



TENAGA NASIONAL BERHAD

PRESENTATION TO INVESTOR

June 2025

TNB is the largest electricity utility company in Malaysia and at the forefront of the country's energy transition

Tenaga Nasional Berhad (TNB)



MALAYSIA

Sabah Electricity Sdn Bhd (SESB)
(83% owned by TNB)

Sabah Electricity
Energising Our Future

Our Presence in Peninsular Malaysia



Holds 48.7% of Domestic Generation Capacity



Our grid network and retail business* are governed by the Incentive Based Regulation (IBR) framework



Transmission length: 29,519 km
Substations: 543
System Minutes: 0.0019 minutes



Distribution Network: 738,028 km
Substations: 99,374
SAIDI: 47.88 minutes



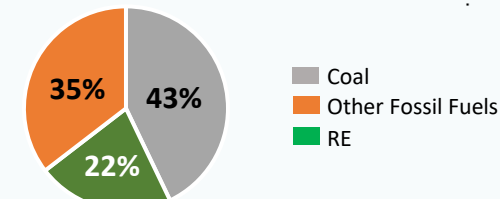
Retail customers: 10.4 mil
Customer Satisfaction Index (CSI): 87%

*Data as of December 2024

Group Portfolio

Total TNB Gross Capacity: 21,174MW
(March 2025)

- Domestic: 17,905MW
- International: 3,269MW



Notes:

1. RE inclusive of large hydro and small RE
2. Data is based on gross installed capacity
3. Solar capacity based on MWp

Main Subsidiaries



We are also a global player as we strive to future proof our business by expanding our RE footprint and establishing strategic partnerships with leading RE players

INTERNATIONAL PORTFOLIO

2021

- **Equity stake:** 100%
- **Capacity:**
 - 123.9MW in onshore wind
 - 365.0MW in solar (55% equity)
 - 41.5MW in offshore wind (49% equity)
 - 276.0MW in solar

2016

- **Equity stake:** 30%
- **Capacity:**
 - 1,151.5MW in gas, hydro and wind.
 - Water conveyance in Jordan



- **Operation & Management Services:**
 - Operation & Maintenance Contract for Doha West and Shuwaikh Power Stations
 - Maintenance, Repair and Overhaul Contract for Sabiya Station-1, Sabiya Station-2 & Shuaibah North Power Stations

2005



- **Equity stake:** 6% effective equity stake
- **Capacity:**
 - 1,190.7MW in oil
 - Water desalination of 376 mcm p.a.



- **Operation & Management Services:**
 - TNB Remaco & Balloki Power Plant National Power Park Management Company Limited 276.0MW in Solar

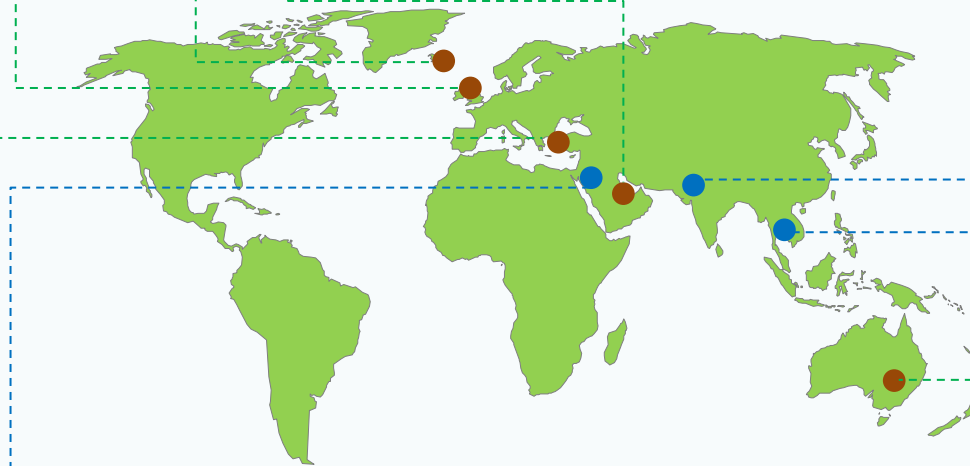


- **Technical Advisory:**
 - Technical Advisory for Electricité du Cambodge (EDC) Heavy Fuel Oil Plant of 400MW

2023



- **Equity stake:** 100%
- **Capacity:**
 - 120.5MWp in Solar



Our International Presence



Solar



Wind



Hydro



Gas



United Kingdom



Ireland



Australia



Türkiye



Saudi Arabia



NON-INDEPENDENT NON-EXECUTIVE CHAIRMAN
TAN SRI ABDUL RAZAK BIN ABDUL MAJID



EXECUTIVE DIRECTOR / PRESIDENT / CEO
DATUK IR. MEGAT JALALUDDIN BIN
MEGAT HASSAN

Senior Independent
Non-Executive Director



ONG AI LIN

Expertise: Audit &
Finance

Independent Non-Executive Directors



DATO' MERINA BINTI
ABU TAHIR

Expertise: Accounting



GOPALA KRISHNAN
K.SUNDARAM

Expertise: Law



JUNIWATI
RAHMAT HUSSIN
 Expertise: Corporate Planning
and Human Resource



ALAN HAMZAH BIN
SENDUT

Expertise: Accounting



DATO' ZULKIFLI BIN
IBRAHIM

Expertise: Engineering

Non-Independent Non-Executive Directors



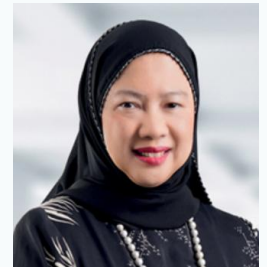
MUAZZAM BIN MOHAMAD

Permodalan Nasional
Berhad (PNB)



YB. TUAN RAMZI BIN
MANSOR

Ministry of Finance (MOF)



ROHAYA BINTI
MOHAMMAD YUSOF
 Employees Provident Fund
(EPF)



SELVENDRAN
KATHEERAYSON

Khazanah Nasional Berhad



ELAINE ONG
YEE LYNN
 Khazanah Nasional Berhad
Alternate Director

Group earnings supported by; i. Improved generation performance
ii. World-class network performance

Equivalent Plant Availability Factor,
EAF (Generation) %



1QFY2025
82.0%

1QFY2024: 75.4%
2025 Target: 83.2%



Improved overall performance
by power plants

System Minutes
(Transmission) Minutes



1QFY2025
0.0001

1QFY2024: 0.0001
2025 Internal Threshold: 1.5




World class network performance
safeguarded our regulated business earnings


SAIDI
(Distribution Network) Minutes



1QFY2025
11.63

1QFY2024: 11.95
2025 Internal Threshold: 48.0




Distribution Automation (DA) &
predictive analytics* initiatives
enhanced network reliability

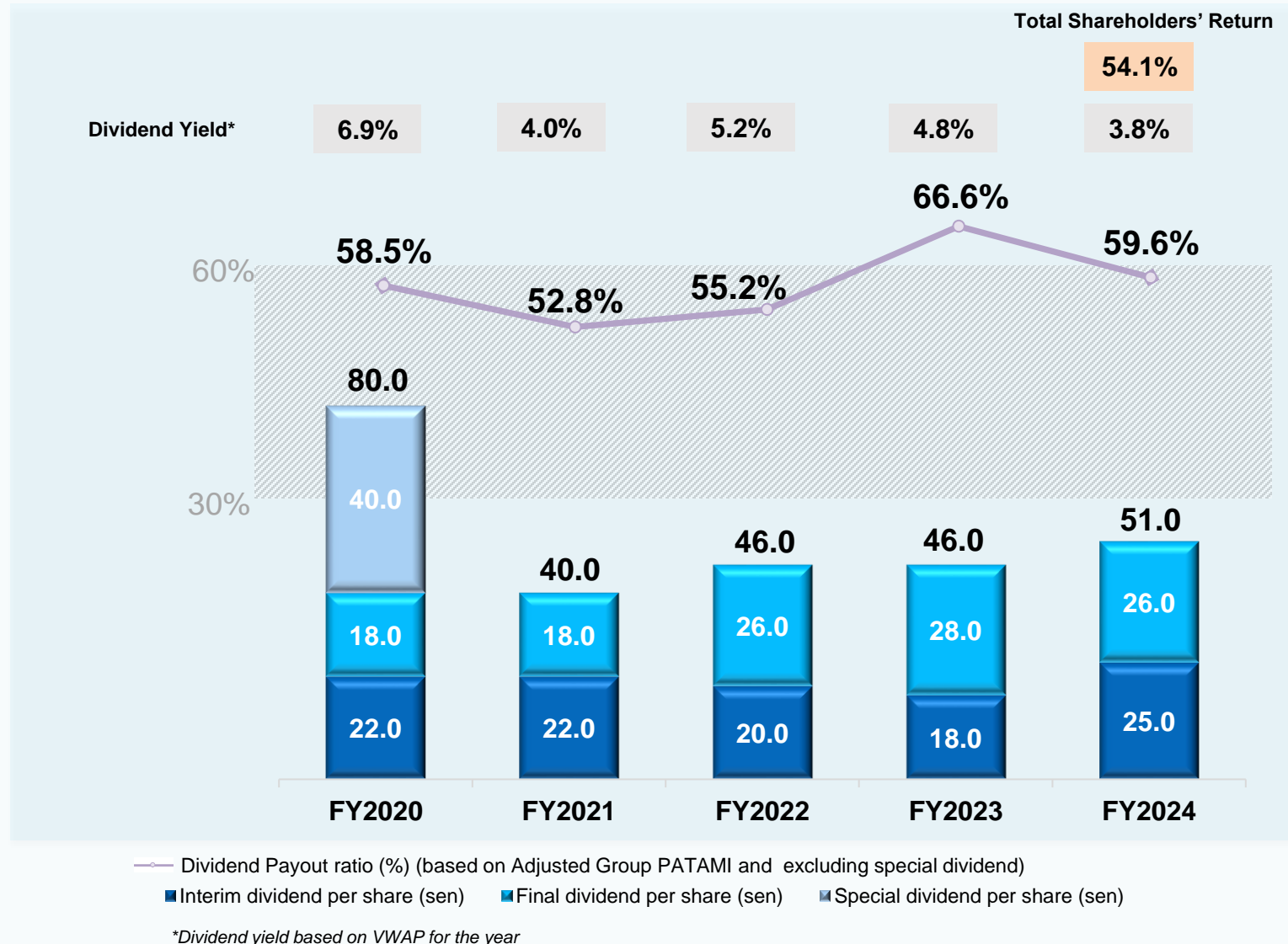
DA played a key role by enabling faster fault detection, isolation and restoration

**Started in September 2024*

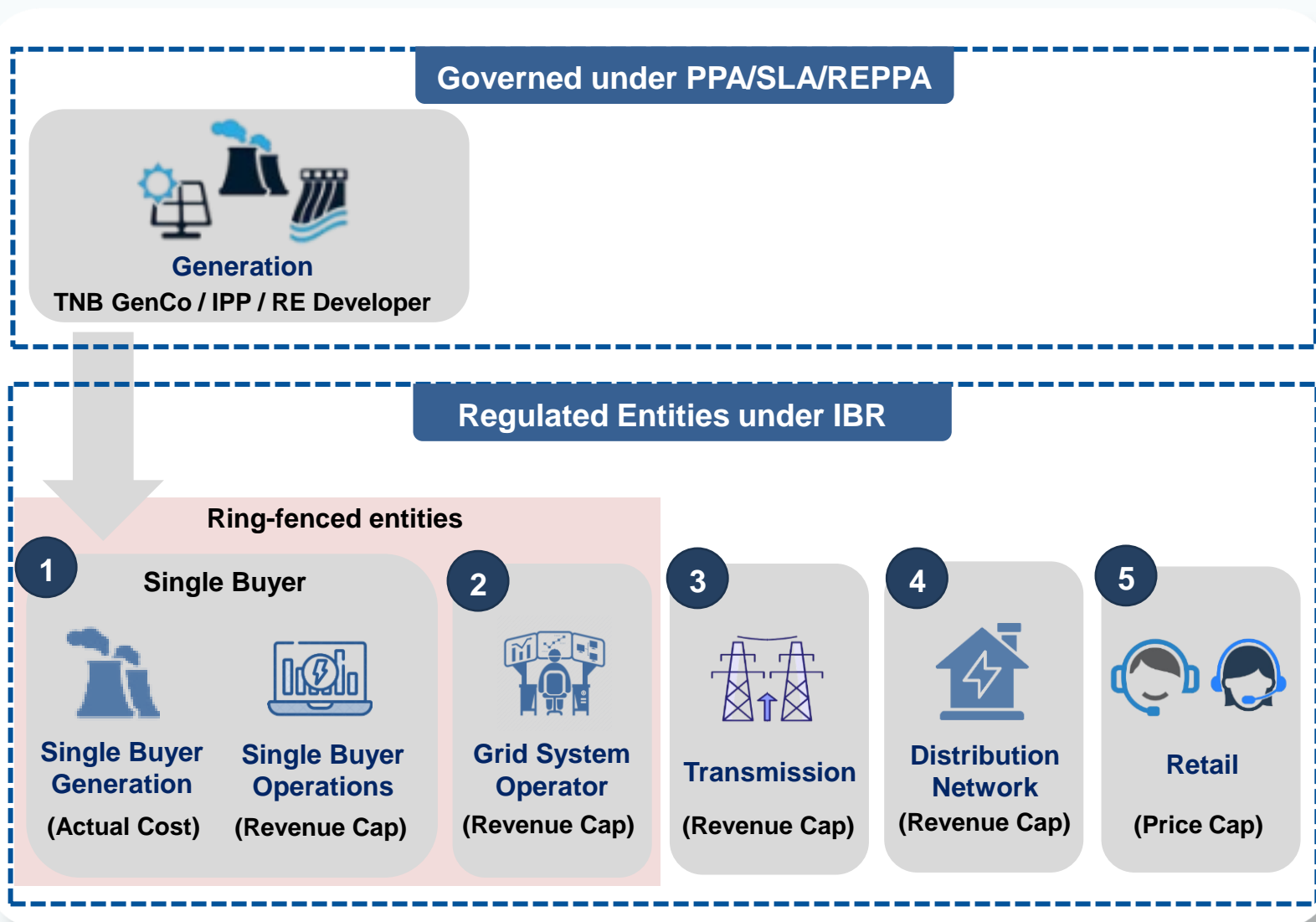
We continue to deliver stable dividend payouts, reflecting our commitment to rewarding shareholders and maintaining prudent capital management

DIVIDEND POLICY

We will continue to honour our dividend policy of 30% to 60% dividend payout ratio, based on the reported Consolidated Net Profit Attributable to Shareholders After Minority Interest, excluding Extraordinary, Non-Recurring items



Our regulated business is governed by the Incentive-Based Regulation (IBR) framework which provides stable returns to the Group while ensuring a more efficient energy sector



The IBR mechanism provides:

- Clear and transparent regulatory framework
- Consistent and stable returns
- Shield against uncontrollable swings
- Incentives for operational efficiencies

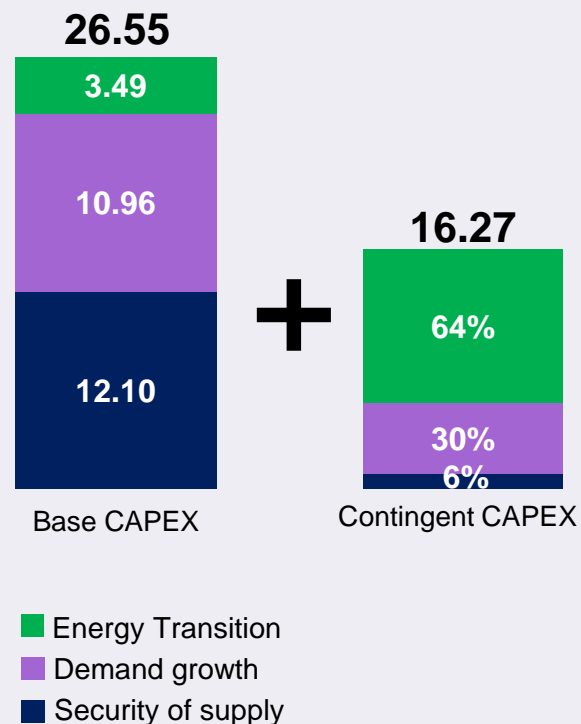
- Regulated business made up more than 70% of the overall Group revenue.
- **Revenue cap:** Allowed annual revenue based on approved demand growth. Any excess/shortfall is adjusted through revenue adjustment mechanism.
- **Price cap:** Any excess/shortfall of revenue made due to higher/lower average selling price compared to base tariff is adjusted through revenue adjustment mechanism.

We have successfully secured our returns at 7.3% and sufficient expenditure allowance for the next 3 years

Tariff Parameters

	Regulatory Period 3 (RP3)	>	Regulatory Period 4 (RP4)
Average Sales (TWh)	116.8		141.7
Coal price (USD/MT)	79		97
FOREX (RM/USD)	4.123		4.400
Gas price (RM/mmBTU)	T1: RM26 - RM30 (800mmscfd) T2: RM33		T1: RM24 - RM35 (800mmscfd) T2: RM46
OPEX (RM bil)	17.9		20.8
BASE CAPEX (RM bil)	20.6		26.6 (with RM16.3 bil Contingent CAPEX)
WACC	7.3%		7.3%

RP4 Allowed CAPEX (RM bil)

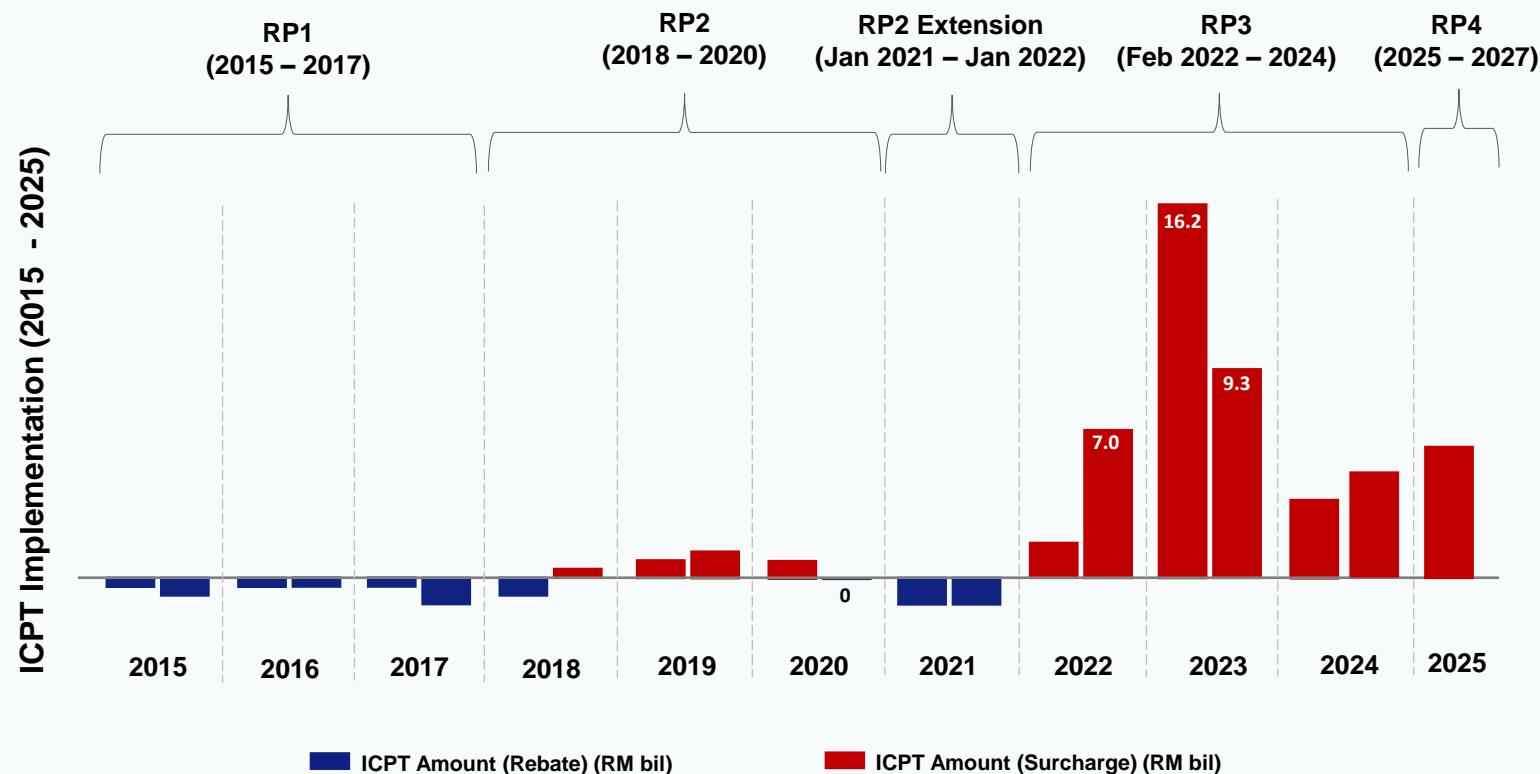
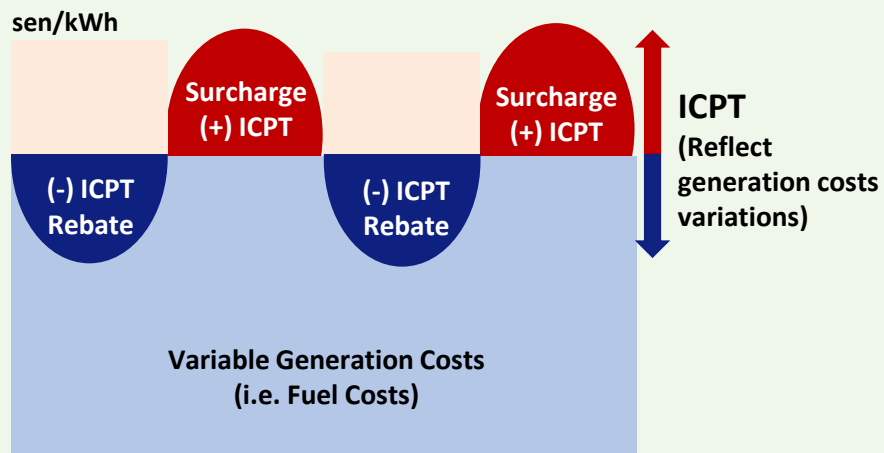


Contingent CAPEX

- Investments required to:
 - Maintain security of supply;**
 - Meet potential demand growth** in supporting economic priorities (e.g. data centres and industries); and
 - Facilitate Energy Transition (ET):** Upgrading infrastructures to support RE, NETR and interconnection projects.
- The list of projects has been **pre-approved by the Energy Commission (EC) and will be implemented once triggers occur**. For example:
 - Accelerated ET– Accelerating smart projects related to distribution automation (DA), smart meters (AMI), and investments in EV infrastructure; and
 - Demand growth – New ESA with data centres and robust system for EV charging.
- The recovery mechanism is being finalised.
- Entitled for the same regulatory return at 7.3%.

Regulatory certainty; the Government has successfully managed the impact of fuel prices volatility for the past 21 ICPT cycles since 2015 with the highest ICPT cost recovery in 2023

ICPT is a mechanism under the IBR framework which **allows TNB to reflect changes (either increase or reduction)** in fuel and other generation-related costs in the electricity tariff every six (6) months in the form of **rebate or surcharge**.



ICPT mechanism remained intact; ICPT receivables is expected to stabilise amid moderating coal prices, relieving working capital pressure with positive improvements in our cash flow position and gearing levels.

Our journey towards Net Zero 2050 Aspiration will bring positive business growth and enhance value to our shareholders, as well as support the nation's aspiration

Net Zero 2050 Aspiration

Our Target for 2025

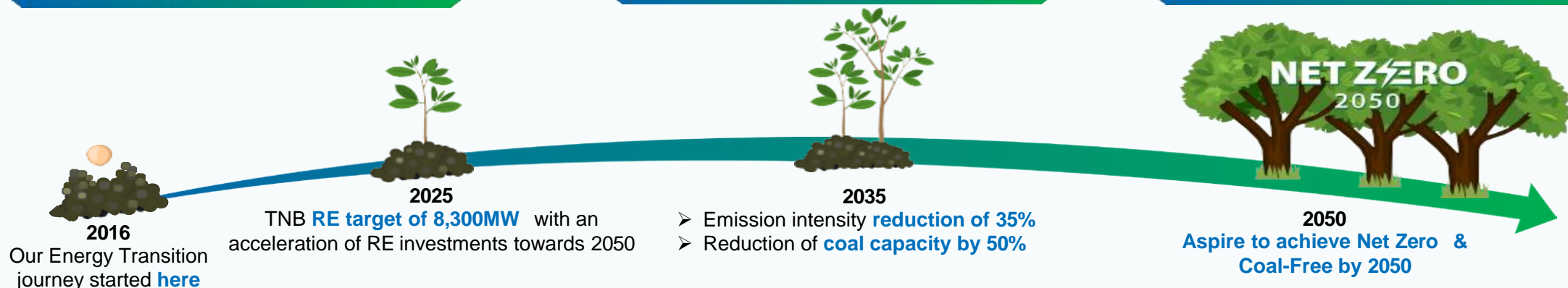
- Build scale in renewable generation
- Improve thermal plant efficiency

Our Commitment to 2035

- Significant renewable generation growth
- 50% reduction in coal generation capacity

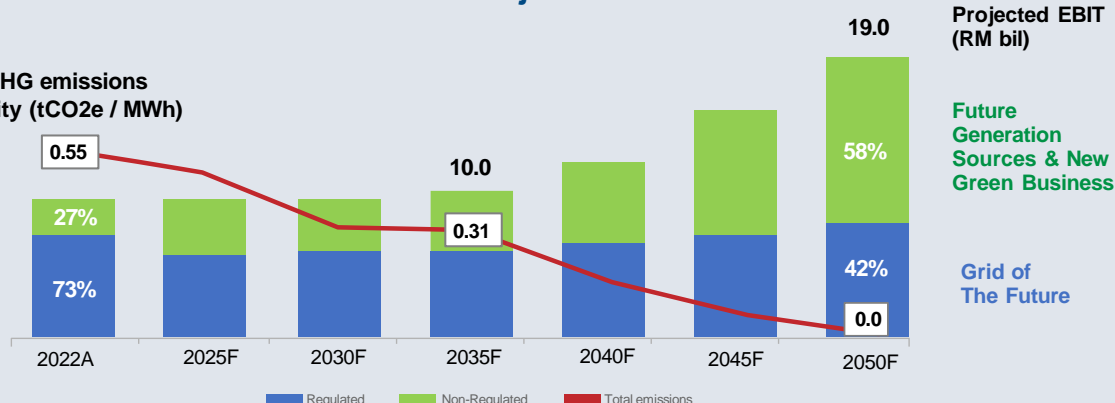
Our Aspiration to 2050

Invest and grow our emerging green technologies including Hydrogen and Carbon Capture & Utilisation (CCU)



EBIT Projection

TNB GHG emissions intensity (tCO₂e / MWh)



MSCI

MSCI ESG rating **upgraded to A**, score: 6.9 (2025)

ESG

Ranked 1st in Malaysia in ESG Transparency Reporting by **Global ESG Monitor (2023)**

We believe our pathway will bring positive business growth to the Group while **creating long-term value to our shareholders** through earnings growth.

Our Energy Transition Plan cuts across the electricity supply value chain, anchoring on three (3) key levers: Decarbonisation, Digitalisation & Electrification

Deliver Clean Generation



ENERGY SOURCES

Renewable Capacity Growth

- Capture RE growth potential in domestic and international markets
- Embark on strategic partnership for new technology
- Adopt commercial capabilities in foreign markets to drive domestic RE growth

Carbon Management

- Reduce scope 1,2,3 GHG emissions
- Capture emissions (CCS, CCU)
- Trade/offset
- Manage carbon pricing

Coal Generation Capacity Reductions

- Uplift value of existing plants
- Reduce coal generation capacity
- Increase gas generation capacity

Develop Energy Transition Network



ENERGY VECTORS

Smart Grid

- Enhance grid & network flexibility to enable higher penetration of VRE¹, DER² and electrification

Hydrogen

- Produce for applications in domestic power, industrial and mobility sectors, and for export market

Energy Storage

- Stabilise the grid
- Manage grid's peak demand
- Enable off-grid supply and peer-to-peer generation among prosumers

Dynamic Energy Solutions



ENERGY USAGE

Electrification

- Spur the development of low-carbon mobility ecosystem

Energy Efficiency

- Provide energy audit services and integrate energy efficiency improvements on machinery, equipment & appliances
- Deploy energy monitoring system

Prosumers

- Provide rooftop solar + storage solution

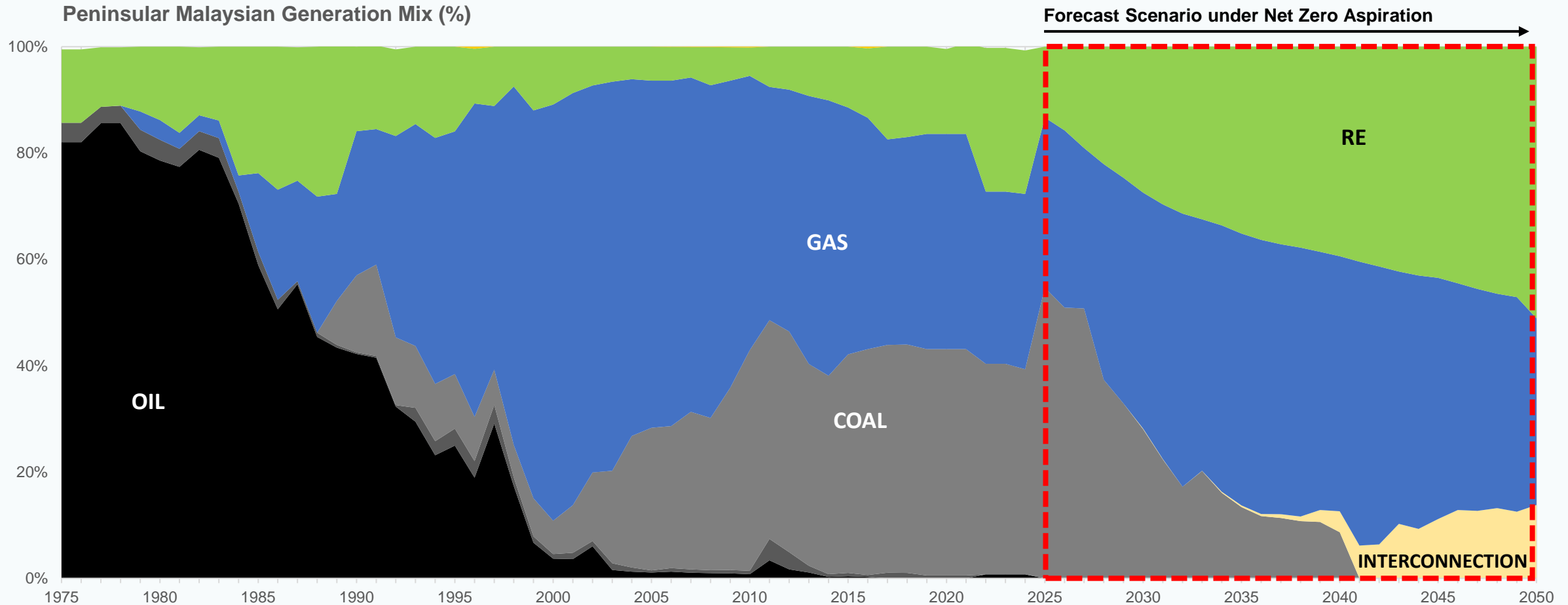
Digital Platforms

- Complement Energy Transition (ET) initiatives with digital platforms such as myTNB app, Electric Vehicle (EV) charging platform, digital marketplace and green energy aggregation and trading platform

¹ Variable Renewable Energy

² Distributed Energy Resources

The nation's current generation mix reflects the diversification required for security of supply, and will continue to shift as we take a responsible approach towards energy transition



- Historically, Malaysia's generation mix was dominated by the use of oil as we transitioned into gas and then coal
- Moving forward, RE will grow significantly as costs rapidly decline**

TNB's fast-track sustainability agenda will bring major shifts across the value chain, ensuring business growth while meeting our ESG commitment

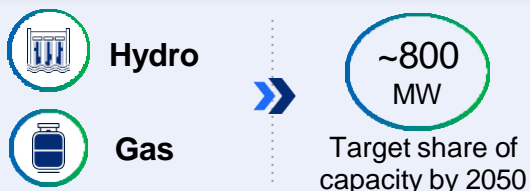
Deliver Clean Generation

GenCo aims to capture ~RM40 bil revenue from domestic market by 2050

Fast track decarbonisation

- 1 Coal plants early retirement
- 2 Repowering plants with cleaner fuel and green tech
- 3 Strategic technology partnership

Explore opportunities in ASEAN

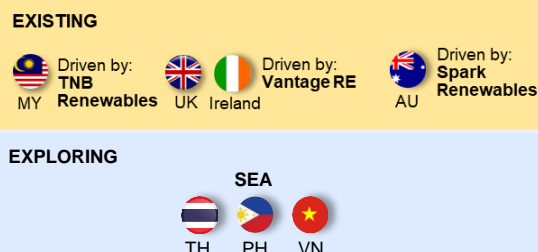


- Increase enterprise value and sustainability position of GenCo
- Possibility of an IPO of GenCo

NED aims ~USD7 bil Equity investment by 2050



FOCUS MARKETS



14.3GW by 2050
(Average portfolio return of 7% – 9%)

Develop Energy Transition Network

Regulated asset base (RAB) to grow to ~RM100 bil by 2050

- Renewable Energy (VRE) and Distributed Energy Resources (DER)
- Propelling growth of transportation and industrial customers electrification
- Reducing carbon footprint and preserving the forestry & natural environment

Regional Interconnection

To strengthen security of supply and open investment opportunities



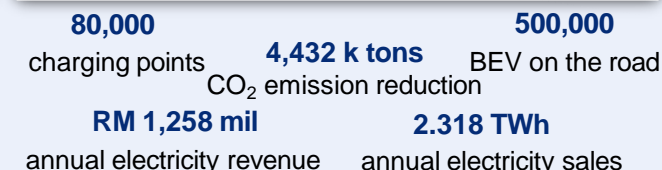
Potential Earnings by 2050: ~RM7 bil

Dynamic Energy Solutions

We will invest RM90 mil to support BEV ecosystem with the following key strategic moves:

- 1 Build charging infrastructure
- 2 Reskill & upskill workforce
- 3 Lead by example through TNB Fleet electrification
- 4 Sponsor EV-related studies
- 5 Foster coalition among EV sector players

2030 EV Market Potential



Driving changes in customer behaviour via myTNB

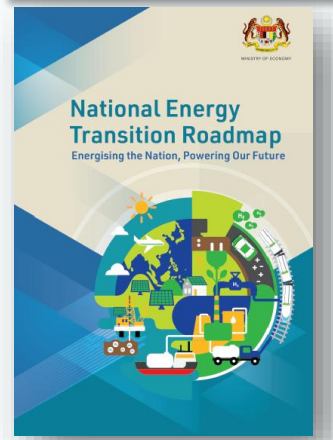


Usage of Energy Budget features via myTNB

- As of Dec 2024, ~876k users have subscribed
- Driving energy efficiencies resulting CO₂ avoidance

The National Energy Transition Roadmap (NETR) aims to shift Malaysia from a traditional fossil fuel-based economy to a high-value green economy

Responsible Transition (RT) Pathway 2050
to shift Malaysia's energy systems from fossil fuel-based to greener and low-carbon systems



Aligned with the national aspirations and commitments to sustainable development

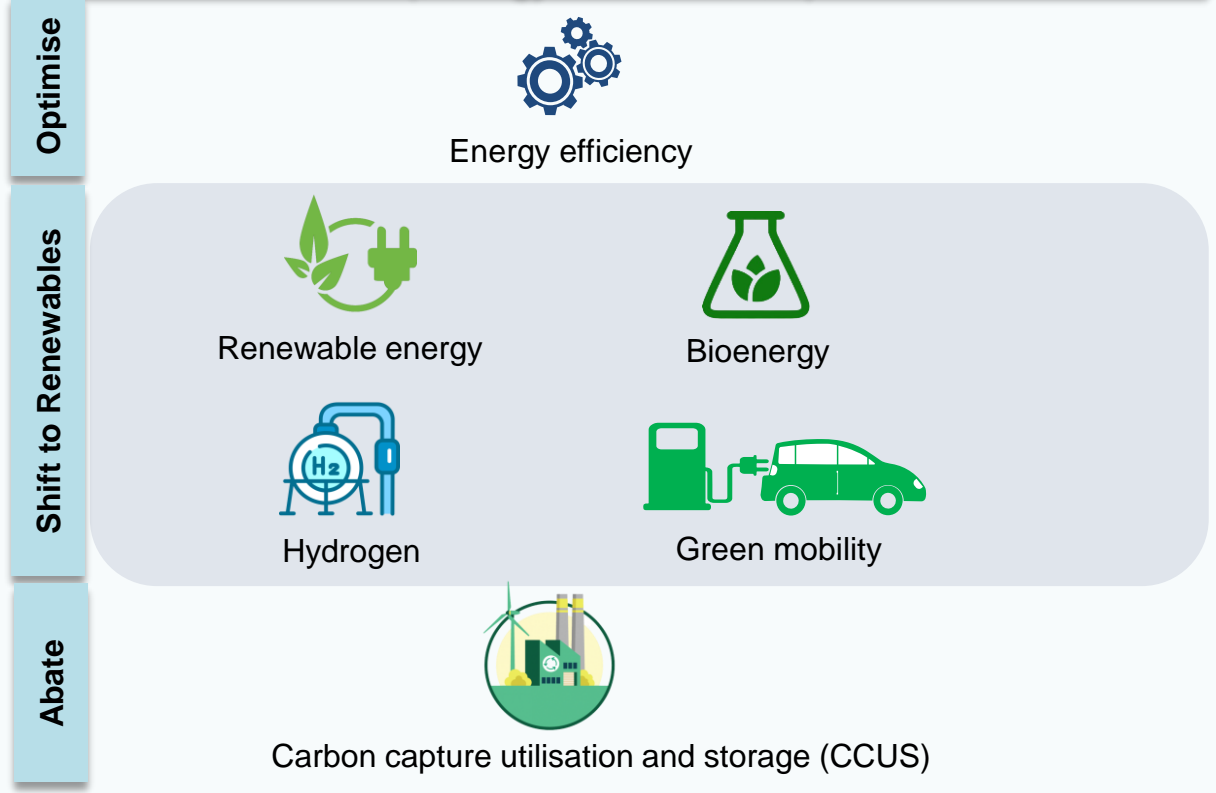
The **Twelfth Malaysia Plan 2021-2025** which outlines aspirations for the nation to achieve net zero emissions by 2050.

The **National Energy Policy (DTN)** launched in September 2022 with aspirations to become a low carbon nation in 2040.

Review of RE policies

- 1 To increase the country's installed RE capacity from **40% in 2035** to **70% by 2050**;
- 2 To introduce the concept of a **self-contained system according to the "willing buyer, willing seller" principle** to the RE development framework;
- 3 To increase the **installation of solar systems on government buildings**; and
- 4 To allow **cross-border RE trade** through the establishment of an electricity exchange system, complementing the ASEAN power grid initiative.

NETR Part 1 (6 energy transition levers)



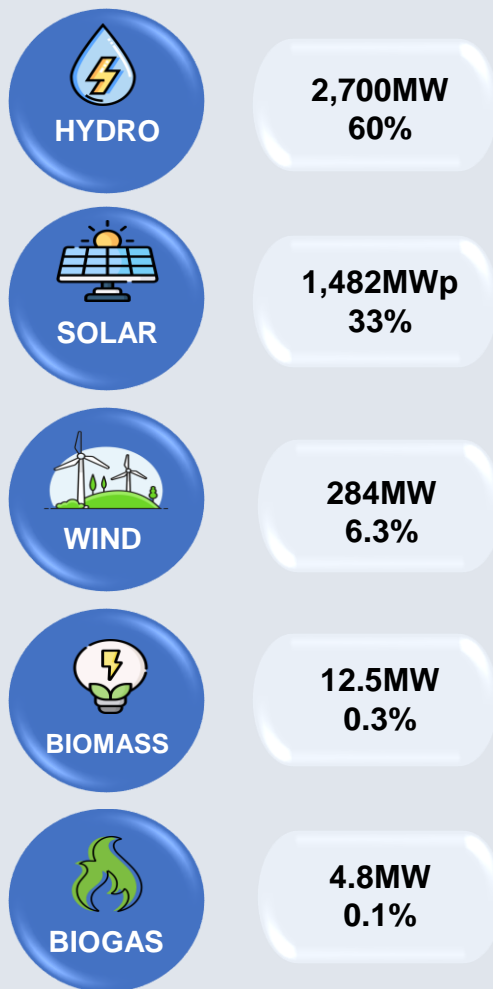
NETR Part 2 (Focus on biomass, waste-to-energy usage, CCS and hydrogen integration)

- 1 Establish the National Energy Council
- 2 Set up the National Energy Transition Facility (NETF) with a seed fund of RM2 billion
- 3 Establish and launch a RE exchange in 2024

We remain resolute in delivering our RE target capacity of 14.3GW by 2050

RE portfolio

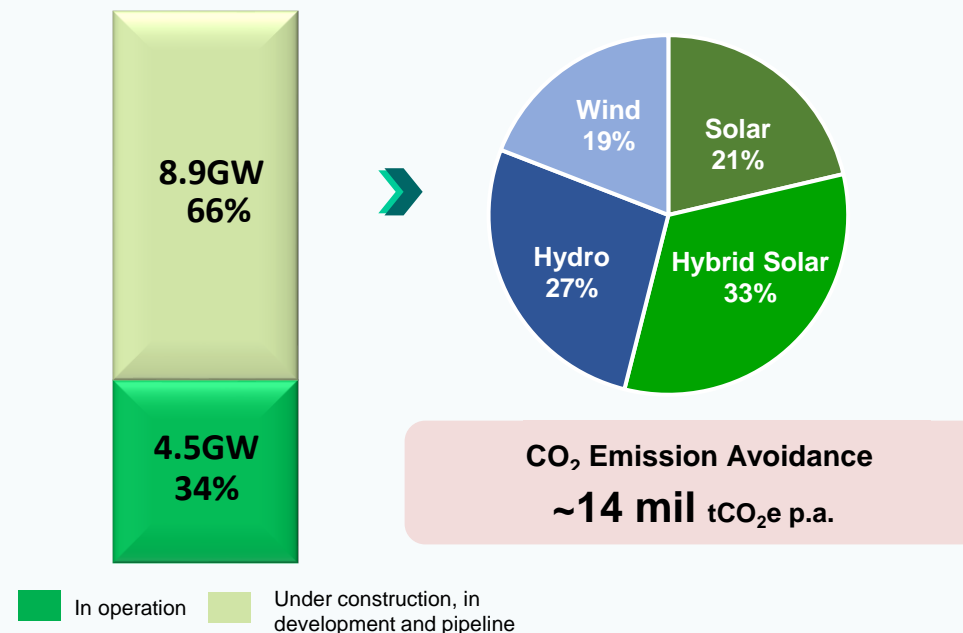
4.5GW as at March 2025



Champion for 3 flagship catalyst projects

- Establishment of Large-Scale Solar Parks over 5 sites, each with 100MW capacity,
- Development of Hybrid Hydro-Floating Solar (HHFS) at existing dams with a capacity of 2,500MW, and
- Co-firing of Hydrogen and Ammonia at our power plants.

13.4GW Secured RE Capacity (as at March 2025)



Notes:

1. Solar gross capacity is quoted in MWp
2. Numbers manually computed will not match due to decimal variance

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Thank you

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