

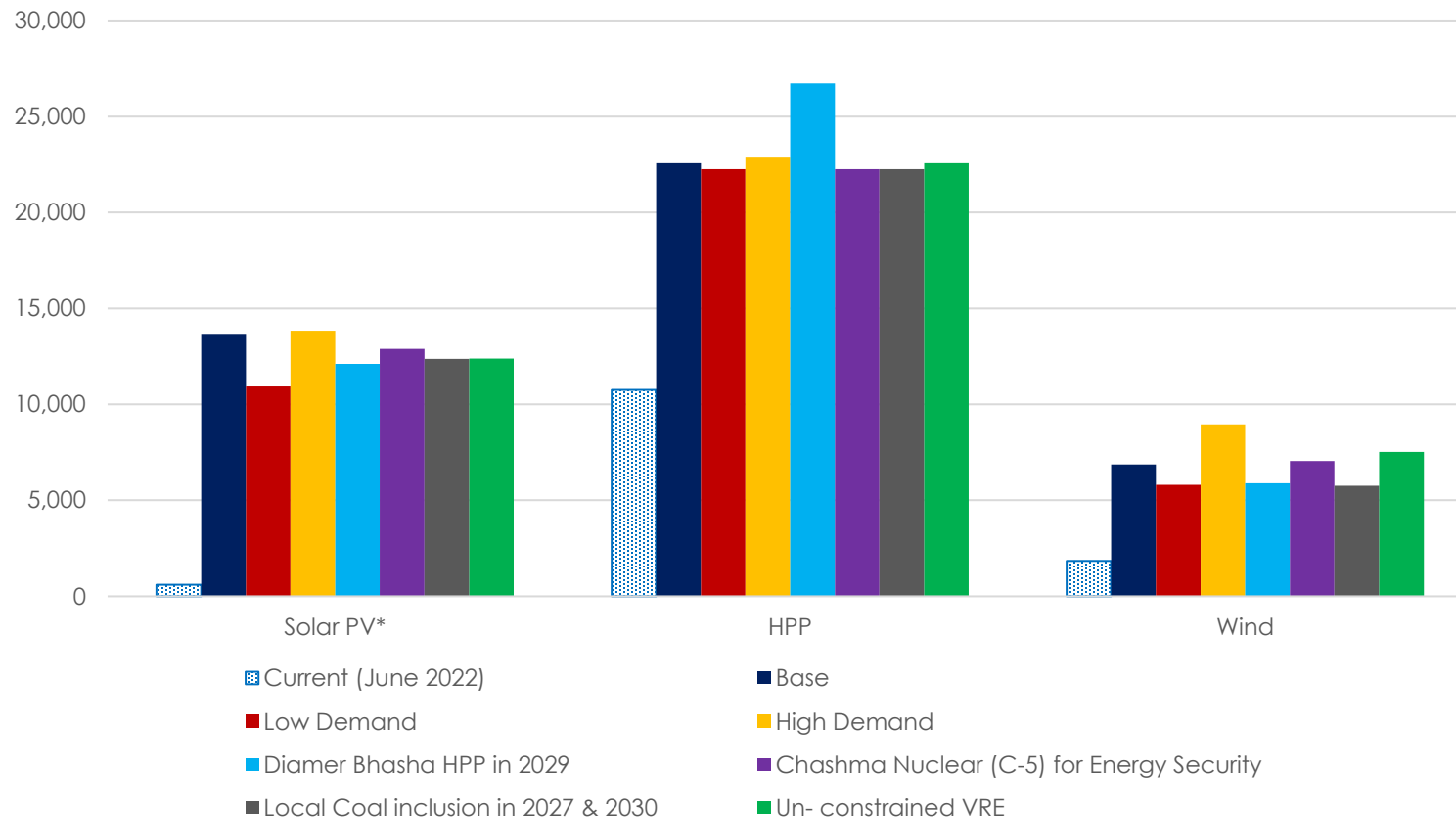
Dissecting Indicative
Generation Capacity
Expansion
Plan (IGCEP) 2022-31
from Energy Transition
lens



**Resources
Future**

Substantial growth in renewables is projected in all scenario forecasts of IGCEP

Installed Capacity by 2030 _Renewables (MW)

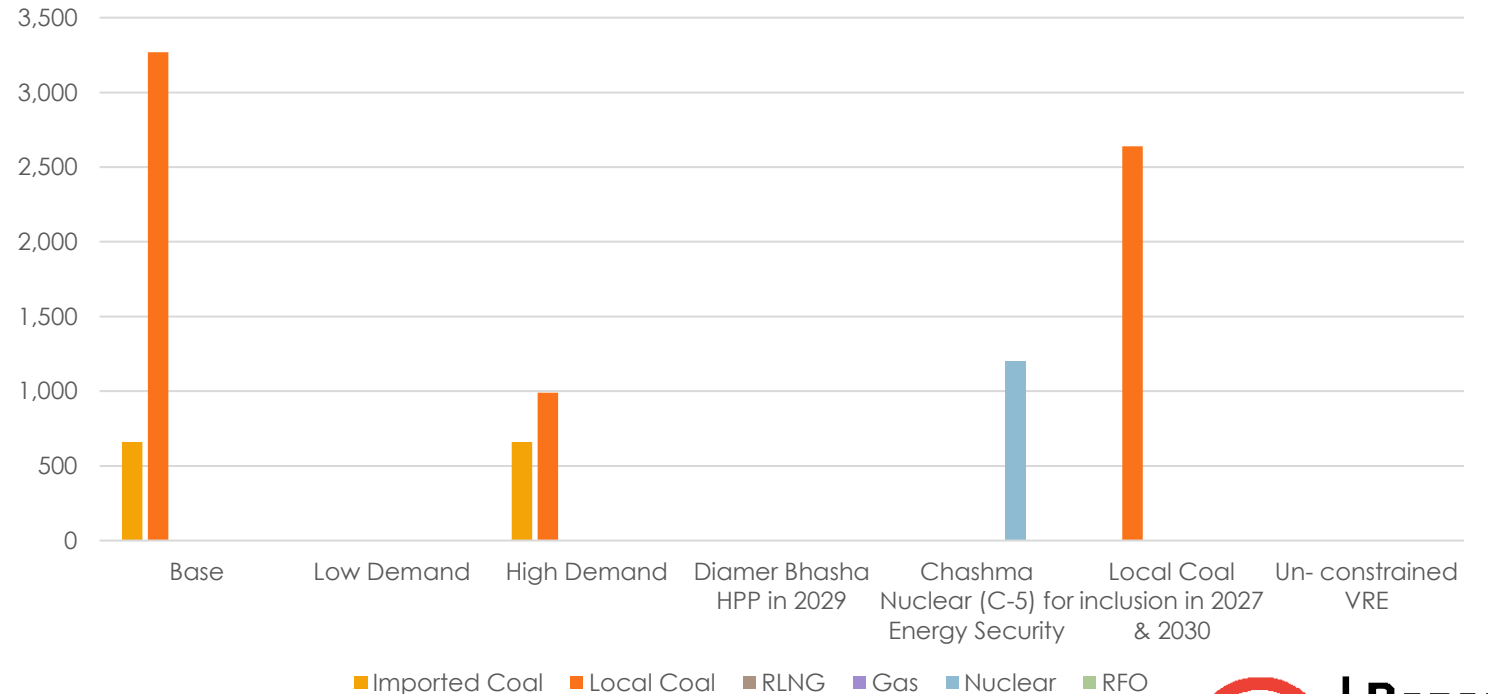


- Solar capacity additions are maximum in 'high demand' and 'base case' scenarios.
- HPP capacity additions almost similar except in 'Diemer Bhasha HPP in 2029' Scenario forecasting additional 4171 MW of hydro power.
- Wind capacity additions are lowest among renewables ranging from 3960 MW to 7114 MW.

No new RLNG, Gas, or RFO plant is considered under any IGCEP scenario.

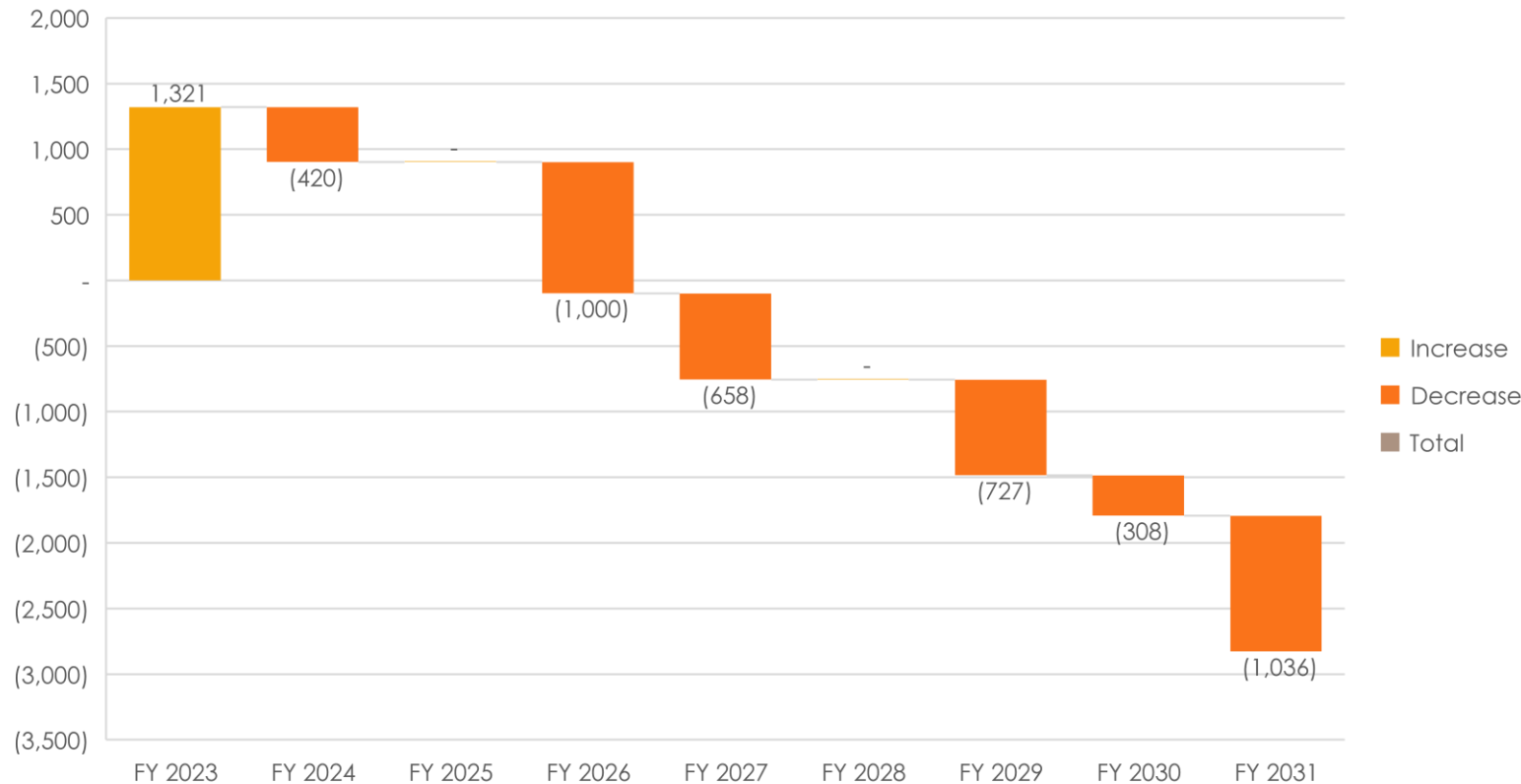
- No new RLNG, Gas, or RFO plant is considered under any scenario. Existing plants get retired.
- Imported coal and existing RLNG shall contribute just 8% and 2% in the total energy requirements (due to contractual binding).
- No capacity additions in Nuclear, except Chashma Nuclear 5 scenario with 1200 MW additions

Installed Capacity by 2030 _Thermal (MW)



Base Case for IGCEP forecast considerable shift away from thermal power generation

Base Case _ Net Thermal Power Capacity Additions (MW)



➤ **8,021 MW capacity retired, and 5,193 MW added.**

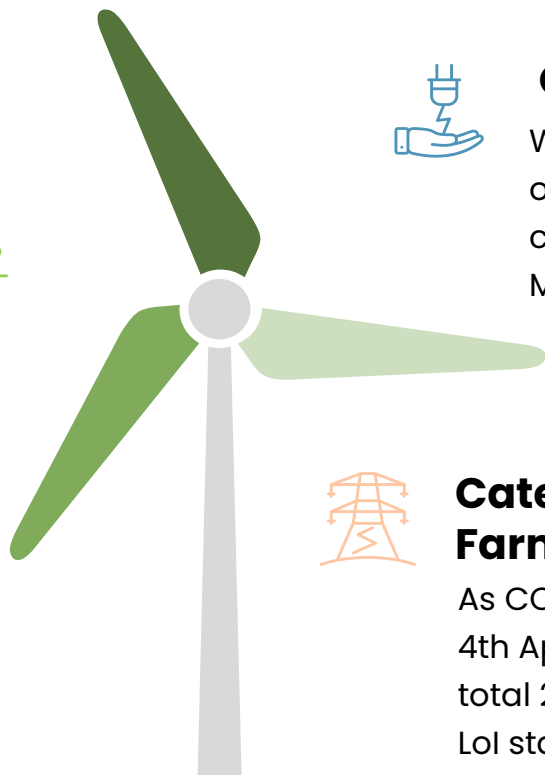
➤ Capacity additions include Thar TEL, Trimmu, Thal Nova, Jamshoro Coal (U #1), Thar-I (SSRL), Gwadar

➤ KE to add 990 MW local coal based power plant

Limited opportunity for new wind project development

FY 2028

Approximately half of Capacity additions in FY 2028 only



Opportunity

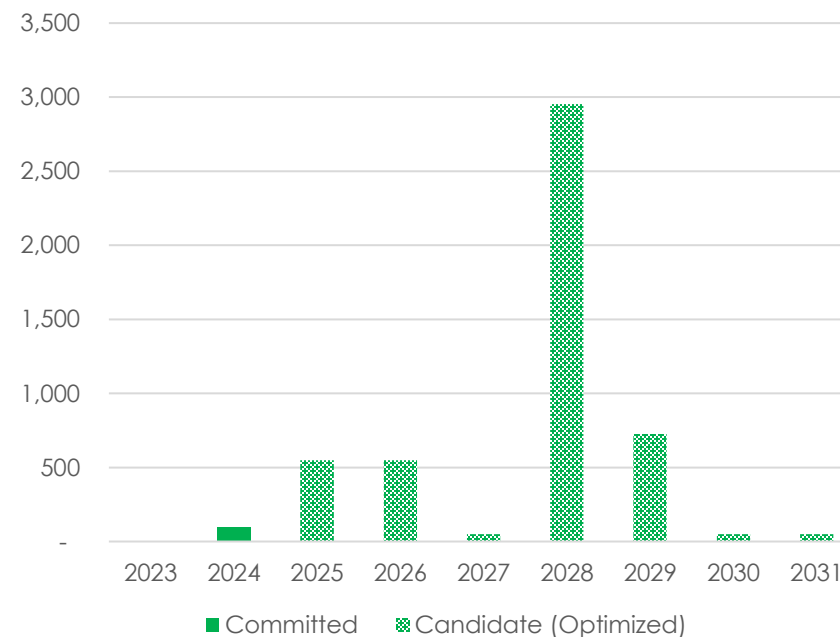
Wind 100 MW committed only. Private sector competes against 4,930 MW.



Category 3 Wind Farms

As CCoE's decision dated 4th April 2019, 31 projects of total 2139 MW are already in Lol stages

Wind Capacity Additions Base Case FY2023-2031 (MW)



Committed Projects

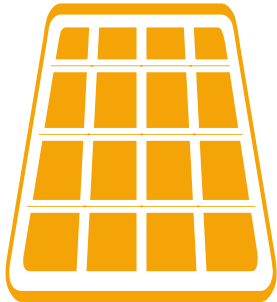
- CCoE Category I & II ARE Projects, as per CCoE's decision dated 4th April 2019.
- OR G2G Projects committed by Federal Government.
- OR Obtained LoS for private projects (As of December 2020) / PC-I approved & funding secured for public sector projects (As of March 2021)*.



**Resources
Future**

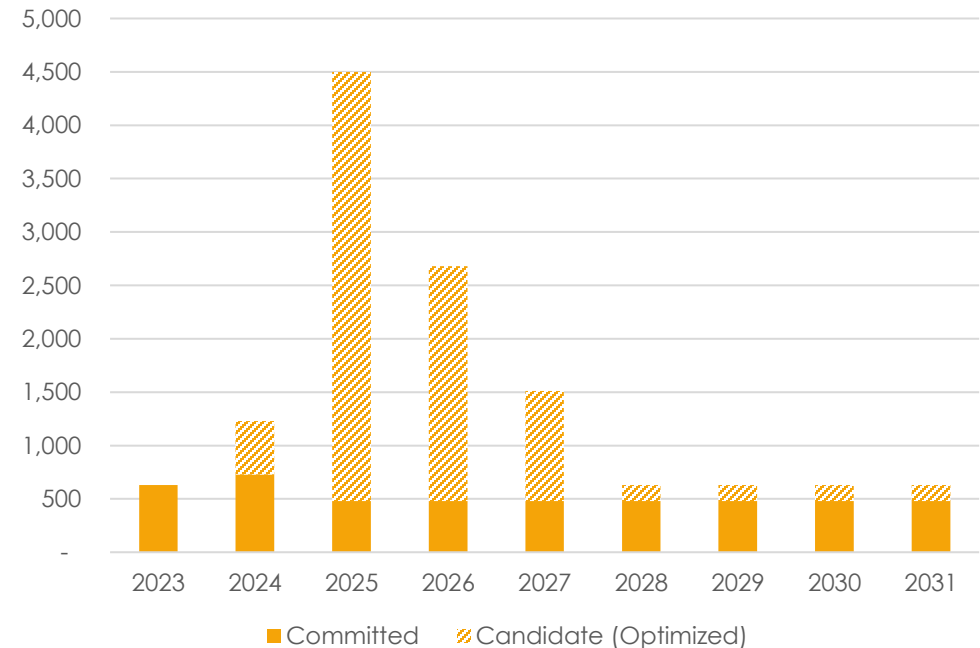
Sizeable opportunity for investing in utility scale solar PV exists in IGCEP forecasts.

- ▶ **36% of solar capacity additions are already committed** under Category I & II plants.



- ▶ Utility scale: 3,120 MWp in July 2024, 1,300 MWp yearly from July 2025 onwards
- ▶ Feeder Based (DG): 500 MWp in July 2023, 750 MWp each in July 2024 & July 2025
- ▶ Net Metering: 480 MWp yearly from July 2022 onwards. Cumulative additions shall amount to 4,320 MWp.
- ▶ Remaining **8,350 MW represent opportunity for private sector solar developers** to participate in utility scale solar power generation.
- ▶ However, As CCoE's decision dated 4th April 2019, 65 projects of total **4143.5 MW are already in Lol stage**. For new developers, the opportunity window remains limited to approximately 4,000 MW in 10 years.

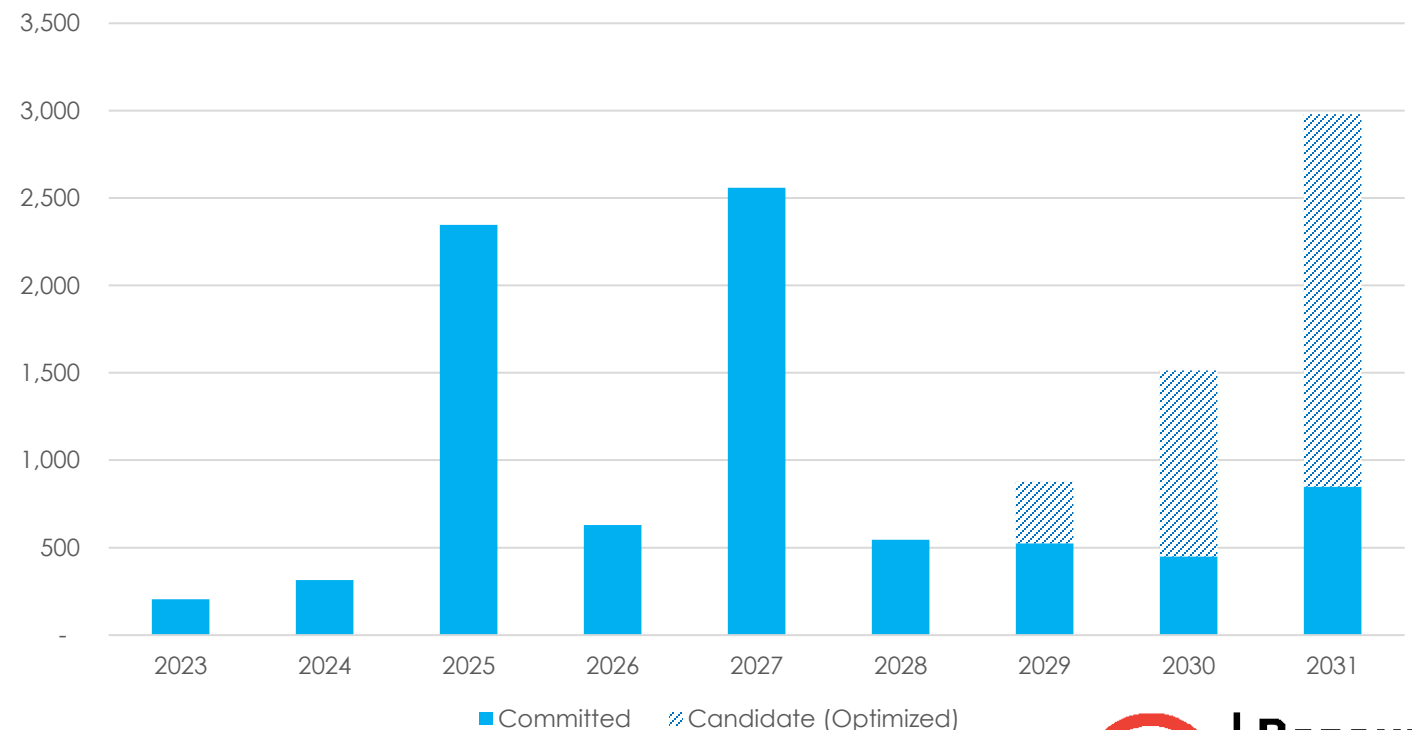
Solar Capacity Additions Base Case
FY2023-2031 (MW)



Hydro power to grow considerably, but most of the projects are already committed.

- ▶ **70% capacity additions already committed.** (Not including Diemer Bhasha Dam -4171 MW)
- ▶ A total of 46 Hydro candidates are optimized in IGCEP model
- ▶ Set to **operate at average 50% capacity factor** and therefore set to dominate among renewables in terms of energy generation.

Hydro Capacity Additions Base Case FY2023-2031 (MW)





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Resources Future is a preeminent consulting firm which provides evidence backed independent research, analysis, consultation, advisory, and training services to large and diverse client base across Pakistan.

For more information an insights on IGCEP, reach out to us.

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