbangan kepada Kumpulan Wang Disatukan Persekutuan (KWDP) untuk tahun 2024 berjumlah RM2,795,120 yang tidak diperuntukkan dalam Bajet 2024. Peruntukan perbelanjaan ini berdasarkan surat Kementerian Kewangan bertarikh 22 Oktober 2024 dan 28 Mac 2025.

(f) Pelunasan Geran

i) Geran Kementerian Tenaga Teknilogi Hijau dan Air (KeTTHA) – Perbelanjaan dibawa ke tahun 2025 susulan perpindahan bangunan baru Pihak Berkuasa ditunda.

ii) Geran *Government Lead By Example* (GLBE) – lokasi bagi pemasangan sistem solar di bangunan kerajaan masih belum dimuktamadkan. Geran ini hanya digunakan untuk membaikpulih sistem solar PV sedia ada di bangunan Kementerian Peralihan Tenaga Dan Transformasi Air (PETRA).

iii) Geran *Renewable Energy Business Facility* (REBF) – Kelulusan penggunaan Geran bergantung kepada kelulusan dari PETRA berdasarkan keperluan semasa.

iv) Geran Audit Tenaga Bersyarat RMK-11 – Pelaksanaan Geran telah diselesaikan oleh Pihak Berkuasa dan menunggu keputusan dari PETRA untuk kelulusan penggunaan baki geran.

v) Geran Audit Tenaga Bersyarat RMK-12 – Perbelanjaan adalah berdasarkan status kerja-kerja audit tenaga terhadap pemohon geran dan bayaran adalah secara berperingkat setelah kerja selesai dan disahkan oleh Pihak Berkuasa. Selain itu, pembayaran geran pada penghujung tahun 2024 hanya akan disalurkan berdasarkan 20 peratus daripada jumlah peruntukan yang diluluskan untuk setiap pemohon geran.

vi) Geran Program *Sustainability Achieved Via Energy Efficiency* (SAVE) –Perbelanjaan adalah berdasarkan keperluan semasa bagi melaksanakan program berkaitan kecekapan tenaga dan tenaga lestari selaras kelulusan.

vii) Geran *Green Technology Application for the Development of Low Carbon Cities* – Projek pemasangan *Electric Vehicle Direct Current Fast Charging Station* (EV DCFC) di Parcel F, Putrajaya telah mendapat perlanjutan tempoh projek sehingga tahun 2025.

viii) Geran Program SAVE 4.0 (AAIBE) – Jumlah bajet adalah berdasarkan anggaran baki geran tahun 2023, namun terdapat tambahan geran diterima di dalam tahun 2024 dan perbelanjaan dibuat berdasarkan baki geran tahun semasa.

ix) Geran Kumpulan Wang Tenaga Boleh Baharu - Jumlah bajet adalah berdasarkan anggaran baki geran tahun 2023, namun perbelanjaan sebenar geran tahun 2024 adalah berdasarkan baki sebenar geran. Geran ini juga telah dilunaskan sepenuhnya di dalam tahun semasa.

x) Geran Pemasangan Sistem Solar di Bangunan Kerajaan – Terdapat pertukaran dalam pemilihan lokasi bangunan milik Agensi Kerajaan oleh Kementerian Ekonomi. Proses tawaran tender bagi pelantikan kontraktor pemasangan sistem solar PV telah dimuktamadkan selepas pemilihan bangunan baharu selesai. Selain itu, terdapat penjimatan ke atas anggaran kos projek asal berbanding kos tender yang ditawarkan. Keseluruhan projek bagi bangunan yang telah dimuktamadkan dijangka akan disiapkan selewatnya pada Disember 2025.

(g) Hartanah, Loji dan Peralatan – Urusan ubahsuai bangunan pejabat baharu Pihak Berkuasa telah ditunda ke tahun 2025. Oleh itu, baki bajet Perabot, Kelengkapan dan Ubahsuai telah di bawa ke tahun 2025.

(h) Penyesuaian Lebihan Bersih

	2024 RM
Kurangan Bersih (Penyata Prestasi Bajet)	**(16,931,680)**
Tambah: Belanja Harta Modal	23,795,904
Tolak: Belanja Susut Nilai dan Pelunasan	(481,148)
Lebihan Bagi Tahun Semasa (Penyata Prestasi Kewangan)	**6,383,076**

24. OBJEKTIF DAN POLISI PENGURUSAN RISIKO KEWANGAN

Objektif Dan Polisi Pengurusan Risiko Kewangan

Polisi pengurusan risiko kewangan Pihak Berkuasa adalah untuk memastikan sumber kewangan yang mencukupi bagi perbelanjaan operasi Pihak Berkuasa sementara menguruskan risiko kewangannya, termasuk risiko kredit, risiko kadar faedah, risiko kecairan dan aliran tunai.

(a) Risiko Kredit

Risiko kredit adalah risiko kerugian yang mungkin timbul disebabkan oleh kegagalan pihak lain di dalam menjalankan kewajipannya. Pendedahan kepada risiko kredit wujud daripada akaun-akaun belum terima. Bagi wang tunai dan baki di bank, Pihak Berkuasa mengurangkan risiko kredit dengan berurusan secara eksklusif dengan institusi kewangan yang memounai penarafan kredit yang tinggi.

Objektif Pihak Berkuasa adalah untuk mencari pertumbuhan berterusan sementara meminimumkan kerugian yang timbul kerana peningkatan dalam pendedahan risiko kredit. Pihak Berkuasa hanya berurusan dengan pihak yang mempunyai kelayakan kredit yang baik. Ia telah menjadi polisi Pihak Berkuasa bahawa siberhutang yang ingin berdagang hendaklah melalui prosedur pengesahan kredit. Tambahan pula, baki belum terima akan sentiasa dipantau secara berterusan.

(b) Risiko Kadar Faedah

Pihak Berkuasa tidak terdedah kepada risiko kadar faedah kerana tidak mempunyai aset jangka panjang yang menanggung faedah atau hutang yang menanggung faedah.

(c) Risiko Kecairan dan Aliran Tunai

Risiko kecairan adalah risiko bahawa Pihak Berkuasa akan menghadapi kesukaran dalam memenuhi kewajipan kewangan oleh kerana kekurangan dana. Pendedahan Pihak Berkuasa kepada risiko kecairan wujud daripada perbezaan dalam kematangan aset kewangan dan liabiliti kewangan. Jadual di bawah menunjukkan profil kematangan liabiliti Pihak Berkuasa pada tarikh laporan berdasarkan obligasi pembayaran semula tanpa diskaun kontrak.

	Dalam Tempoh Setahun RM	Lebih Tempoh Setahun RM	Jumlah RM
Pada 31 Disember 2024			
Pelbagai akaun belum bayar dan perbelanjaan terakru	**6,773,169**	**-**	**6,773,169**
Pada 31 Disember 2023			
Pelbagai akaun belum bayar dan perbelanjaan terakru	**4,299,521**	**-**	**4,299,521**

(d) Nilai Saksama

Nilai dibawa tunai dan kesetaraan tunai, belum terima dan belum dibayar adalah menyamai nilai saksama kerana tempoh matangnya yang pendek.

25. PERISTIWA SELEPAS TEMPOH PELAPORAN

(a) Pihak Berkuasa telah melantik kontraktor bagi melaksanakan kerja ubahsuai bangunan pejabat baharu di Cyberjaya dengan anggaran kos RM8,999,999 melalui tender terbuka. Proses ubahsuai ini dijangka selesai pada suku keempat tahun 2025. Seterusnya, Pihak Berkuasa akan berpindah dan beroperasi sepenuhnya dari bangunan pejabat baharu ini.

(b) Pihak Berkuasa akan membuat pelupusan sebahagian besar daripada jumlah Perabot, Kelengkapan dan Ubahsuai di bangunan pejabat yang kini di sewa pada tahun 2025 sebagai salah satu proses perpindahan ke bangunan pejabat baharu. Namun Pihak Berkuasa menjangka ia tidak akan memberi impak yang besar kepada kedudukan kewangan Pihak Berkuasa kerana sebahagian besar daripada aset-aset ini telah disusutnilaikan sepenuhnya dengan nilai bawaan RM1 setiap satu.

26. KOMITMEN BERKONTRAK

	2024 RM
Perabot, Kelengkapan dan Ubahsuai	9,563,635
Bekalan dan Bahan Guna Habis	90,120
Pembaikan dan Penyelenggaraan	74,173
	9,727,928

Komitmen bagi tahun berakhir 31 Disember 2024 di bawah Perabot, Kelengkapan dan Ubahsuai berjumlah RM9,563,635 termasuk perkhidmatan perunding hiasan dalaman, pengurus projek dan pengubahsuaian bangunan pejabat baharu Pihak Berkuasa di Cyberjaya yang dijangka selesai pada suku keempat tahun 2025.

Bekalan dan Bahan Guna Habis adalah terdiri daripada perkhidmatan sewaan mesin fotokopi berjumlah RM90,120.

Komitmen di bawah Pembaikan dan Penyelenggaraan berjumlah RM74,173 adalah untuk aktiviti menyelenggara sistem *OfficeCentral* Pihak Berkuasa dan juga pembaharuan lesen *Microsoft 365*.

Selain itu, terdapat juga komitmen Pemberian dan Kenaan Bayaran Tetap bagi sumbangan kepada Kumpulan Wang Disatukan Persekutuan (KWDP) bagi tahun 2025 namun jumlahnya masih belum dimuktamadkan serta tertakluk keputusan Kementerian Kewangan (MOF).

Glossary and Acronyms

A	
AAIBE	Electricity Supply Industry Trust Account
ABM	Akademi Binaan Malaysia
ACE	ASEAN Centre for Energy
ACMV	Air-Conditioning and Mechanical Ventilation
ACSU	Air-Cooled Split Unit
AEBF	ASEAN Energy Business Forum
AHU	Air Handling Unit
AIGC	AI Generated Content
AMEM	ASEAN Ministers on Energy Meeting
AoT	Allocation of Tariff
APAEC	ASEAN Plan of Action for Energy Cooperation
APG	ASEAN Power Grid
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
AT&PA	Acceptance Test & Performance Assessment
B	
BCG	Bio-Circular Green
BEDOS	Building Energy Data Online Monitoring System
BEI	Building Energy Index
BESS	Battery Energy Storage Systems
BHESS	Sabah and Sarawak Affairs Division
C	
CDP	Continuous Development Programme
CIDB	Construction Industry Development Board Malaysia
CMT	Centre for Management Technology
COP	Coefficient of Performance
COP29	29th Conference of the Parties
CSR	Corporate Social Responsibility
CSIRO	Commonwealth Scientific and Industrial Research Organisation, Australia
CRM	Corruption Risk Management

D	
DC	Direct Current
DC	Displaced Cost
DL	Down Light
E	
EACG	Energy Audit Conditional Grant
ECCJ	Energy Conservation Centre Japan
ECOS	Energy Commission Online System
EE	Energy Efficiency
EEB	Energy Efficient Building
EI	Energy Intensity
EM	Energy Management
EPF	Employees Provident Fund
ESG	Environmental, Social and Governance
ESMs	Energy Saving Measures
ESCOs	Energy Service Companies
EV	Electric Vehicle
ExCo	Executive Committee
F	
FiAH	Feed-in Approval Holder
FiT	Feed-in Tariff
FL	Fluorescent Lighting
FRIM	Forest Research Institute Malaysia
G	
GB	Green Building
GCPV	Grid-Connected Photovoltaic
GHG	Greenhouse Gas
GoMEn	Government Ministries and Entities
GWh	Gigawatt hour
H	
HRDF	Human Resource Development Fund
HVAC	Heating, Ventilation and Air Conditioning
I	
IBR	Incentive-Based Regulation
IEM	Institution of Engineers
IEA	International Energy Agency
IEA PVPS	International Energy Agency Photovoltiac Power Systems Programme

ILSAS	Integrated Learning Solution
IRENA	International Renewable Energy Agency
ISCC	International Sustainability and Carbon Certification
ISES	International Sustainable Energy Summit
ISF	International Sustainability Forum
J	
JASE-W	Japanese Business Alliance for Smart Energy Worldwide
JKPPT	Safety, Occupational Health and Energy Management Committee
JPSM	Forestry Department of Peninsular Malaysia
K	
KADIN	Indonesian Chamber of Commerce and Industry
Kemenko Marves	Coordinating Ministry for Maritime and Investment Affairs
KeTSA	Ministry of Energy and Natural Resources
KISMEC	Kedah Industrial Skills and Management Development Centre
KPIs	Key Performance Indicators
kWh	Kilowatt hour
L	
LCAW	London Climate Action Week
LED	Light Emitting Diod
LTMS-PIP	Laos-Thailand-Malaysia-Singapore Power Integration Project
M	
M&V	Monitoring and Verification
MACC	Malaysian Anti-Corruption Commission
MASHRAE	ASHRAE Malaysian Chapter
MBPJ	Petaling Jaya City Council
MELP	Malaysia Energy Literacy Programme
METI	Ministry of Economy, Trade and Industry, Japan
MGCC	Malaysian-German Chamber of Commerce and Industry
MGTC	Malaysian Green Technology and Climate Change Centre
MIDA	Malaysian Investment Development Authority
MOF	Ministry of Finance
MoU	Memorandum of Understanding
MPIA	Malaysian Photovoltaic Industry Association
MS	Malaysian Standards
MW	Megawatt
N	
NADMA	National Disaster Management Agency
NEEAP	National Energy Efficiency Action Plan
NEM	Net Energy Metering
NETR	National Energy Transition Roadmap
NOSS	National Occupational Skills Standard
NOVA	Net Offset Virtual Aggregation
O	
O&M	Operations and Maintenance
OACP	Organisational Anti-Corruption Plan
OGE	Oil, Gas and Energy
OGPV	Off-Grid Photovoltiac
P	
PEMANDU	Performance Management and Delivery Unit
PERHILITAN	Department of Wildlife and National Parks
PETRA	Ministry of Energy Transition and Water Transformation
PINTARE	Environment and Renewable Energy Industry Association
PLC	Plug-in Compact Lighting
PLP	Proactive Training Centre
POME	Palm Oil Mill Effluent
PPA	Power Purchase Agreement
PV	Photovoltaics
PVMS	Photovoltiac Monitoring System

R	
RE	Renewable Energy
REEM	Registered Electrical Energy Manager
REPPA	Renewable Energy Power Purchase Agreement
RMK-12	Twelfth Malaysia Plan
ROM	Recovery of Money
RPVI	Registered PV Investors
RPVSP	Registered PV Service Providers
S	
SARE	Supply Agreement of Renewable Energy
SAVE	Sustainability Achieved Via Energy Efficiency
SDGs	Sustainable Development Goals
SE	Sustainable Energy
SEB	Sarawak Energy Berhad
SELCO	Self Consumption
SESB	Sabah Electricity Sdn. Bhd.
SHRDC	Selangor Human Resource Development Centre
SOME	Senior Officials Meeting on Energy
ST	Energy Commission
SWOT	Strength, Weakness, Opportunity, Threat
T	
TAGP	Trans-ASEAN Gas Pipeline
TECH	Technical Development and Facilitation
TESDEC	Terengganu Skills Development Centre
TESS	Tropical Energy Storage Solutions
TNB	Tenaga Nasional Berhad
TPES	Total Primary Energy Supply
TTT	Train the Trainer
U	
UiTM	Universiti Teknologi MARA
UKM	Universiti Kebangsaan Malaysia
UNFCC	United Nations Framework Convention on Climate Change
UniKL BMI	Universiti Kuala Lumpur British Malaysian Institute
UNITEN	Universiti Tenaga Nasional
UPNM	Universiti Pertahanan National Malaysia
UTeM	Universiti Teknikal Malaysia Melaka
V	
VFD	Variable Frequency Drive
VSDs	Variable Speed Drives
W	
WCPU	Water-Cooled Packaged Units
Y	
YEEPE	Young Energy Explorer Programme
Z	
ZEB	Zero Energy Building

List of Exhibits

SUSTAINABLE ENERGY DEVELOPMENT AUTHORITY (SEDA) MALAYSIA
Level 6, Cyberview 23A, Persiaran APEC, Cyber 6,
63000 Cyberjaya, Selangor Darul Ehsan.

Tel : +603 8870 5800
Fax : +603 8870 5900
Email : enquiry@seda.gov.my

www.seda.gov.my