



*Ministry of Energy Transition and Water Transformation
Malaysia*

Power Development Plan (PDP) In Peninsular Malaysia and Updates on Sustainable Energy



Malaysia's Climate Pledge



United Nations Framework
Convention on Climate Change

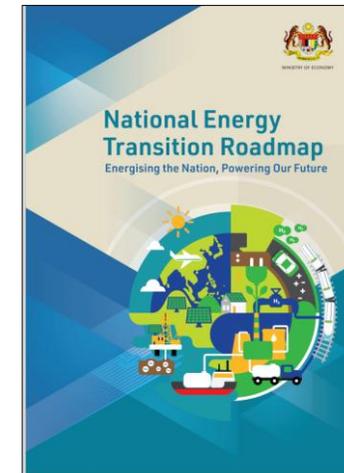
“ Economy-wide carbon intensity (against GDP)
reduction of 45% in 2030 compared to 2005 level”

The Twelfth Malaysia Plan



Net-zero GHG emissions by 2050

National Energy Transition Roadmap (NETR)

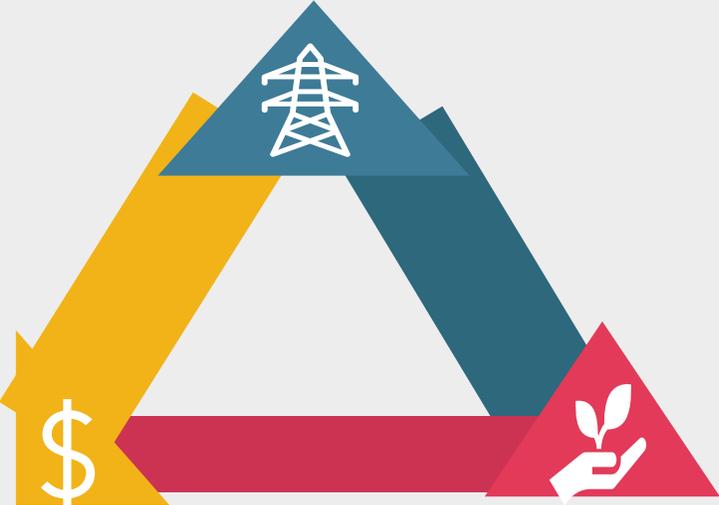


**70% installed RE
capacity by 2050**

PLANNING CRITERIA & POLICIES

Energy Security

To meet current and future energy demand reliably, withstand and bounce back swiftly from system shocks with minimal disruption to supplies.



Energy Equity

To provide universal access to reliable, affordable, and abundant energy for consumers use.

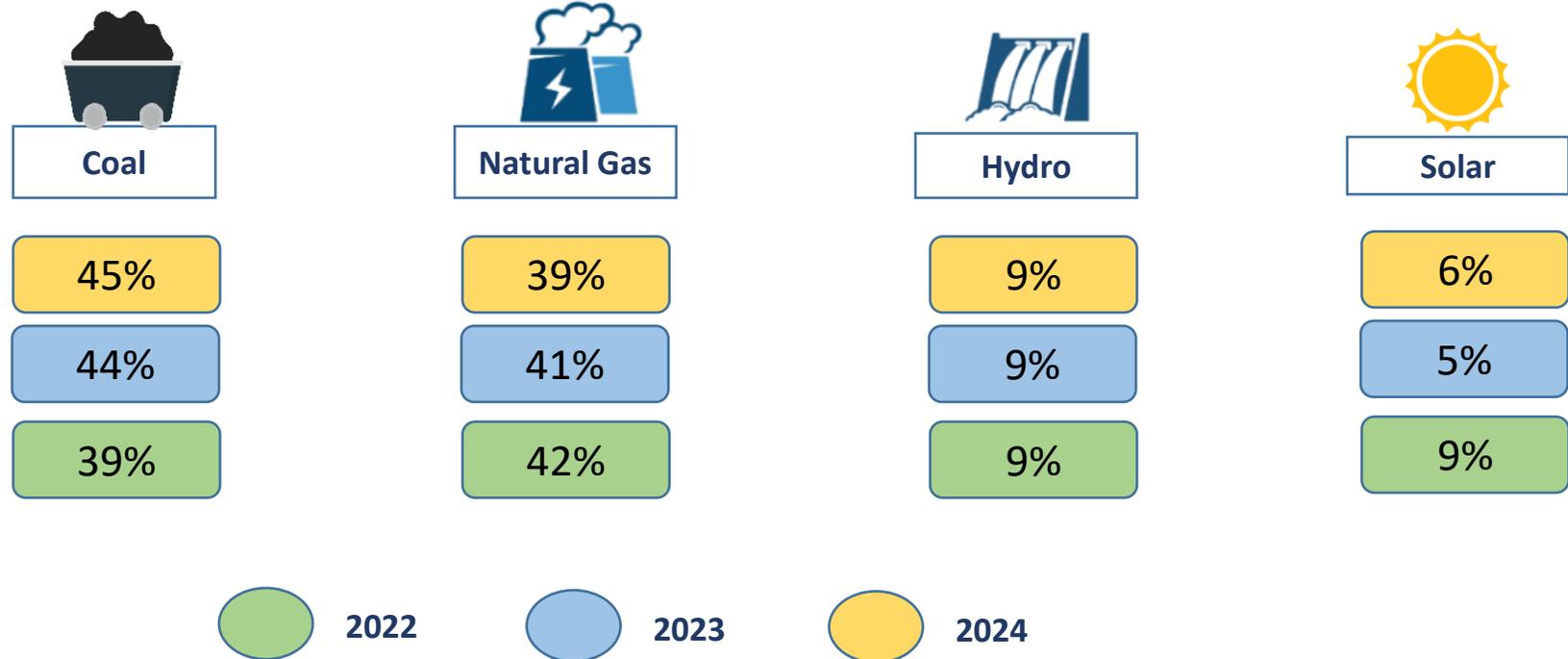
Environmental Sustainability

The transition of the energy system towards mitigating and avoiding potential environmental harm and climate change impacts.

- 70% RE installed capacity in 2050
- Emission intensity reduction (CO₂/RM GDP)
 - 2030- 45%
 - 2035- 60%

ENERGY TRILEMMA

Installed Capacity in Peninsular Malaysia



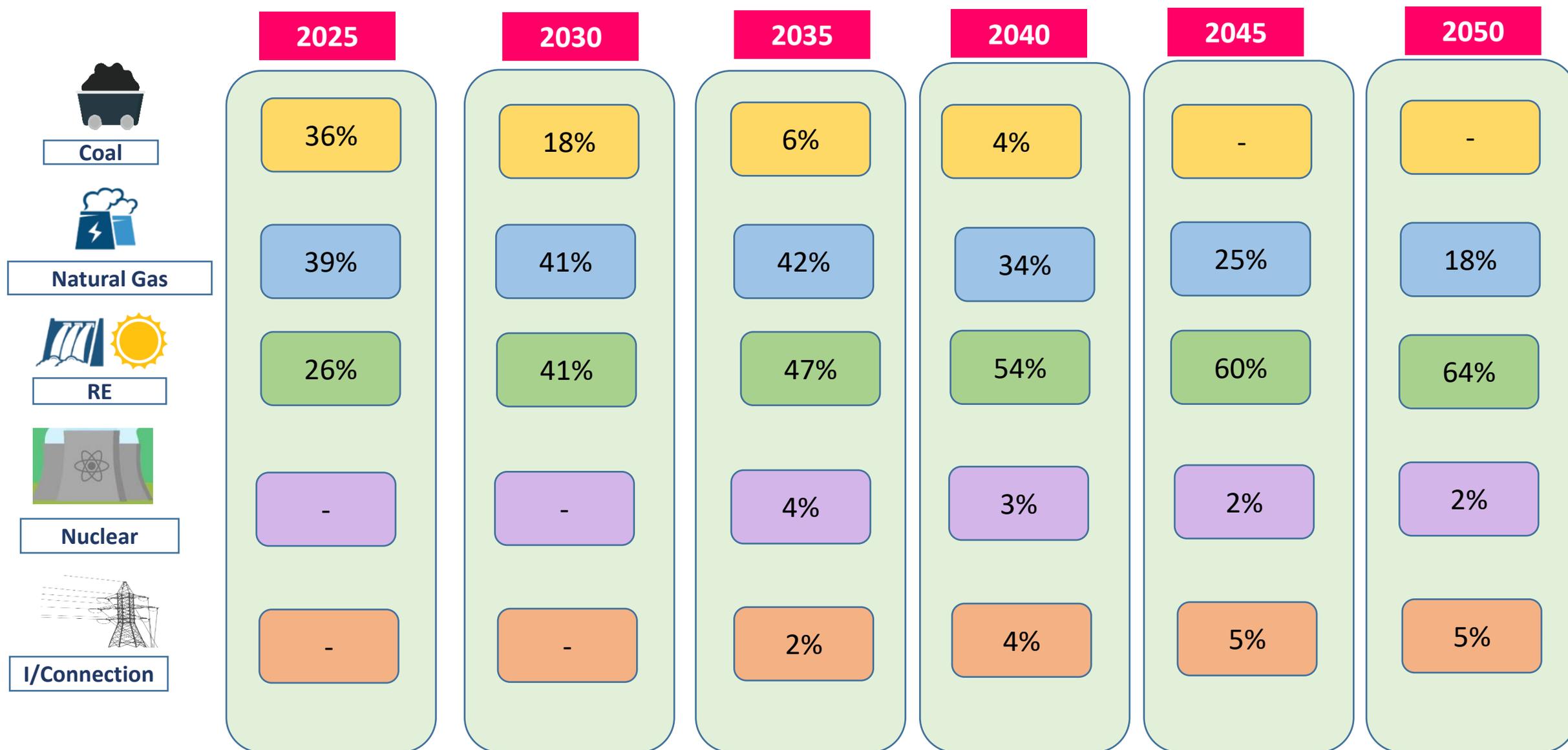
Peak Demand in Peninsular Malaysia



Demand Forecast in Peninsular Malaysia

YEAR	2025	2030	2035	2040	2045	2050
GW	20.1	33	43.1	50.6	56.5	63

Forecast Installed Capacity in Peninsular Malaysia



POLICIES

- NO NEW coal-fired power plant;
- NO EXTENSION of coal-fired power plant;
- CO-FIRING a coal-fired power plant with biomass (15%) – Pilot Project;
- 70% installed RE capacity by 2050; and
- Request for Information (RFI) with a coal-fired power plant.

Decarbonisation Goals

- Achieve net-zero greenhouse gas emissions by 2050.
- Reduce carbon intensity of GDP by 45% by 2030, compared to 2005 levels
- Increase renewable energy capacity to 31% by 2025, 40% by 2035, and 70% by 2050.
- Reduce reliance on fossil fuels from 96% in 2023 to 77% by 2050

Primary Focus Area

- Well-coordinated and cost-effective implementation of energy efficiency
- Adoption of large-scale energy-efficient technologies and renewable energy integration to drive sustainability.

4

Energy Efficiency & Conservation Act (EECA) Main Thrusts

Energy Consumer

Large users (>21,600 GJ) must appoint energy managers, conduct audits, and implement management systems

Buildings

Large buildings (>8,000m²) need energy labeling, regular audits, and efficiency plans

Energy Using Product

Manufacturers/importers must meet performance standards and display energy labels

Registration

Certification of energy managers, auditors, and training institutions



RENEWABLE ENERGY programmes

9

- FiT
- NEDA
- NEM
- LSS
- LCEGP
- SelCo
- GET
- CGPP
- CRESS

INSTALLED CAPACITY AS OF DECEMBER 2024

11.9GW

National Energy Transition Roadmap (NETR) on EE Key Initiatives

Improve EE awareness

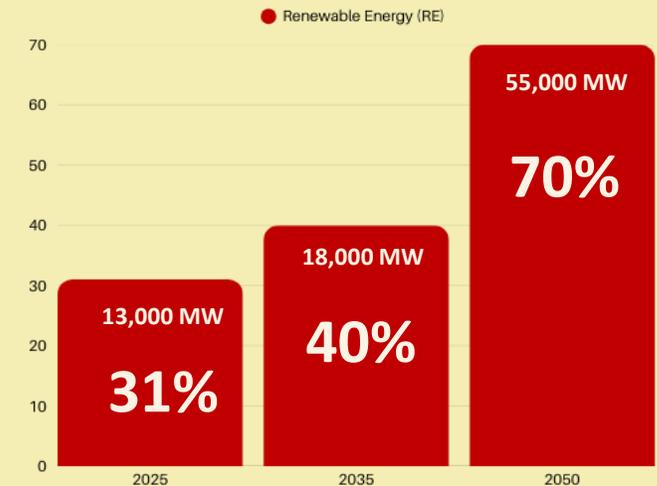
Improve existing Minimum Energy Performance Standards (MEPS) and 5-star rating bands

Enforce mandatory audits for large commercial and industrial buildings

Establish an ESCO platform

Establish green building codes for energy-intensive residential and commercial buildings

RENEWABLE ENERGY ASPIRATION



Implementation Challenges



Financial Barriers

- RE: Cost of upgrading grid infrastructure
- EE: High upfront cost for audits and ESM implementation



Capacity Gaps

- RE/EE: Different support mechanisms
- EE: Short of qualified energy auditors



Coordination Issues

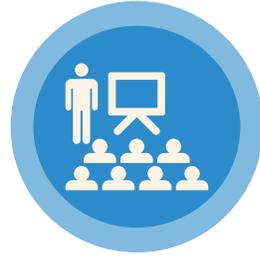
- EE: Inconsistent standards

Cooperation Initiatives



Financial Assistance

- Grants
- Soft loans
- Targeted financial support



Capacity Building

- Expanding training programmes
- Establish regional RE and EE academy
- Promoting knowledge sharing



Regional Cooperation

- Harmonising standards
- Sharing resources
- Facilitating technical exchanges



Flagship Initiatives

- Integrated support programme
- Combine financial incentives with capacity building initiatives for measurable results
- Example: EA Conditional Grants

Way Forward



Addressing Challenges



Policy inconsistencies



Accommodate the intermittency of variable RE



Accelerating interconnection projects



Financing model for RE & EE projects



High costs of energy storage systems



Need for capacity-building and knowledge exchange



*Ministry of Energy Transition and Water Transformation
Malaysia*

Thank you

*Data Centre Demand Forecast in
Peninsular Malaysia*

YEAR	2025	2030	2035	2040	2045
GW	5	12.89	19.5	20.9	21.0