

Overview of the 7th Edition 2DC scenario pathway

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Scenarios

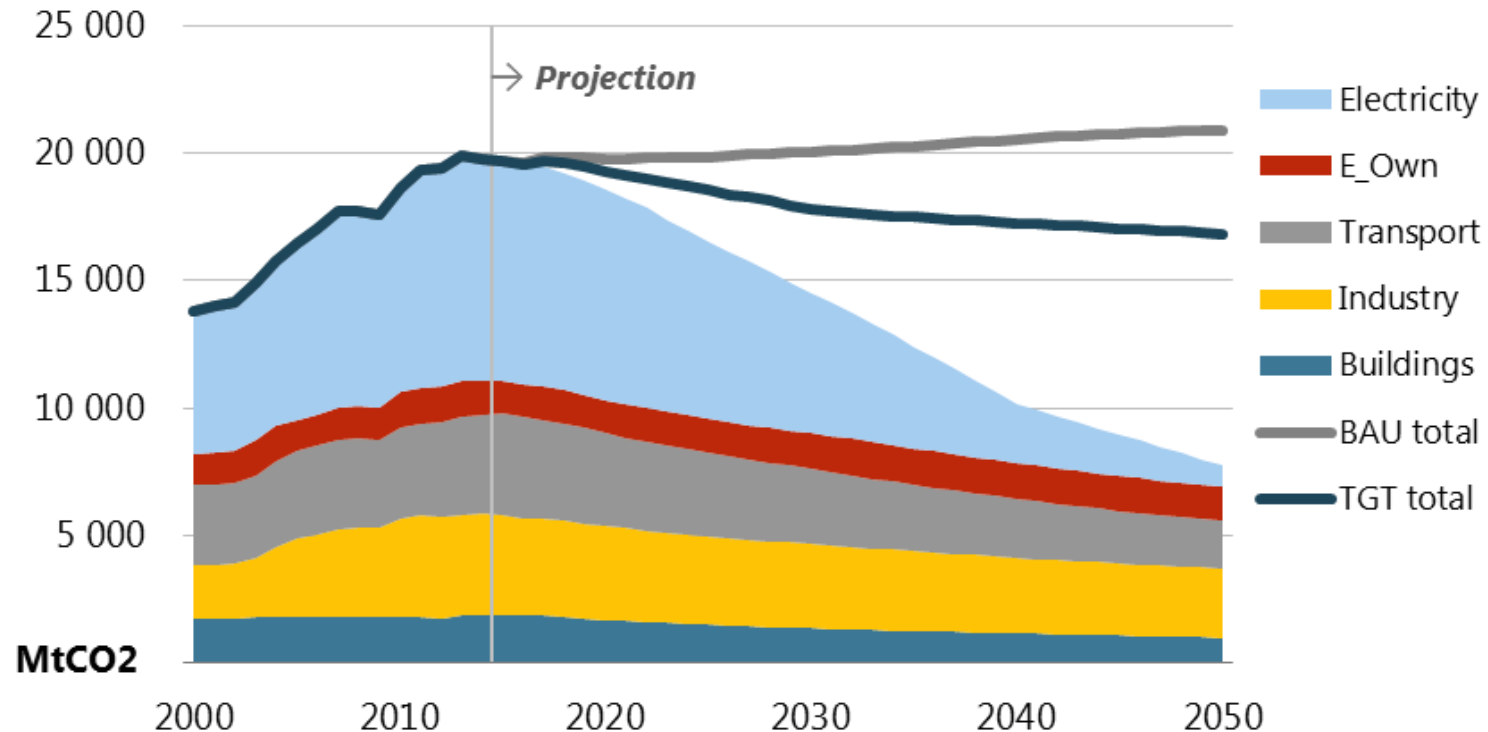
Business-as-Usual (BAU)	APEC Target (TGT)	2-Degrees Celsius (2DC)
Recent trends and current policies.	Pathway that achieves APEC-wide goals to <ul style="list-style-type: none">• reduce energy intensity 45% by 2035• double the share of renewables by 2030.	Pathway that provides a 50% chance of limiting average global temperature rise to 2°C.
Provides a baseline for comparison.	Explores implications of alternative scenarios and identifies gaps to overcome.	

2DC Scenario Assumptions

- Broadly follows sectoral carbon budgets from IEA's *Energy Technology Perspectives 2017*
- APEC-wide CO₂ emissions are constrained, decreasing to 7.4 Gt per annum by 2050
- Behavioral changes in demand sectors
- CCS for biomass and fossil plants becomes available after 2030
- Retirement age for nuclear plants extended

In 2DC, CO₂ emissions fall below 2016 levels

Total CO₂ emissions by sector in the 2DC, 2016-50

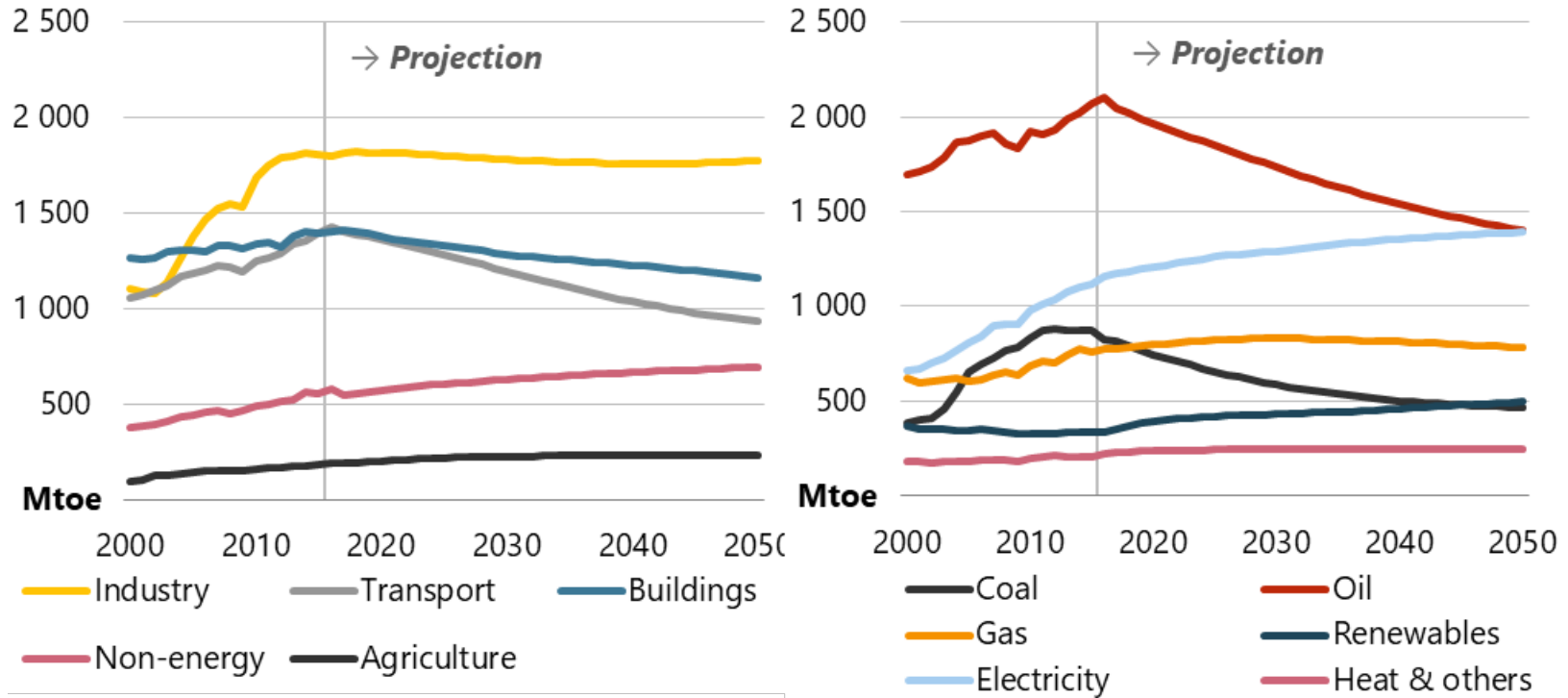


Sources: APERC analysis, IEA (2016 and 2018), IPCC (2018) and UNFCCC (2018).

Electricity sector decarbonisation drives a 2.6% per annum decrease in CO₂ emissions. Industry decarbonisation is challenging.

Transport and buildings support demand reduction of 11% below 2016 in 2DC

Final energy demand by end-use and fuel type in the 2DC

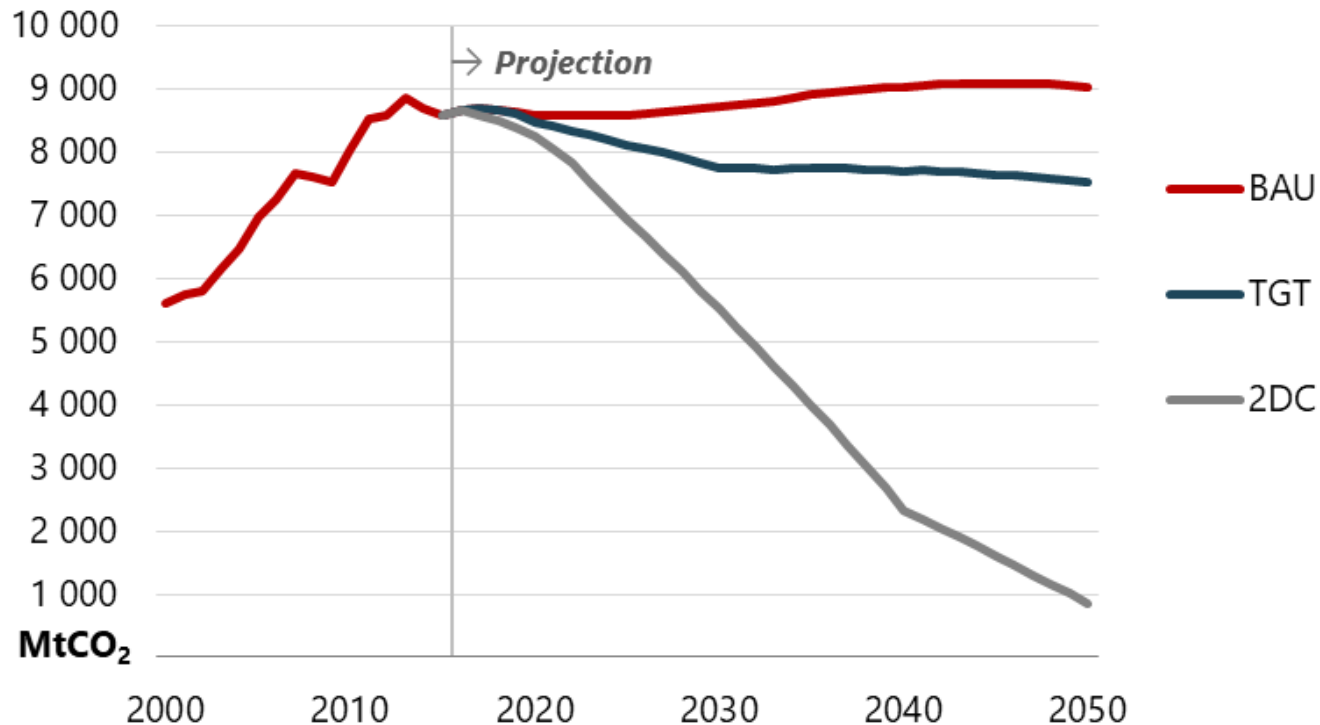


Sources: APERC analysis and IEA (2018)

Electrification and efficiency improvements are key drivers of demand reduction.

Substantial CO₂ emissions reduction required in the electricity sector

APEC electricity CO₂ emissions in the BAU, TGT and 2DC Scenarios, 2000-50

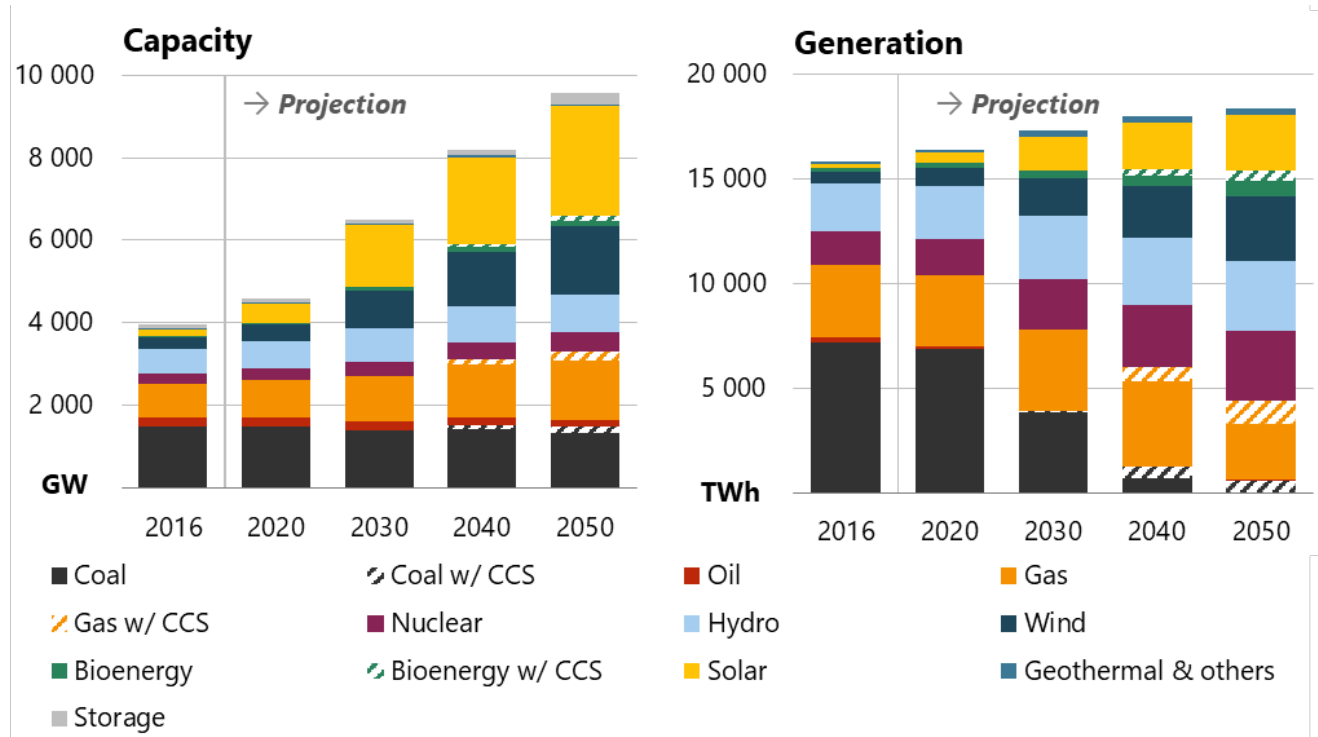


Source: APERC analysis and IEA (2018)

The carbon intensity of electricity generation decreases by 92%.

A range of technologies and fuels are required in the 2DC

APEC power capacity and electricity generation in the 2DC by fuel, 2016-50

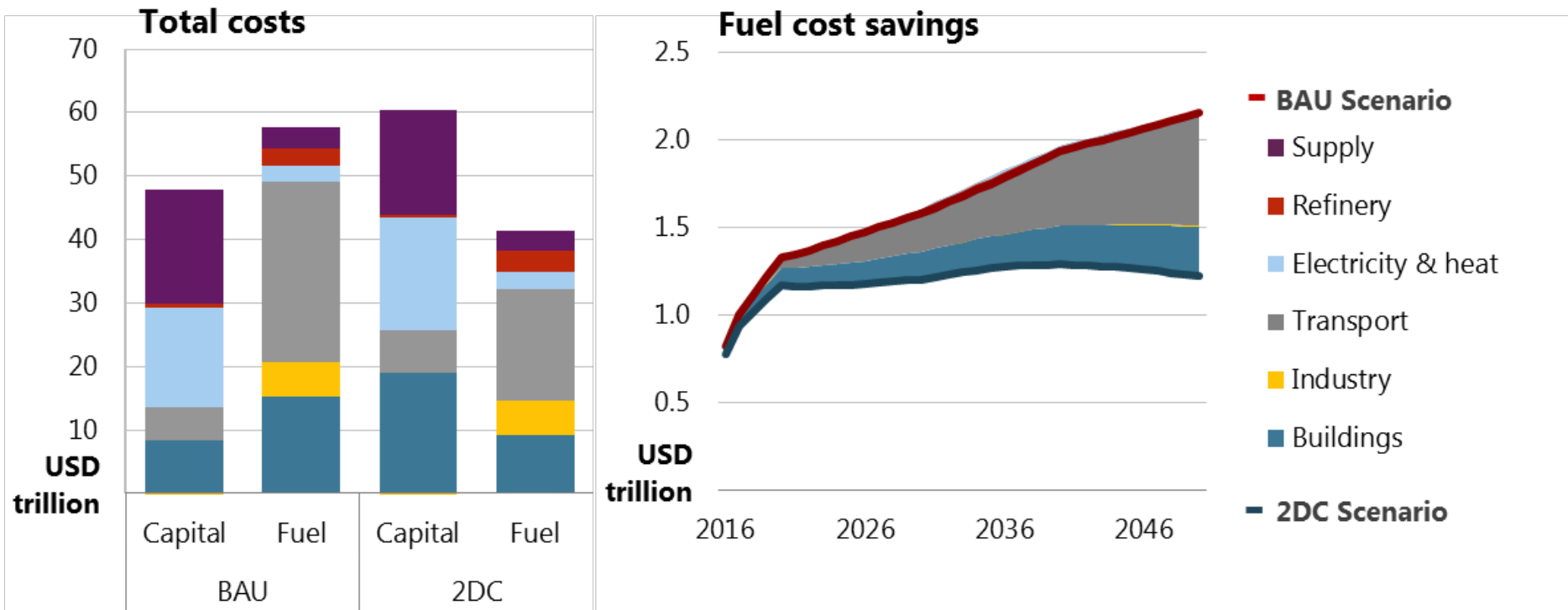


Source: APERC analysis and IEA (2018)

CCS for fossil fuel and biomass plants are key to decarbonising the electricity sector while storage supports renewables integration.

Capital outlays rise to USD 60 trillion in the 2DC

Cumulative investment and fuel cost savings by sector in the BAU vs 2DC, 2016-50



Sources: APERC analysis and IEA (2018)

Fuel savings offset additional fuel expenditures for total outlays of USD 102 trillion.



Thank you!

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