



COUNTRY PRESENTATION - MALAYSIA

Saiful Rahman, Sustainable Energy Development Authority (SEDA) Malaysia

61st Task 1 Meeting #date# [Adelaide, Australia]

Technology Collaboration Programme

by **iea**

MALAYSIA – General Information

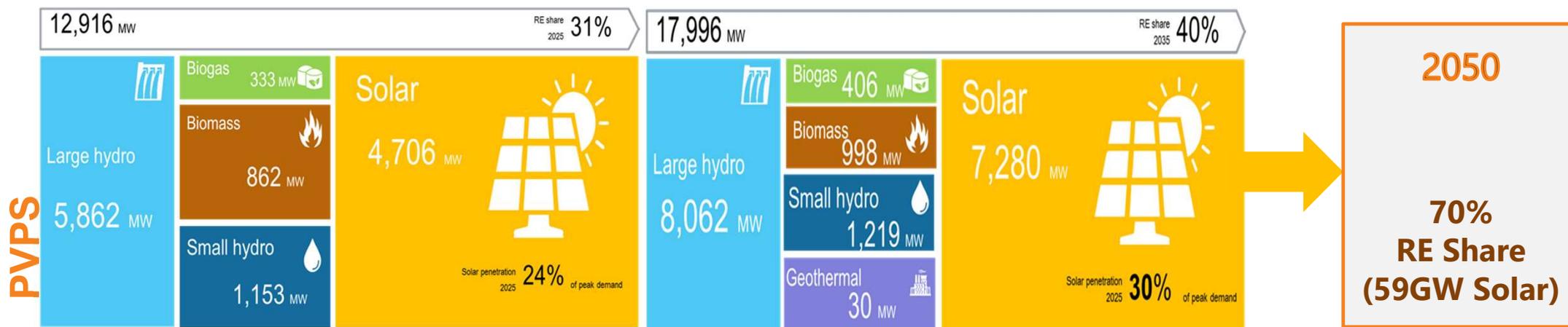


POPULATION	33 million
TOTAL ELECTRICITY DEMAND	23.4GW
TOTAL CONNECTED CAPACITY	41.9GW



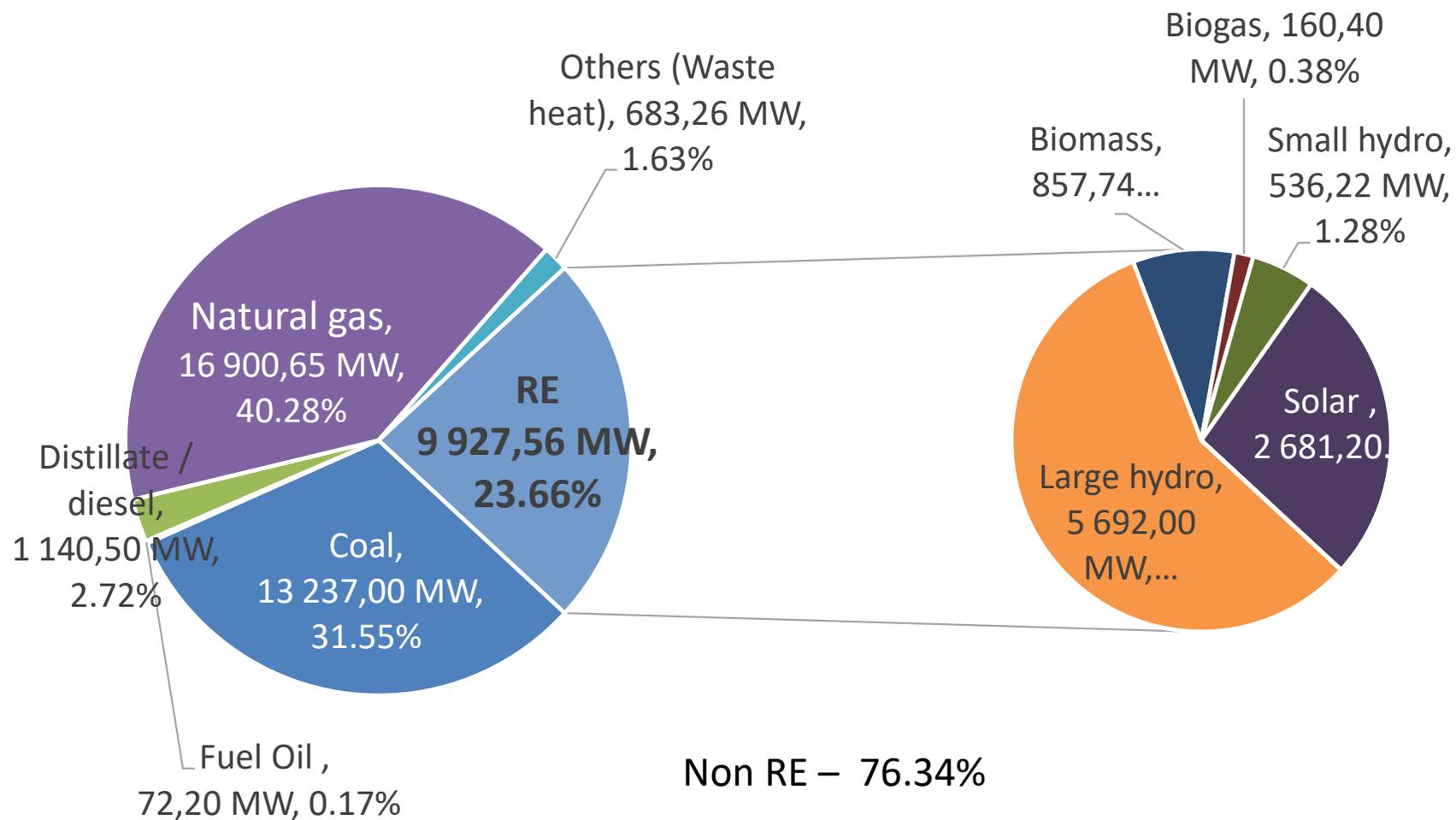
RE CAPACITY MIX TARGET IN 2025

RE CAPACITY MIX TARGET IN 2035

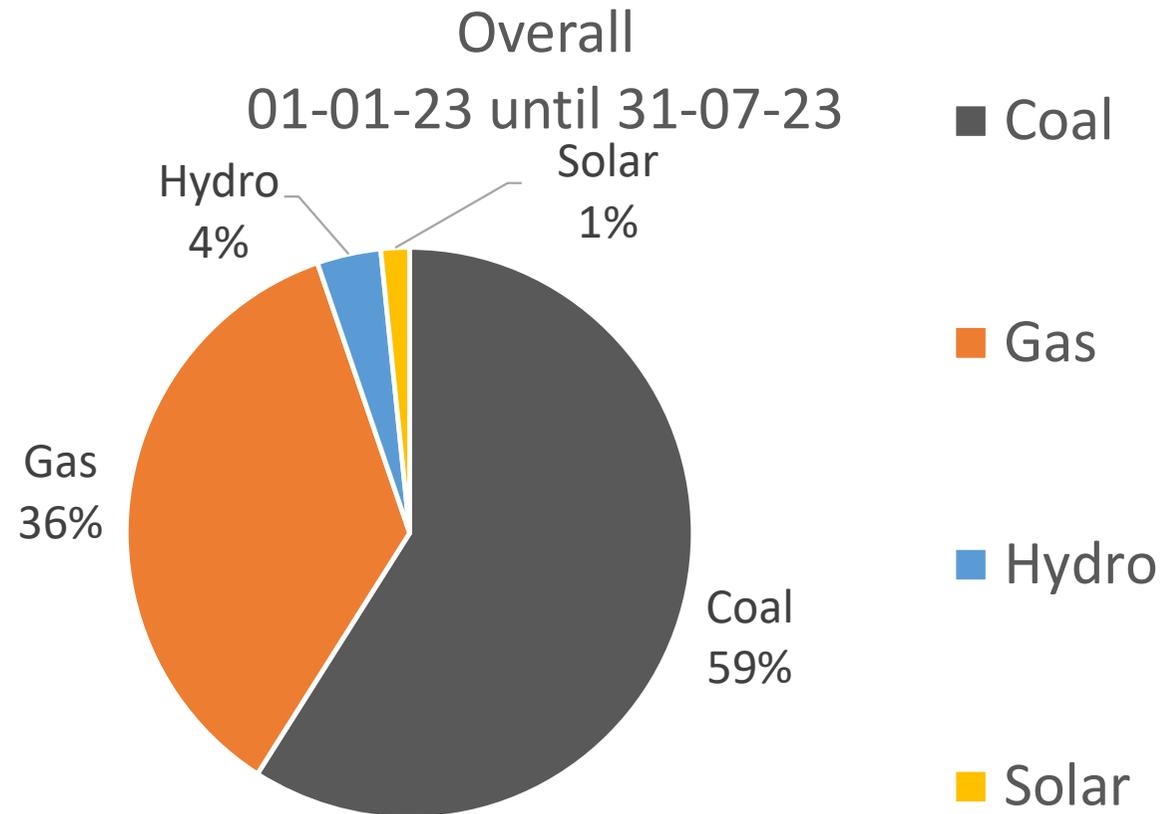


PVPS

Connected Capacity (MW)



Generation Mix (MWh) – Peninsular Malaysia only



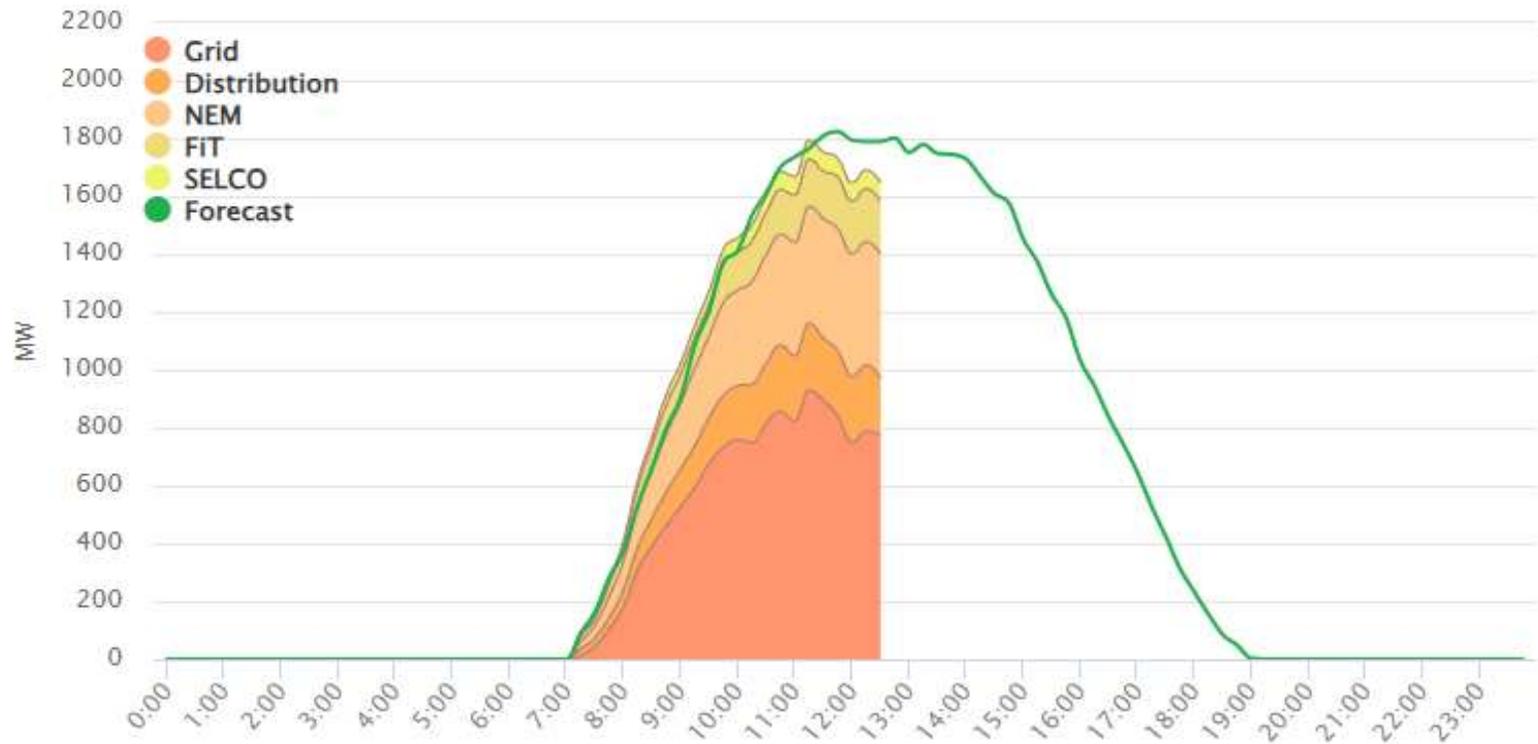
Daily Solar Profile



PVPS

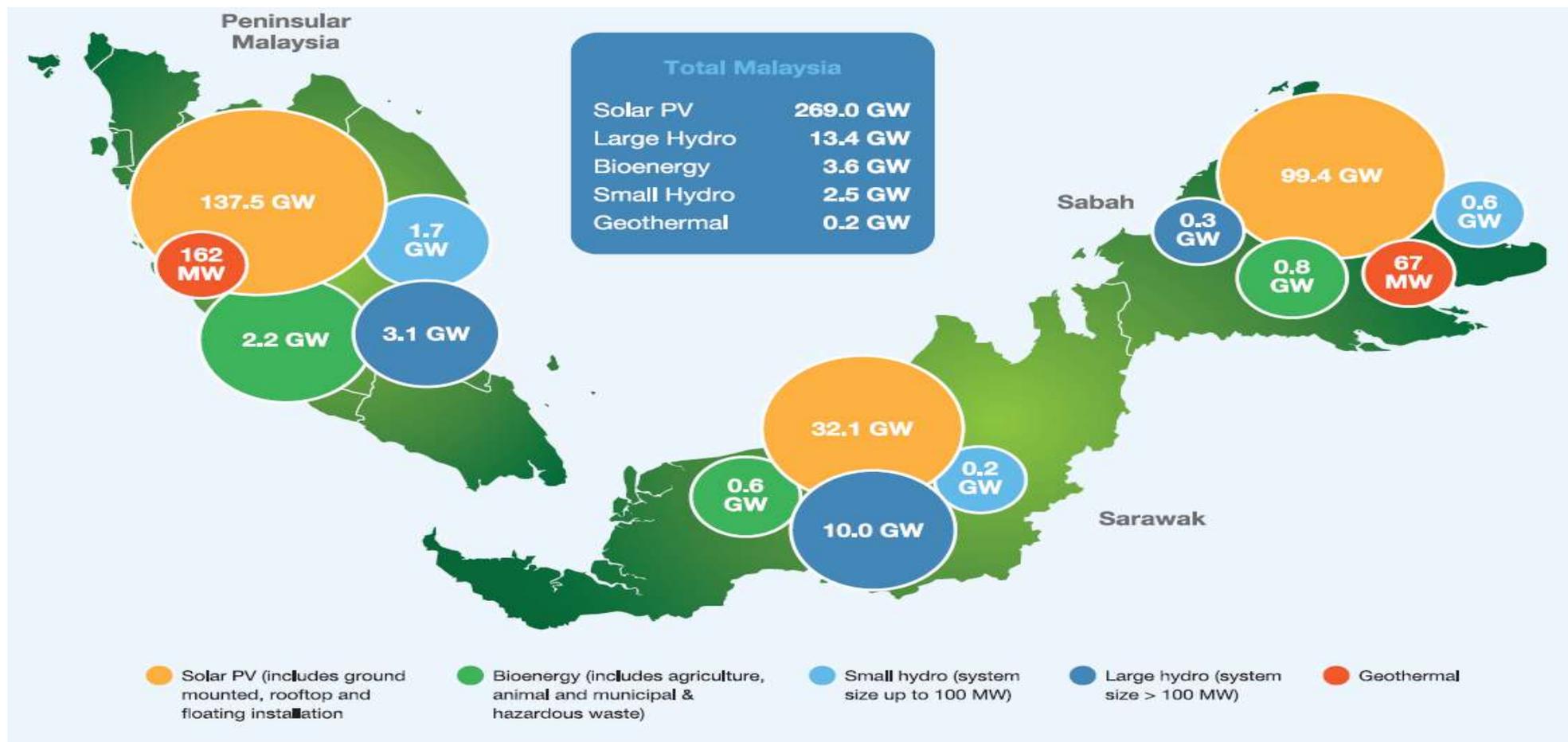
Today's solar profile

Current generation
1649MW
Peak forecast
1824MW @ 11:45
Past 1 hour change
↓ -104MW
Next 1 hour forecast
↓ -23MW



NEM, FIT and SELCO values are estimates based on registered data

RE Potential



PV Market Growth



- Solar installed capacity has increased by 75% from 2020 to 2022
- Solar average annual growth rate at 5.1% in total energy mix from 2020-2022

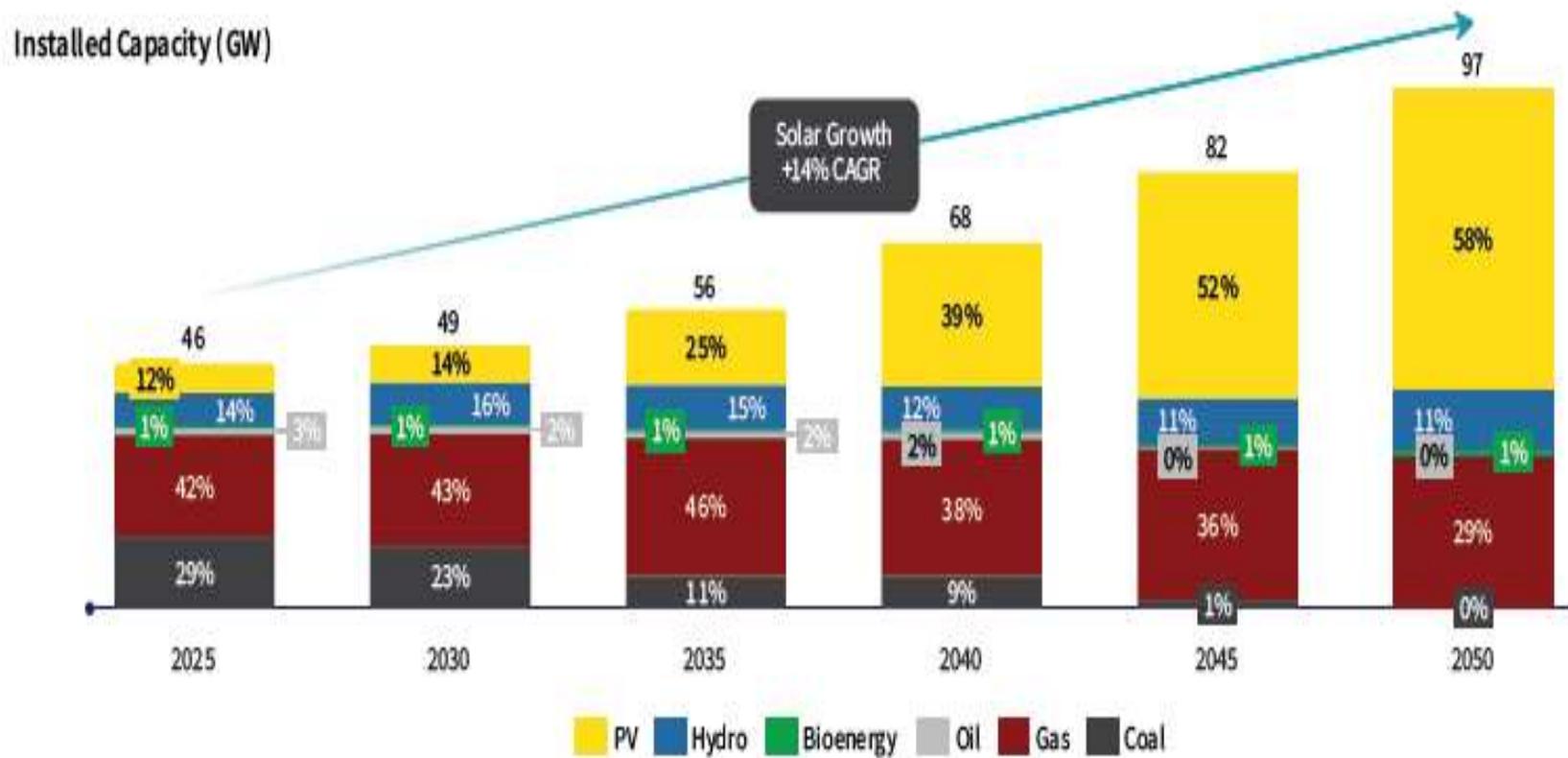


Overview of market drivers

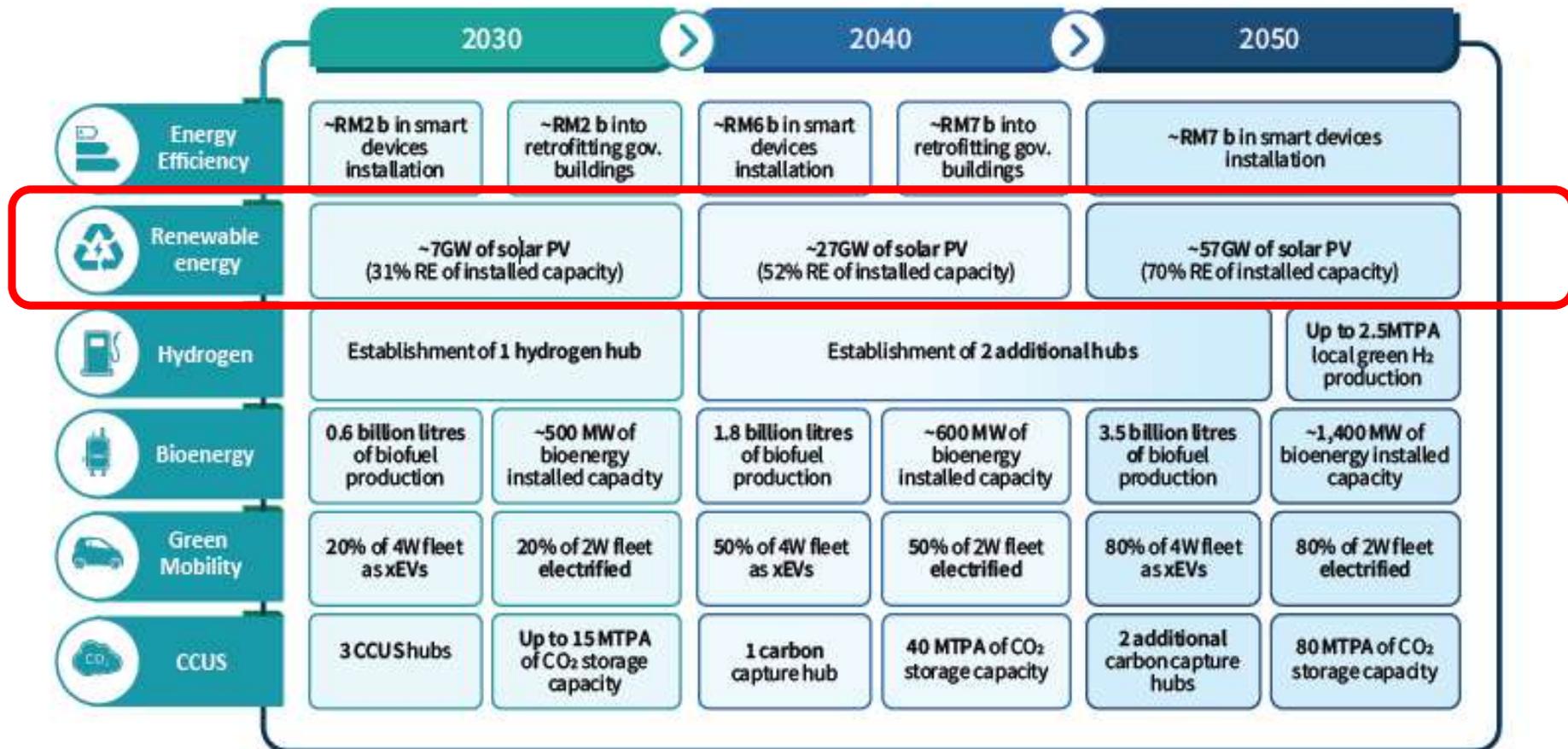


- Feed-in Tariff Scheme (FiT)
 - ✓ 2011-2016
 - ✓ 322MW
- Large Scale Solar Auction (LSS)
 - ✓ 2017-2022
 - ✓ 1361 MW
- Net Energy Metering (NEM)
 - ✓ 2016 – present
 - ✓ 843MW
- Virtual PPA for Solar (<30MW)
 - ✓ Started 2023 with 800MW quota
- Self-Consumption (SELCO)

Projected power system installed capacity mix 2050



Potential Investment Opportunities



Overview of market drivers



- Financing
 - Tax Incentives
 - ✓ Green Investment Tax Allowance (GITA)
 - ✓ Green Income Tax Exemption (GITE)
 - ✓ Green Technology Financing Scheme
 - Others
 - ✓ Government fund allocation of USD 17.0 million for solar installation in government buildings
 - ✓ USD 435 million fund to facilitate realization of the National Energy Transition Roadmap (NETR)

National Energy Transition Roadmap



- Recently launched in 2023
- 10 Flagship Projects (with high impact)
- RE Zone, Solar Parks
- Accelerated investments for transmission and distributions
- RE Exchange hub for cross-border RE trading
- TPA Framework for sourcing of RE
- Promote floating solar and agrivoltaic technology
- 70% RE Share and 59GW of solar

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Malaysia's prime minister pledges economic shift away from fossil fuels

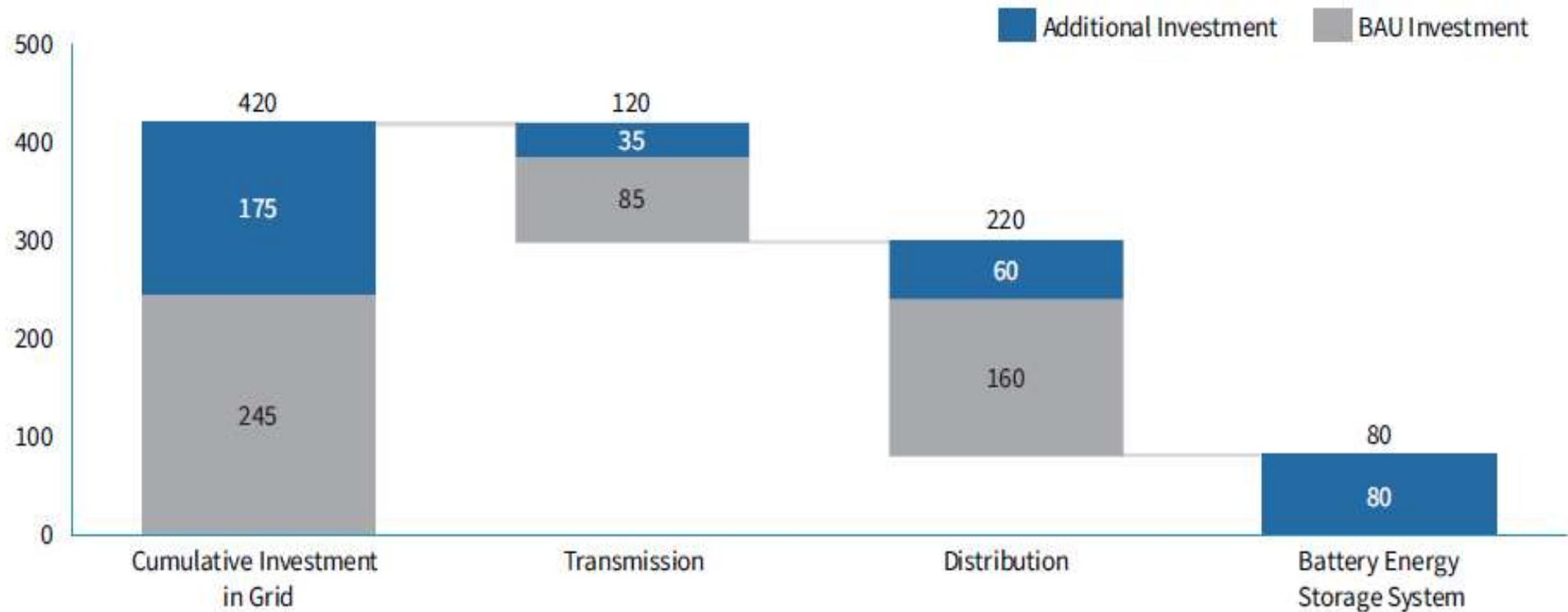
The government is also pledging US\$430 million for "marginally bankable" energy transition projects and accelerating the launch of a renewable energy exchange for cross-border trade, both part of its new energy transition roadmap.



Projected power system cumulative investments



Projected Grid Cumulative Investments 2023-2050, MYR Billion (2023)



First Bi-Facial Solar PV For Car Park Rooftop – Proton Automotive Factory



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Largest Floating Solar



- 98 MWac
- Completion date: 2024



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PV Industry outlook



- Most PV installed - Mono crystalline
- Rooftop solar PV price/kW ~ USD850
- Near Future
 - Flexible solar panel
 - DSSC – Dye Sensitized Solar Cell

Solar PV in the 100% RES Power System



- Existing penetration limit is 6000MW (from grid stability study)
- Current solar capacity is 2600MW
- Higher solar penetration will be supported by energy storage (BESS etc)
- Grid Connected BESS - 2030
- Others
 - Issues on stranded asset (by utility) if customers shifting to selco

www.iea-pvps.org

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