

APERCC Update Renewable Energy

Preliminary Result the 8th edition Energy outlook – Renewable Energy

The 56th Meeting of APEC Expert Group on New and Renewable
Energy Technologies
The United States 6-7 April 2022



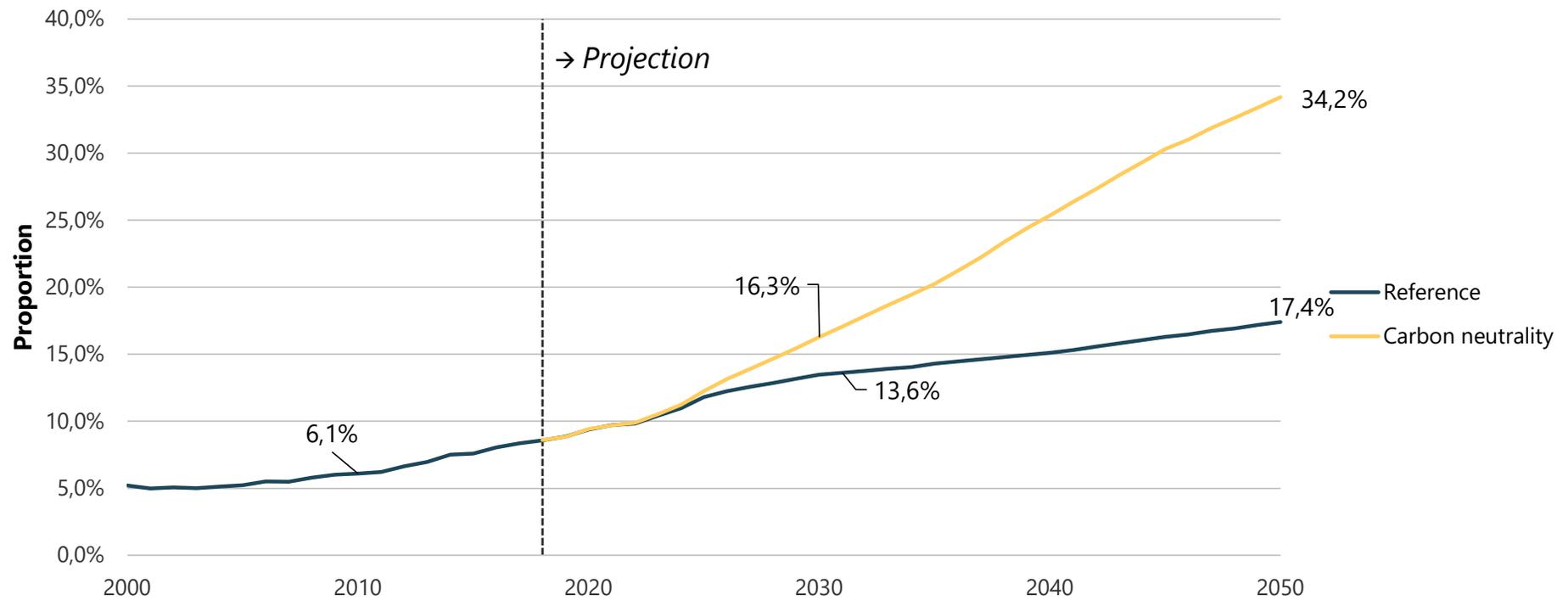
Outline

- RE share projection
- RE in the power generation
- Closing thoughts

Scenarios 8th Edition Outlook - Draft

	Reference (REF)	Carbon Neutrality (CN)
Definition	Recent trends and current policies.	Investigates hypothetical energy sector net-zero pathways for each APEC economy through 2050.

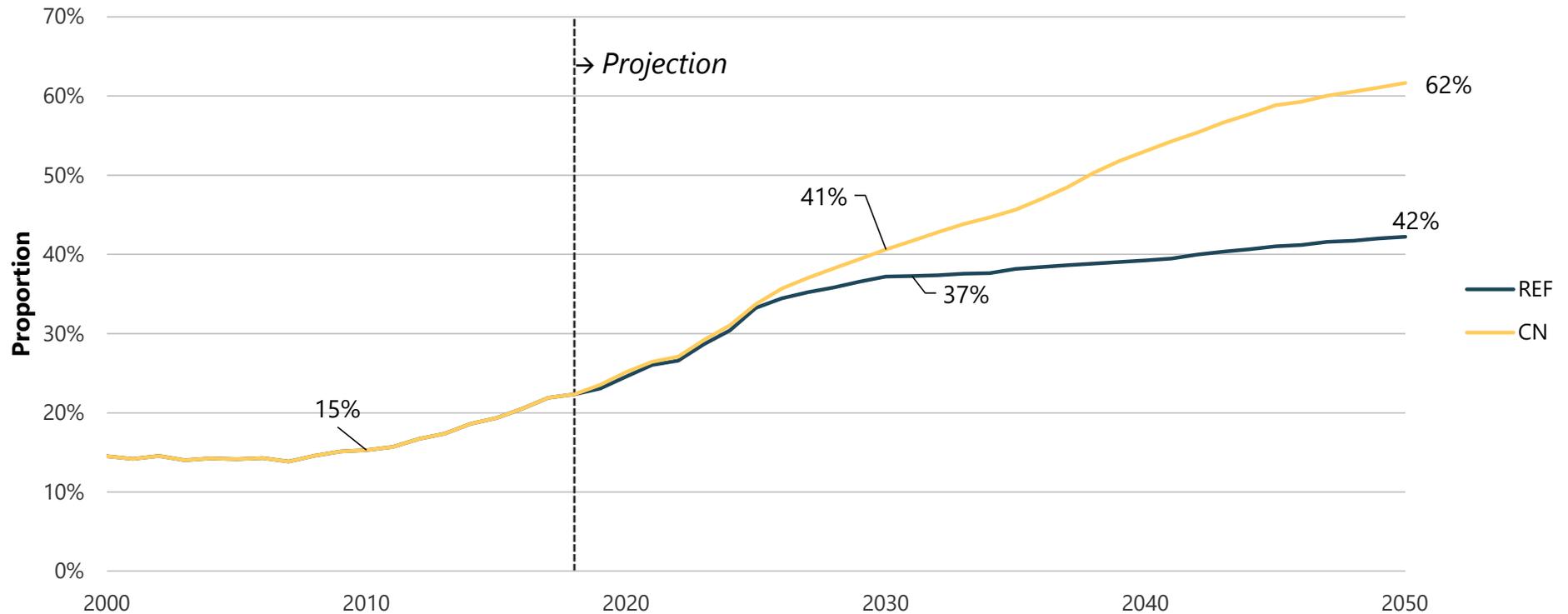
Final Energy Consumption: Modern renewables share more than doubles by 2030



Source: APERC analysis

- Based on the 8th edition preliminary results, the share of modern renewables in APEC's energy consumption to double before 2030:
 - 13.6% in 2030 in REF
 - 16.3% in 2030 in CN

Power generation: Modern renewables share more than doubles by 2030



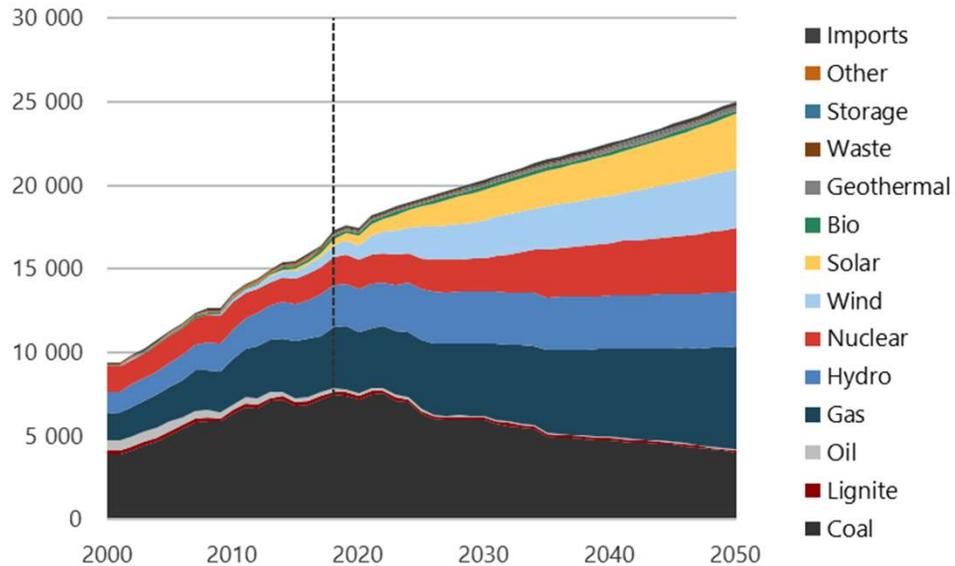
Source: APERC analysis

The 8th edition preliminary results:

- Renewables are expected to grow to a 37% share in REF and 41% share in CN by 2030.
- Solar and wind lead the growth in renewable power generation in both scenarios.

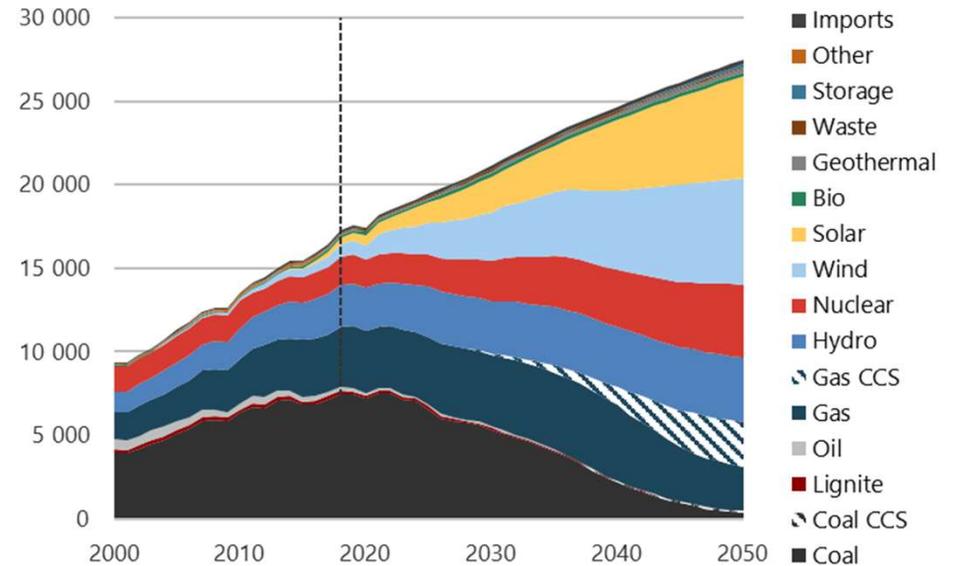
Electricity Generation: APEC

▪ Electricity Generation (TWh) – REF



Source: APERC analysis

▪ Electricity Generation (TWh) - CN

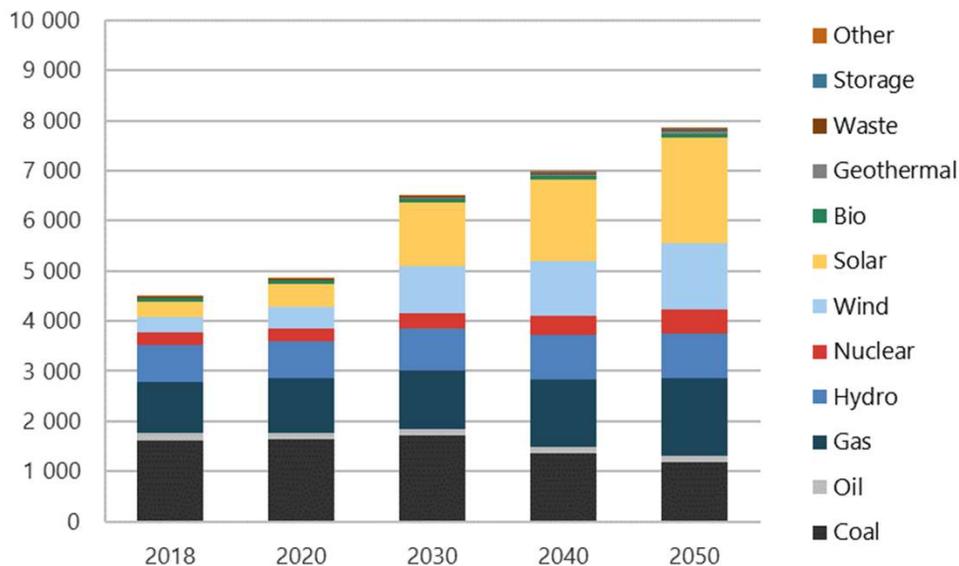


The 8th edition preliminary results:

- Electricity generation increases 45% by 2050 in REF, and more than 55% in the CN, following the demand trend.
- Electricity generated from coal will decrease significantly, especially in the CN.
- Solar and wind increase up to 27 % in share in 2050 in the REF. Wind and solar will play a crucial role in providing the growth of electricity production in the CN, with a share in 2050 up to 45 %

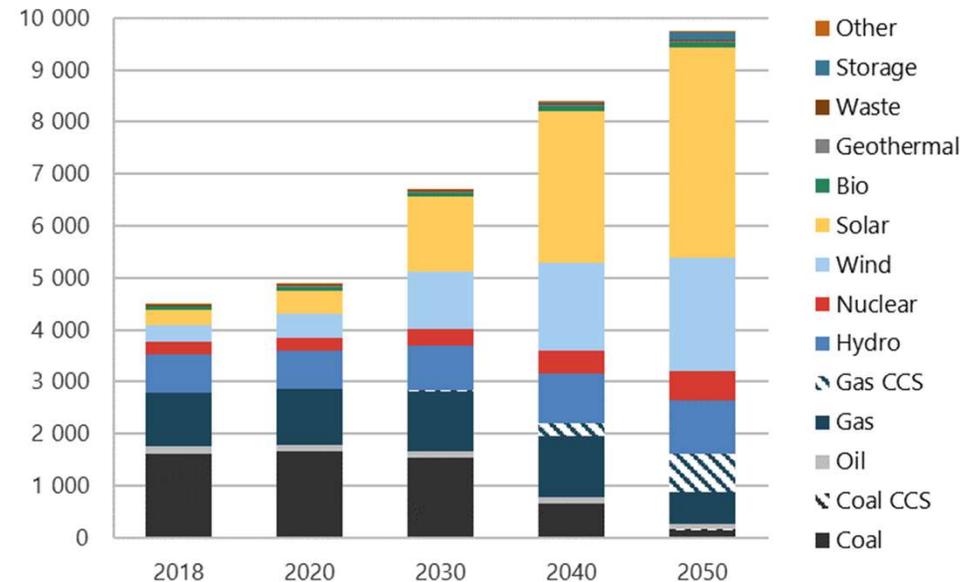
Power Generation Capacity : APEC

Power Generation Capacity (GW) - REF



Source: APERC analysis

Power Generation Capacity (GW) - CN

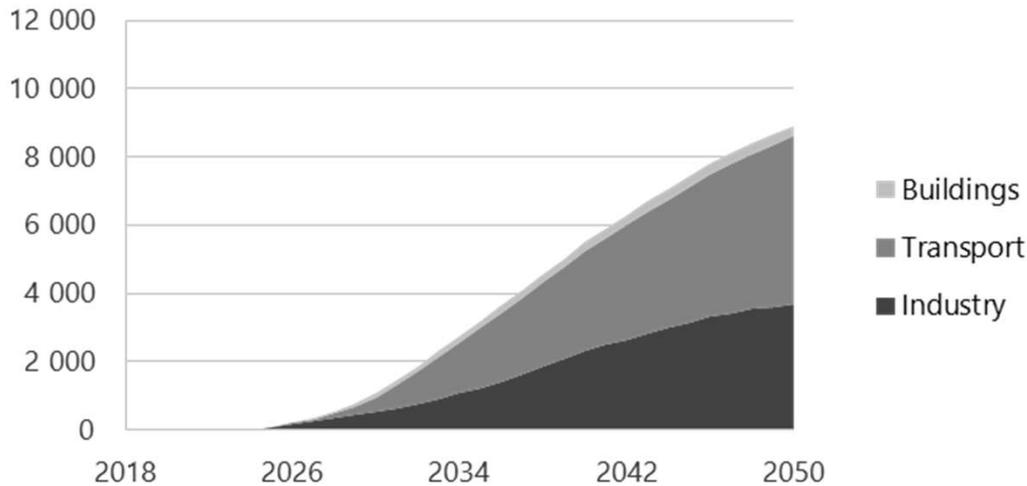


The 8th edition preliminary results:

- The installed capacity in 2018 was about 4 500 GW. In the REF, installed capacity increases by 75%, and more than doubles in the CN.
- The share of renewables in the power generation capacity reaches 57% (REF) and 76 % (CN) by 2050.
- The projections show that large increases in solar and wind capacities are expected, even in the REF (44% share) and greater in CN (64%).

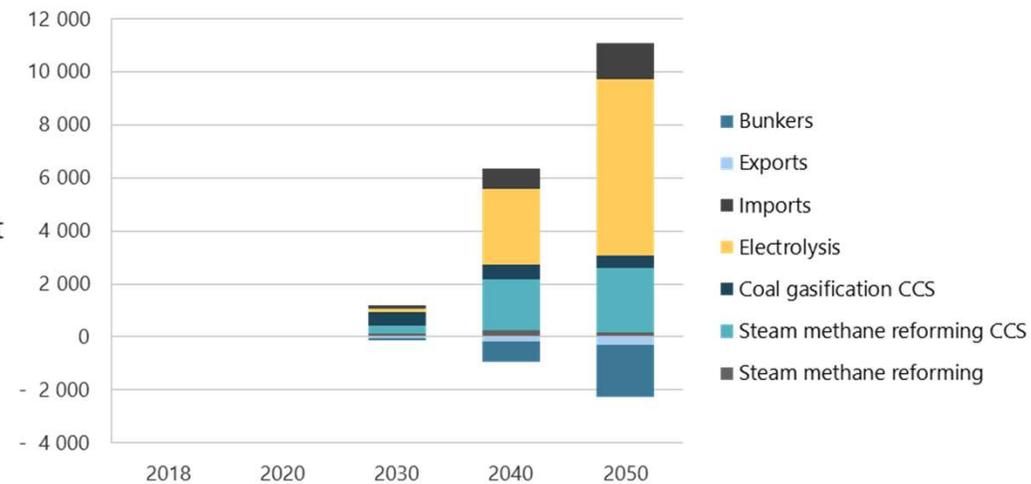
Hydrogen projection in APEC

- Hydrogen consumption in CN, 2000-2050 (PJ).



Source: APERC analysis

- Hydrogen production, imports, and exports in CN, 2000-2050 (PJ).



- Hydrogen consumption is driven by transport and Industry
- Green hydrogen becomes the dominant production process.
- Challenges to hydrogen adoption, such as : technology, standard, and demand creation, .

Closing thoughts

- APERC's preliminary model results indicate that APEC will meet its renewables' doubling goal.
- Electricity demand will increase significantly, with significant increases in solar and wind capacities in power generation are expected in the preliminary model results.
- Maintaining grid reliability will be more crucial as the electrification trend grows in all sectors, yet it will be more challenging to tackle as large VRE will come to the grid.
- Hydrogen is important for decarbonisation, and the challenges are substantial. Green hydrogen is projected to become the dominant production process in the APERC's preliminary model results.



Thank you for your kind attention.

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