



# Presentation to the Philippine Institute for Development Studies

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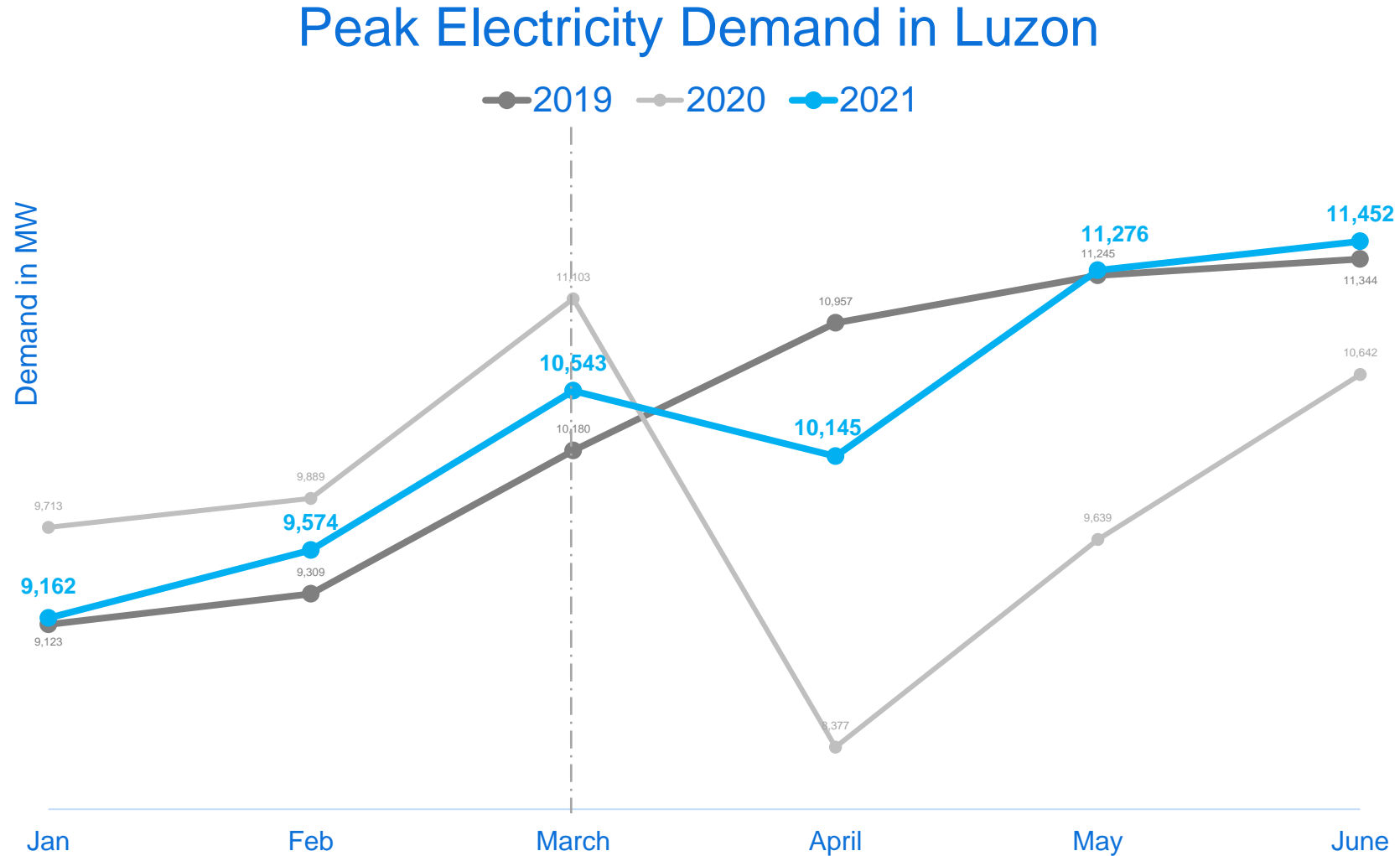
20 September 2021



# Key Messages

- The Philippines faces a tight power supply situation in the medium term
- There is an opportunity for renewable energy to help address the supply challenges in a sustainable manner and foster a green-led recovery
- Government policies are in place, but needs effective execution and enforcement
- ESG-oriented capital is helping spur private sector investments in sustainable infrastructure

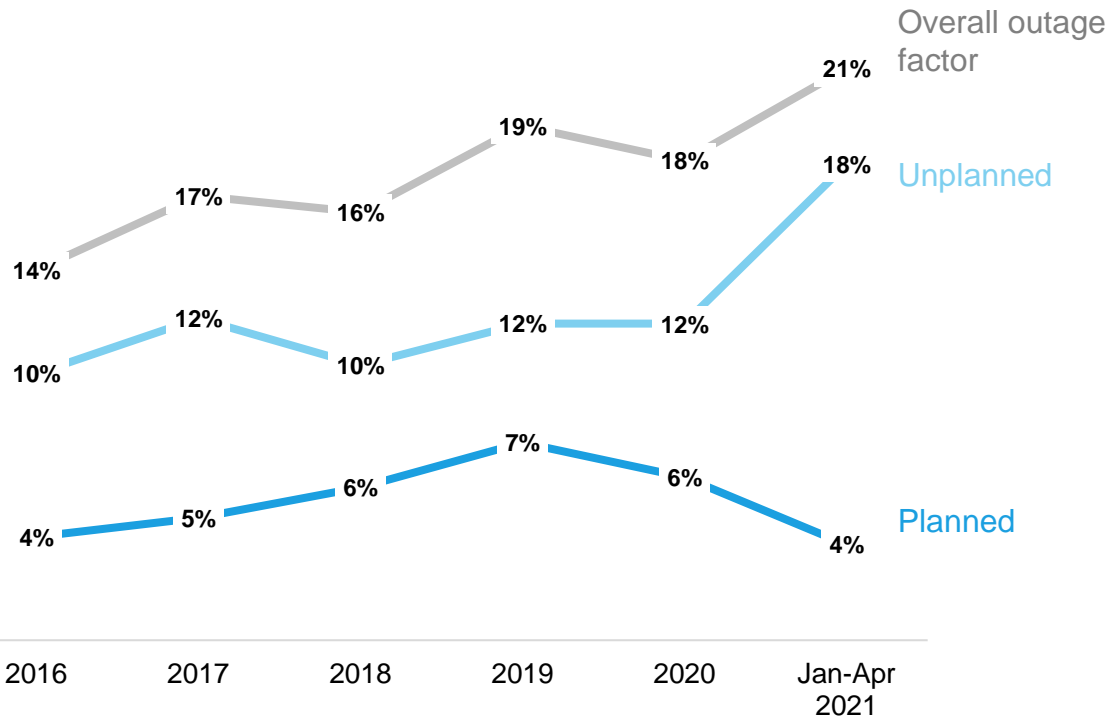
# Luzon peak demand has rebounded to pre-COVID levels



# Supply constraints resulted in tight capacity...

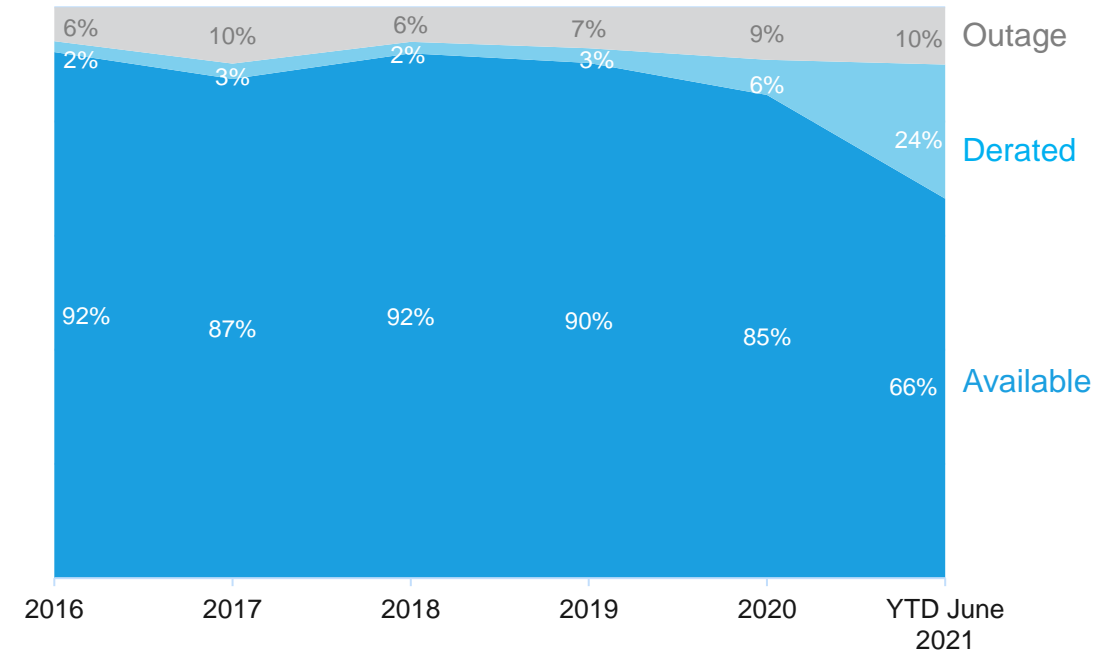
Increasing trend in forced outages of coal plants due to aging

**Outage Factor of Luzon Coal Plants**  
2016 – 2021



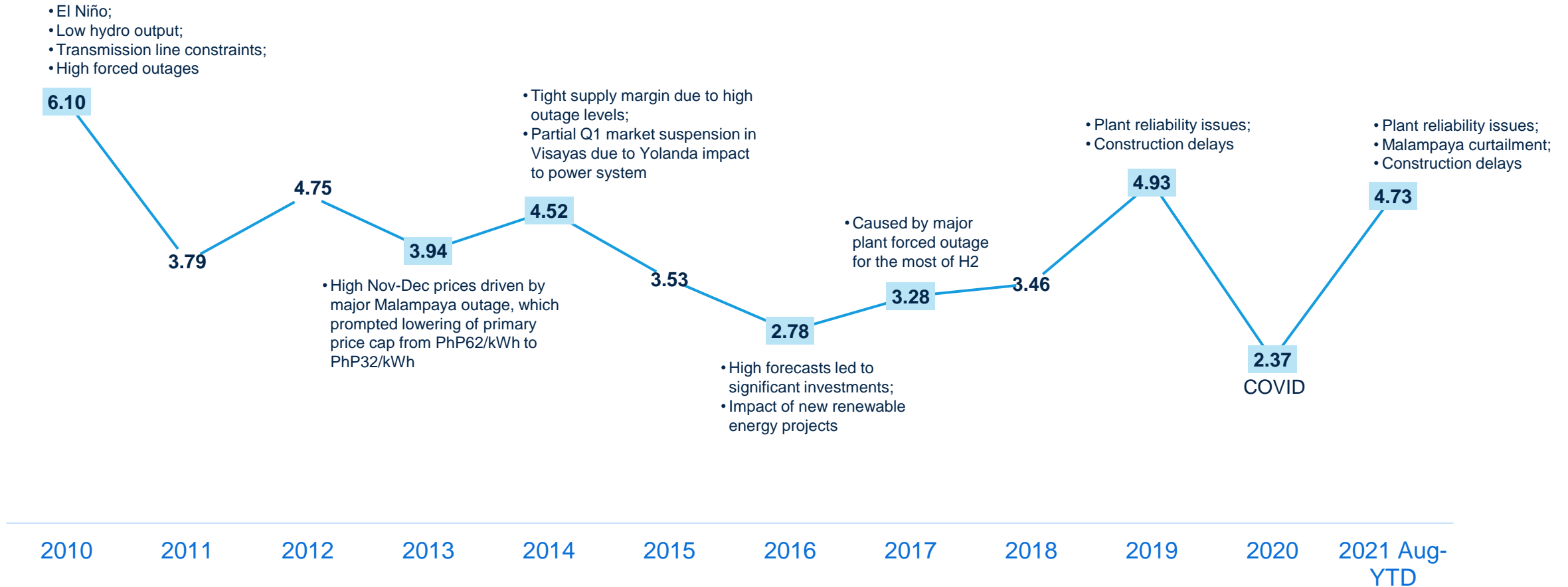
Increased observance of deration in gas plants in 2021 due to extended Malampaya restriction

**Percent Availability of Malampaya Gas Facility**  
2016 – 2021



# ... and higher spot electricity prices

## Average WESM Prices in Luzon Load Weighted Average Prices in PHP per KWh



# Several challenges beset the power sector in the short to medium term



**1** Malampaya in decline



**2** Construction delays



**3** Grid constraints



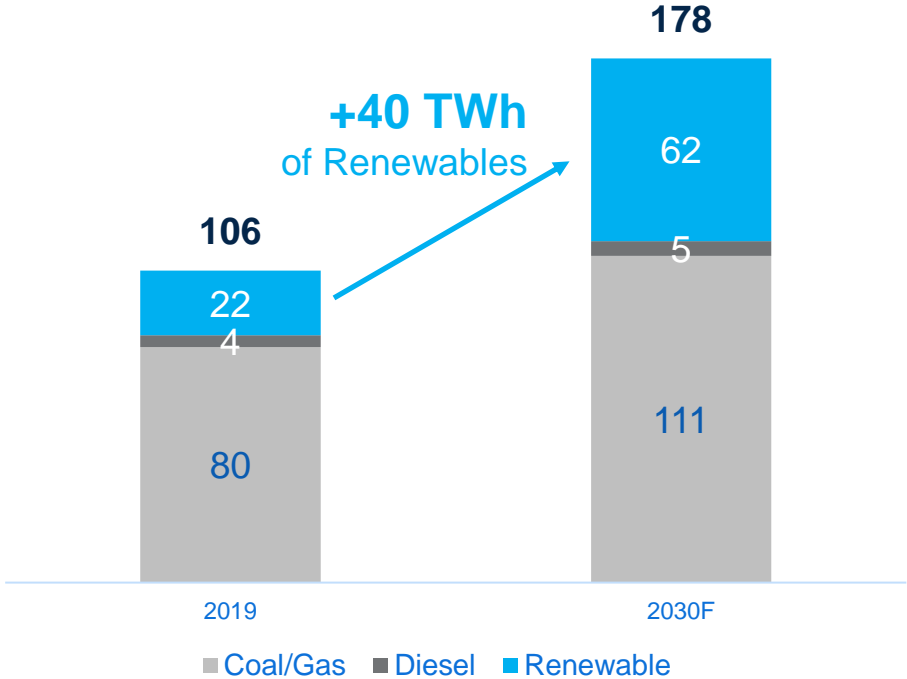
**4** Aging power plants/  
declining reliability



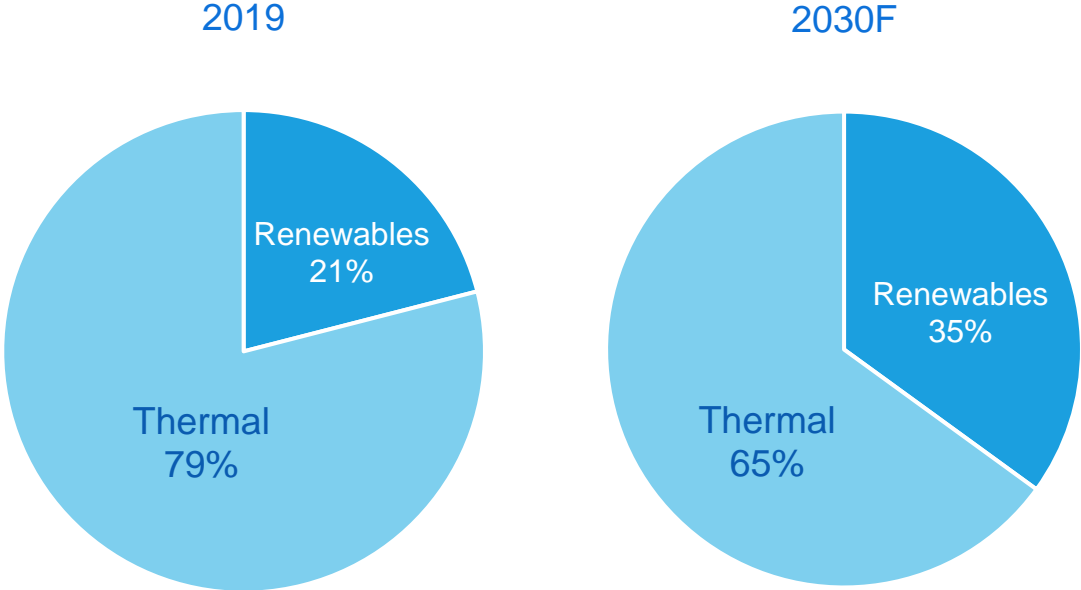
**5** Fuel price volatility

# The Philippines set a goal of achieving a 35% renewable share of output by 2030

## Total Output of the Philippine Energy Sector In TWh

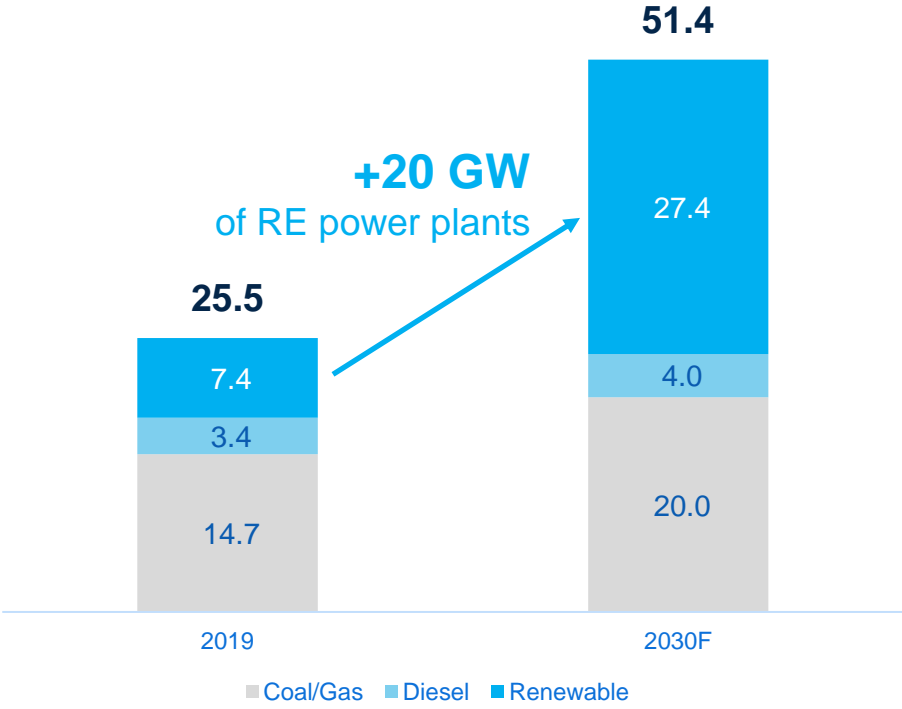


## Technology Share in Energy Output Philippines, in TWh

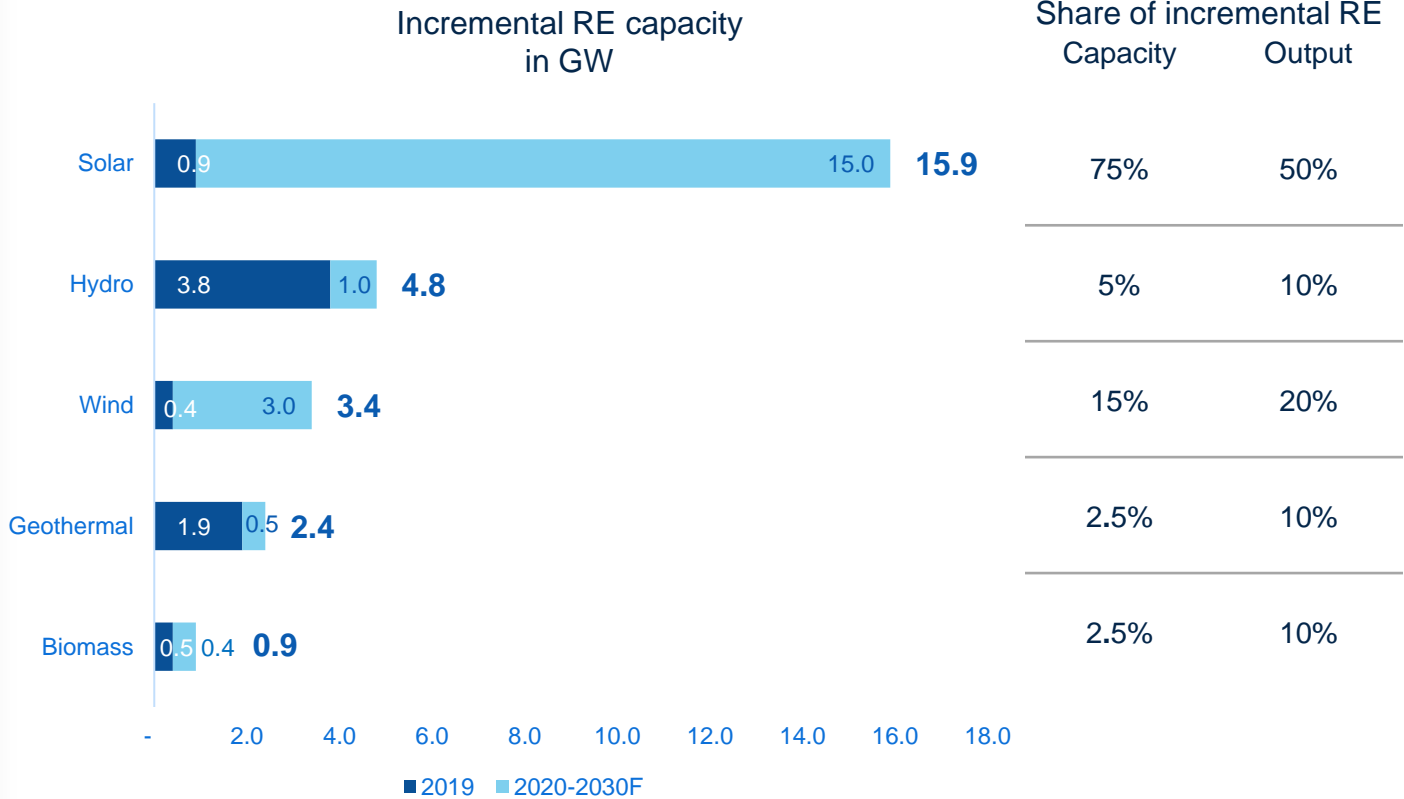


# To attain 35% in renewables output, the industry needs to build 20 GW of RE power plants

**Total Installed Capacity**  
Philippine Energy Sector, in GW



**RE Installed Capacity in 2030**  
Philippines, in GW and %, assuming a Solar-driven scenario





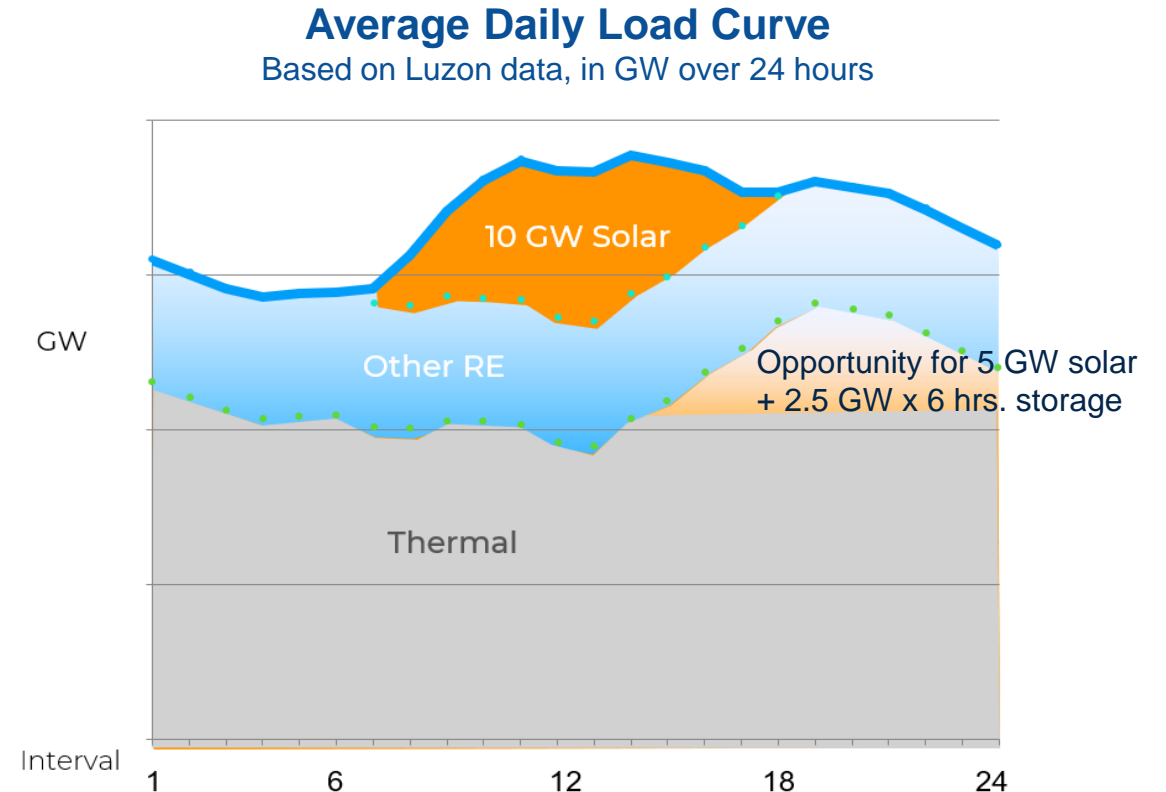
# The case for a Solar-driven RE mix: Flattening the Curve

- 1 Lowest LCOE
- 2 Flexible size and location
  - Distributed generation/at load center
  - Diversify location of large utility scale plants
- 3 Relatively predictable resource
  - Intermittency is addressable with storage
- 4 Produces at right time of day and year



Outperformed expectations in Vietnam (17 GW), Australia (22 GW), India (44 GW), and China (253 GW)

High level 2030 scenario analysis for 15 GW solar + storage

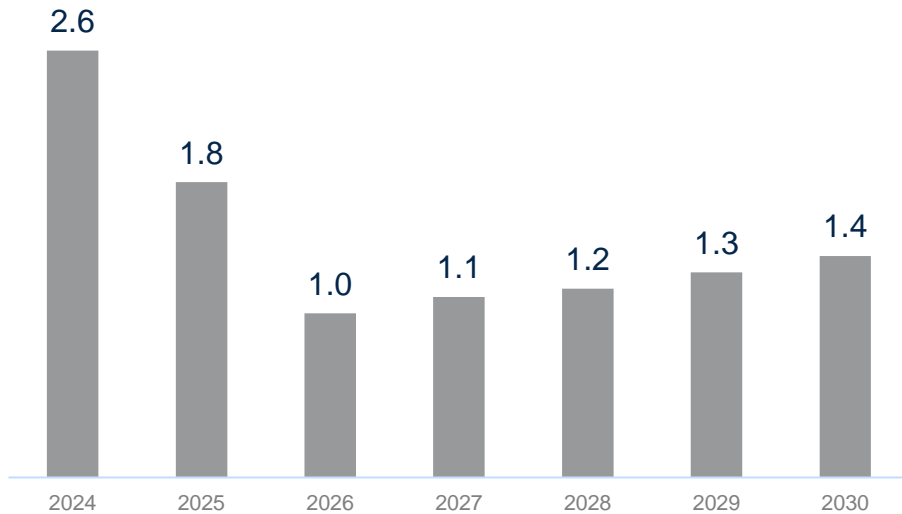


# Renewable Portfolio Standards (RPS) policy is a key enabler to reignite RE investments

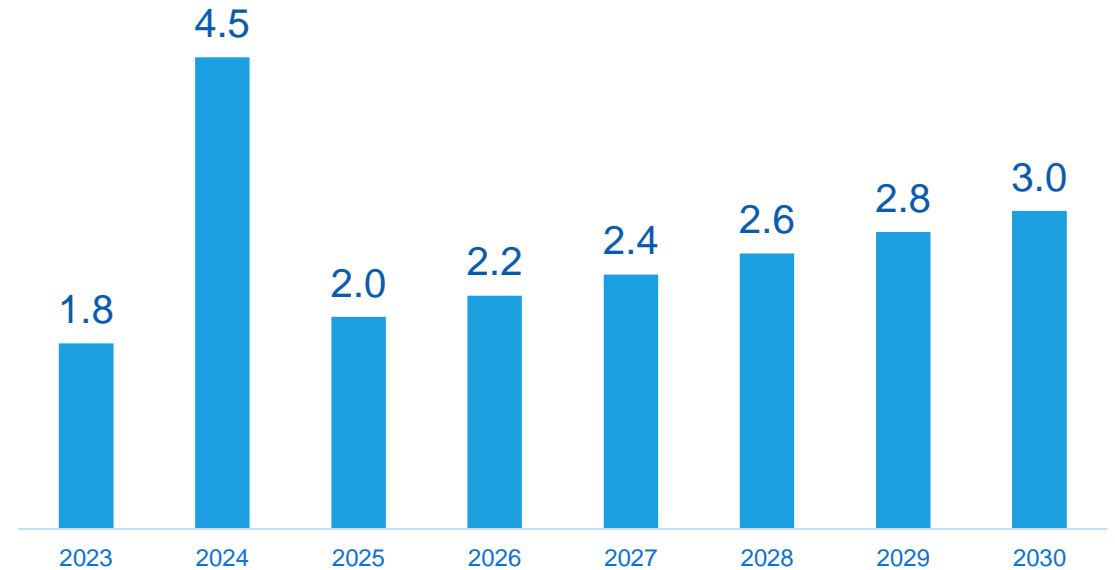
Baseline RPS scenario: **+1%** annual increment  
2030 outcome: **26%** RE share of output

Upside scenario: Adjust to **+2.52%** annual increment by 2023  
2030 outcome: **35%** RE share of output

### Baseline Incremental RE Capacity In GW



### Upside Incremental RE Capacity In GW



# Other key policy enablers to drive renewables growth



Green energy  
auction



Green energy  
option program  
For 100kW+ customers



Renewable energy  
certificate market



Reserve market

# There is strong private sector appetite for sustainable investments

- 1 ESG investing has become mainstream; global green/social bonds have increased 11-fold from ~US\$50 billion in 2015 to over US\$570 billion in 2020
- 2 Several major Philippine power companies have announced planned investments in renewables
- 3 Renewable investments in the country could reach well over US\$20 billion within the decade, and create over 50,000 jobs in direct employment

A scenic landscape featuring several wind turbines on a hillside. The sun is setting behind the turbines, creating a warm, golden glow and casting long shadows. The sky is filled with soft, colorful clouds in shades of blue, purple, and orange. The foreground shows a dirt road winding through the green hills.

Thank You