IRENA
International Renewable Energy Agency

WORLD ENERGY TRANSITIONS OUTLOOK

1.5°C Pathway

Challenges and Opportunities of Promoting Low Carbon Energy in Asia

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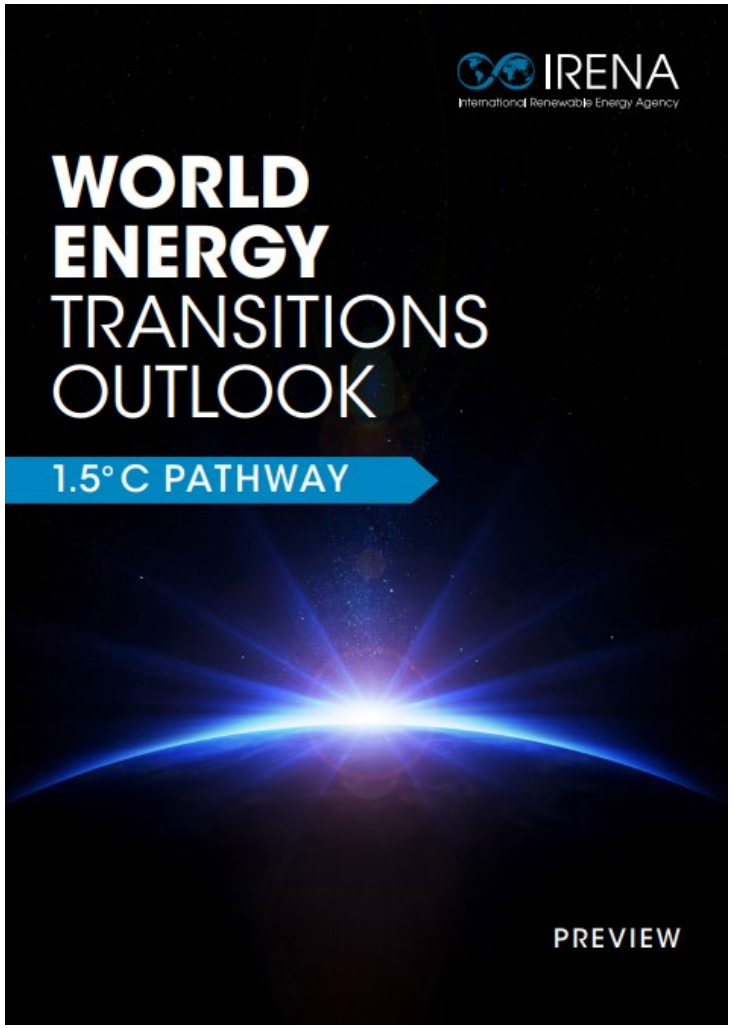
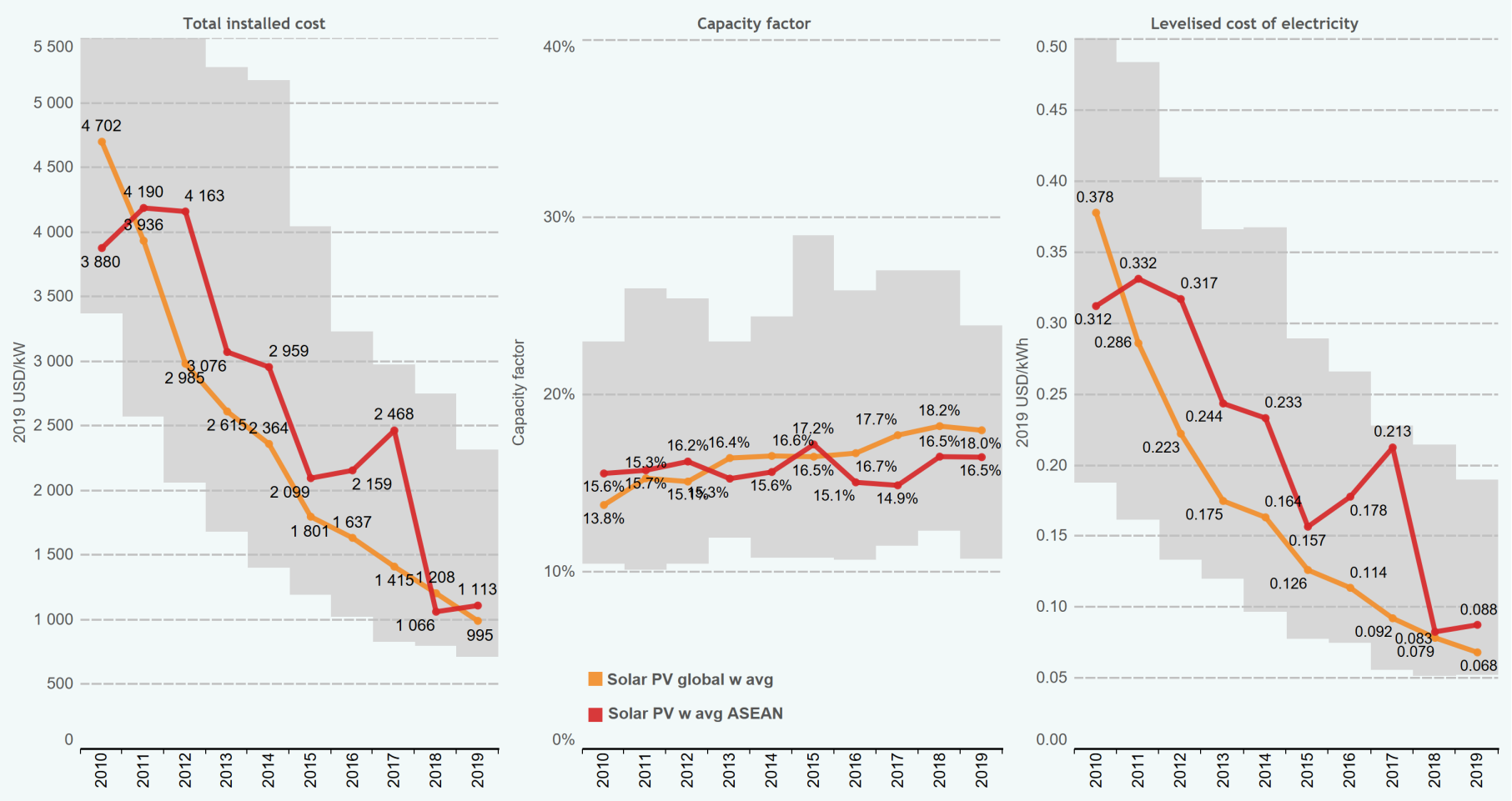
SIEW • 28 April 2021

- The Paris climate agreement 1.5C objective requires decarbonisation of energy supply and demand by 2050
- Phasing out coal power is a priority
- Renewables need to replace fossil fuel power generation
- There is now an economic case for such a transition
- Also end-use sectors need to decarbonise
- The transition in ASEAN has started and it is accelerating



Example: Solar PV cost evolution

The global w. avg LCOE of utility-scale PV has declined 13% YoY in 2018-2019 to USD 0.068/kWh

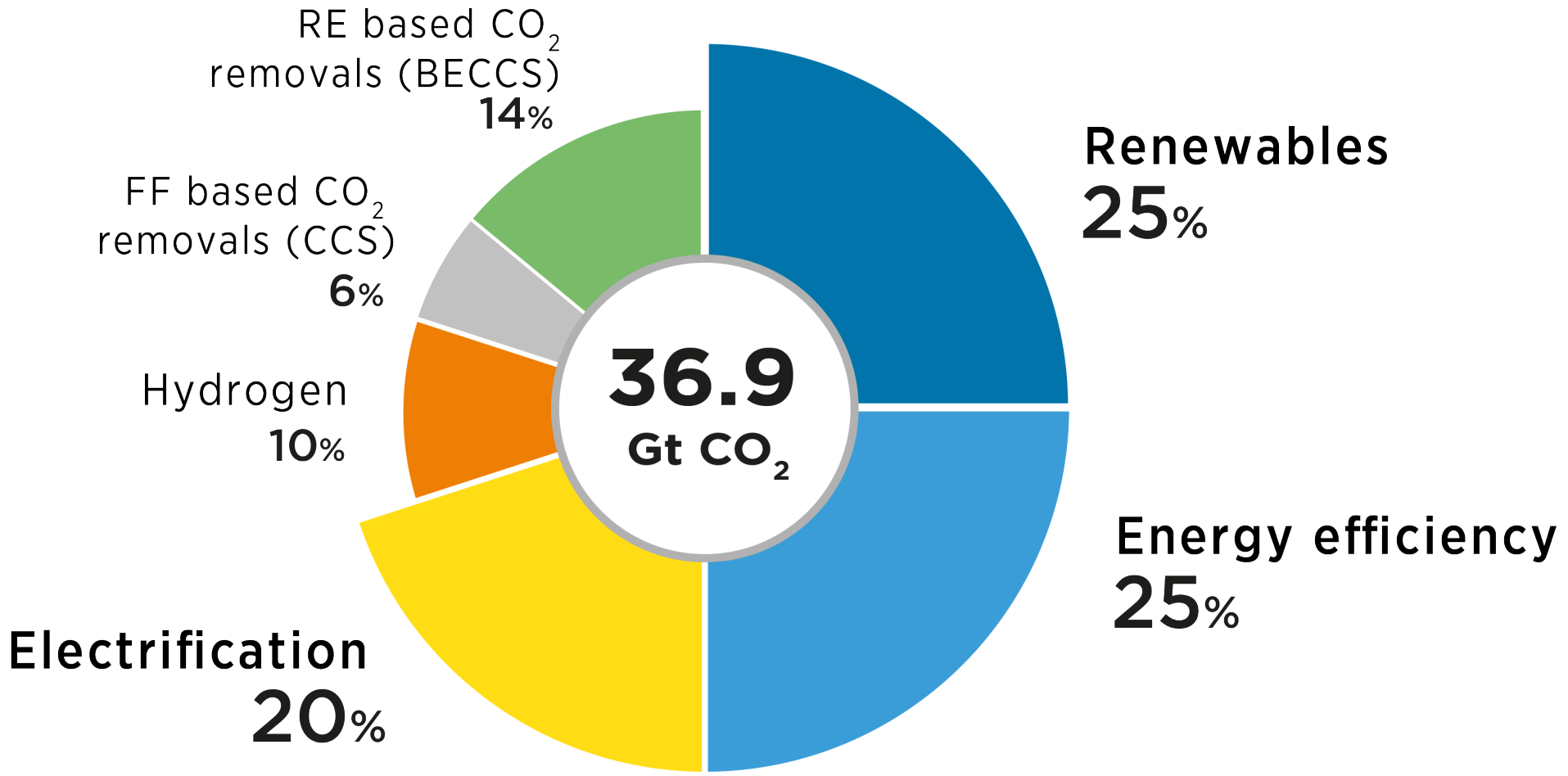


- Total installed costs w. avg. declined 13% from 2018 and 79% from 2010.
- ASEAN PV cost are in line with global cost
- Rapid deployment is possible: e.g. Vietnam from 1% to 25% PV generation capacity in only 3 years (20 GW)
- Enabling frameworks needed
- Power systems flexibility needed

Source: IRENA Renewable Cost Database

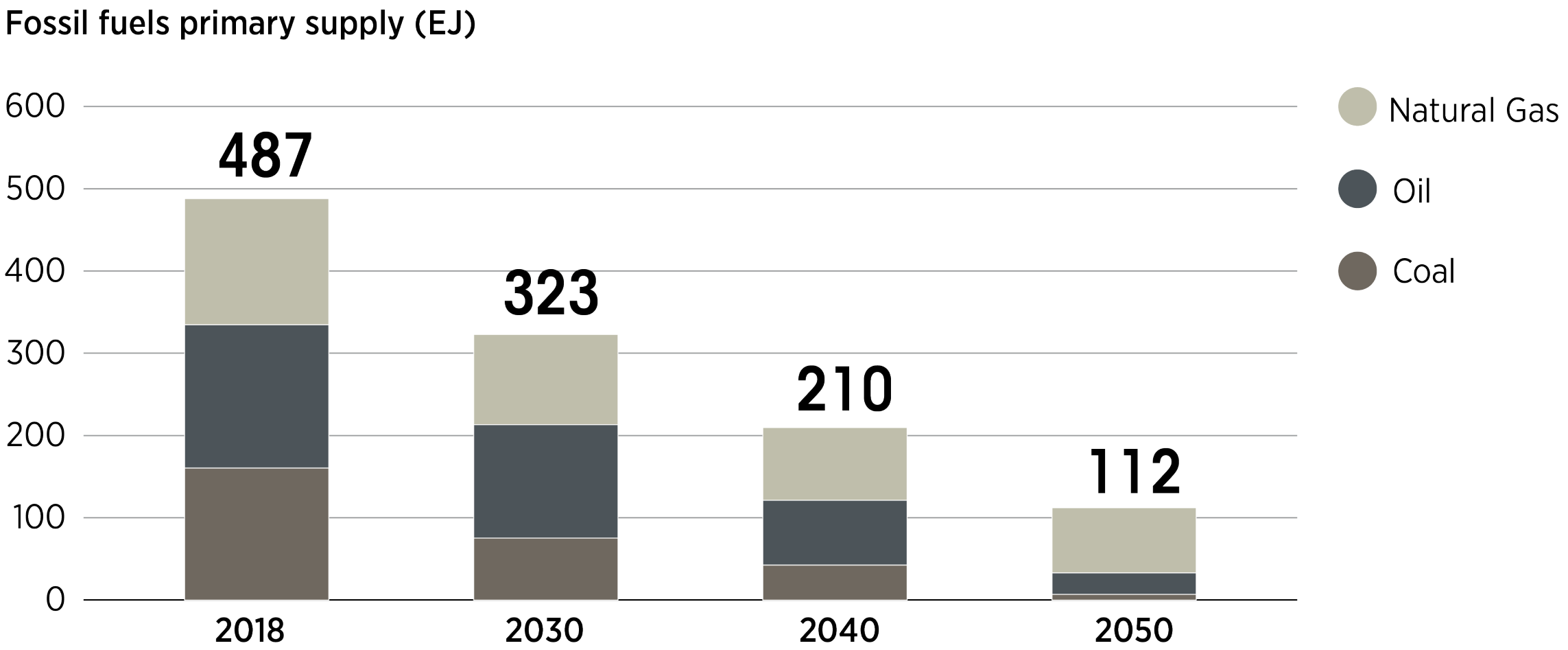
Renewables, efficiency and electrification dominate energy transition

Six components of the energy transition strategy



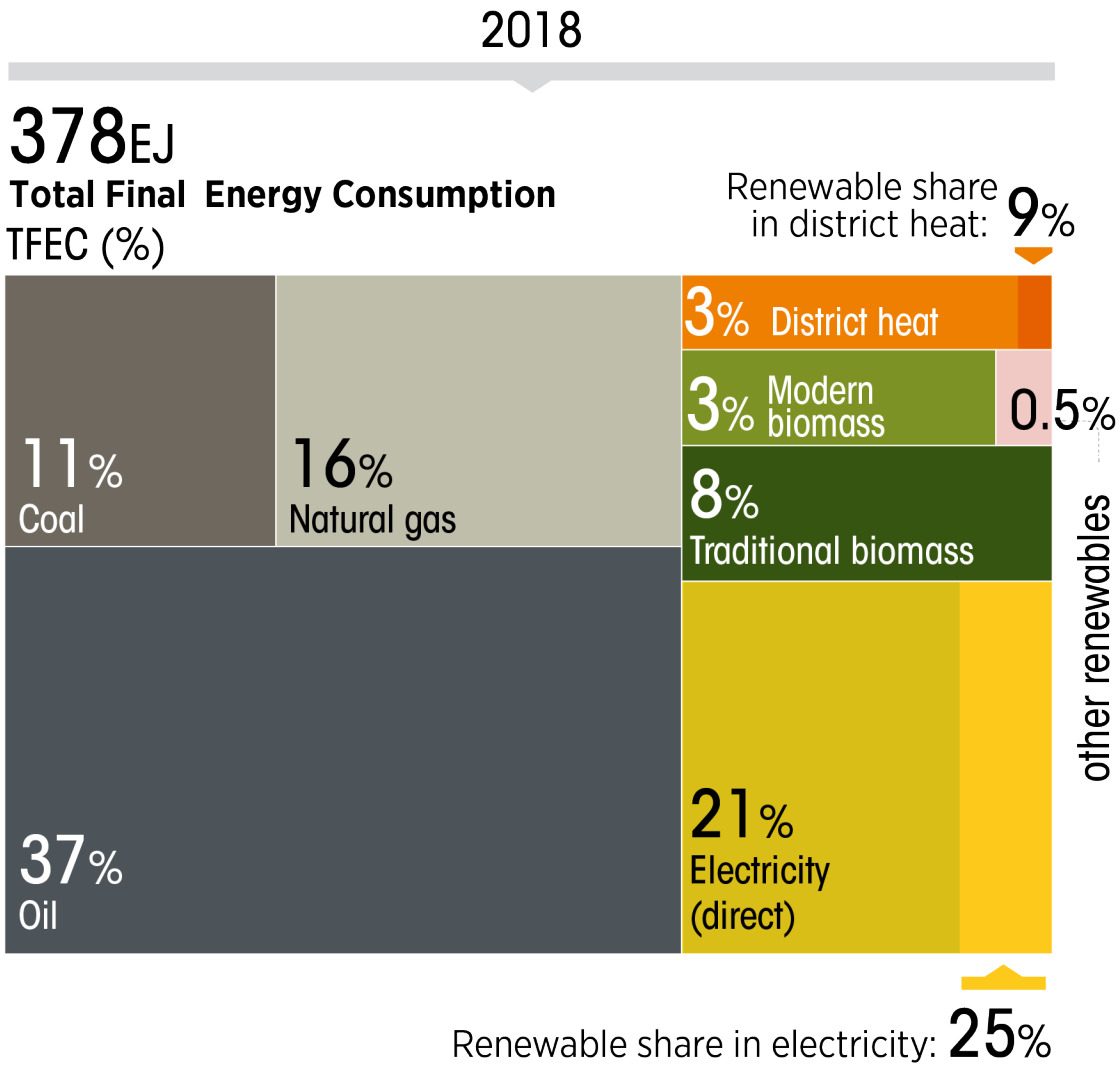
90% of all decarbonisation in 2050 will involve renewable energy through direct supply of low-cost power, efficiency, electrification, bioenergy with CCS and green hydrogen.

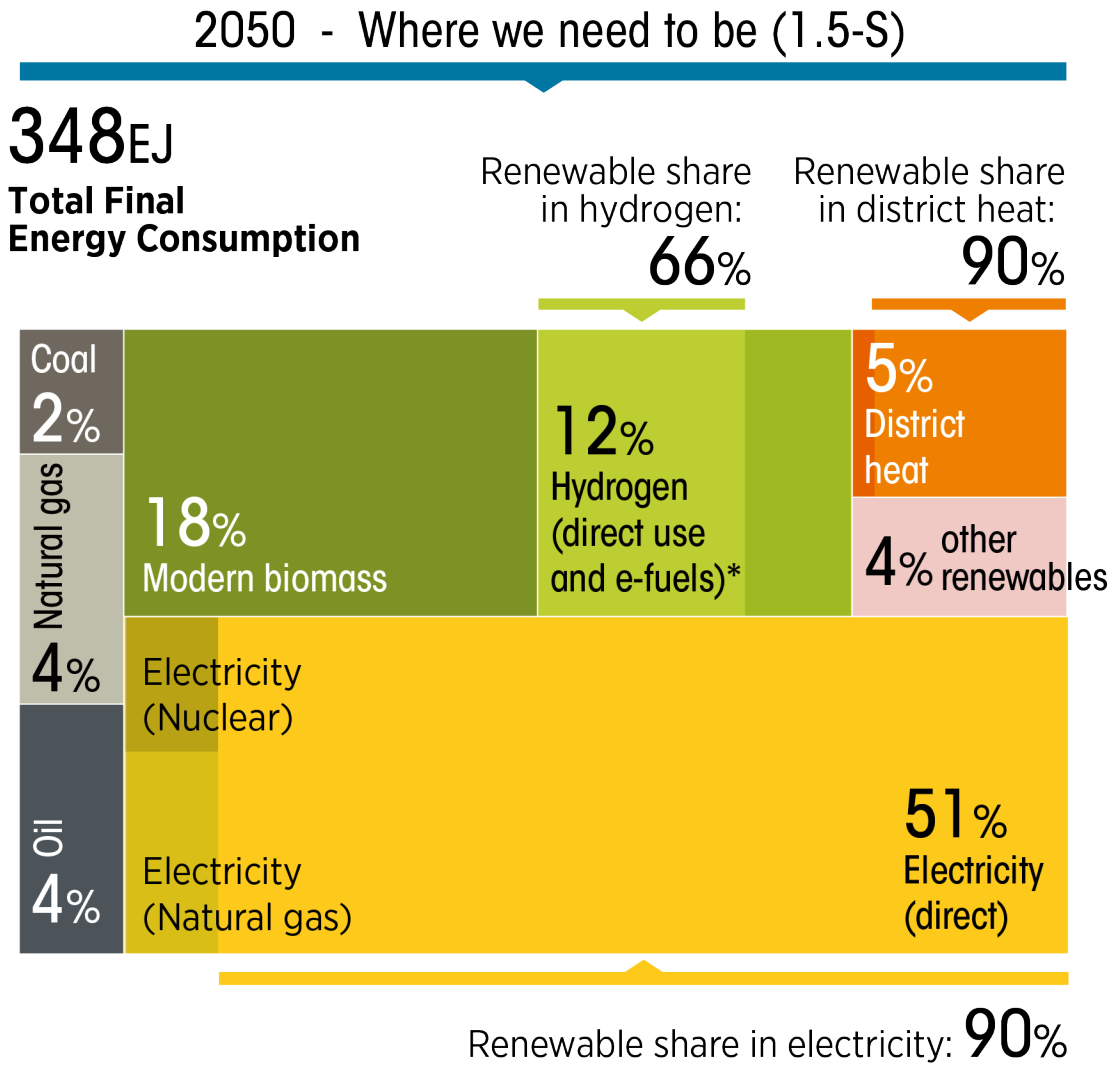
Declining importance of fossil fuels



Fossil fuel use could decline by more than 75% by 2050, based on the rapid transition measures starting now.

Growing bioenergy, hydrogen and direct electrification in 2050

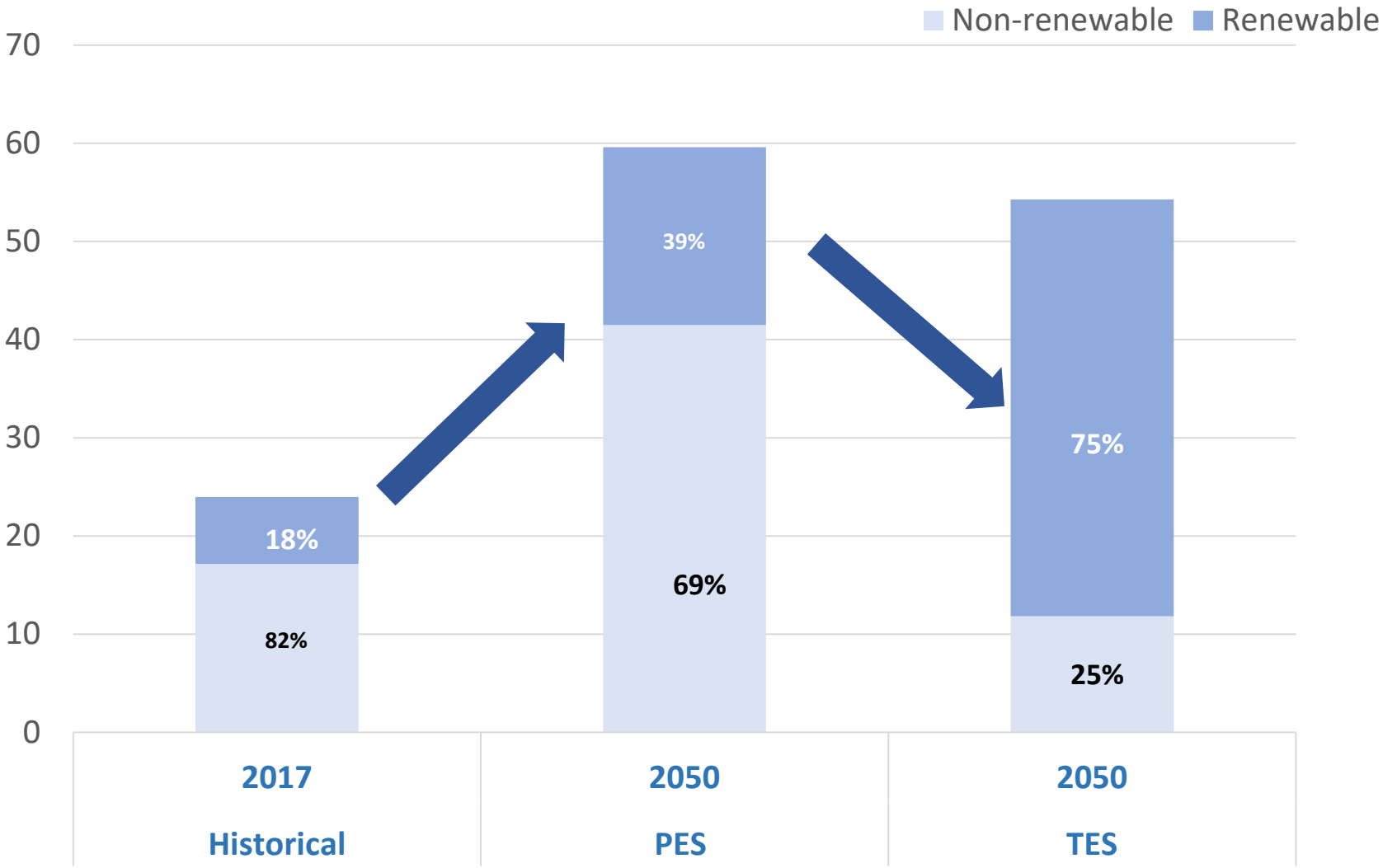




Power generation grows 3.5-fold.
Electromobility, green hydrogen production etc.

IRENA's Transforming Energy Scenario (2 °C) pathway for Southeast Asia

Total primary energy supply (EJ/yr)



Role of bioenergy in Southeast Asia

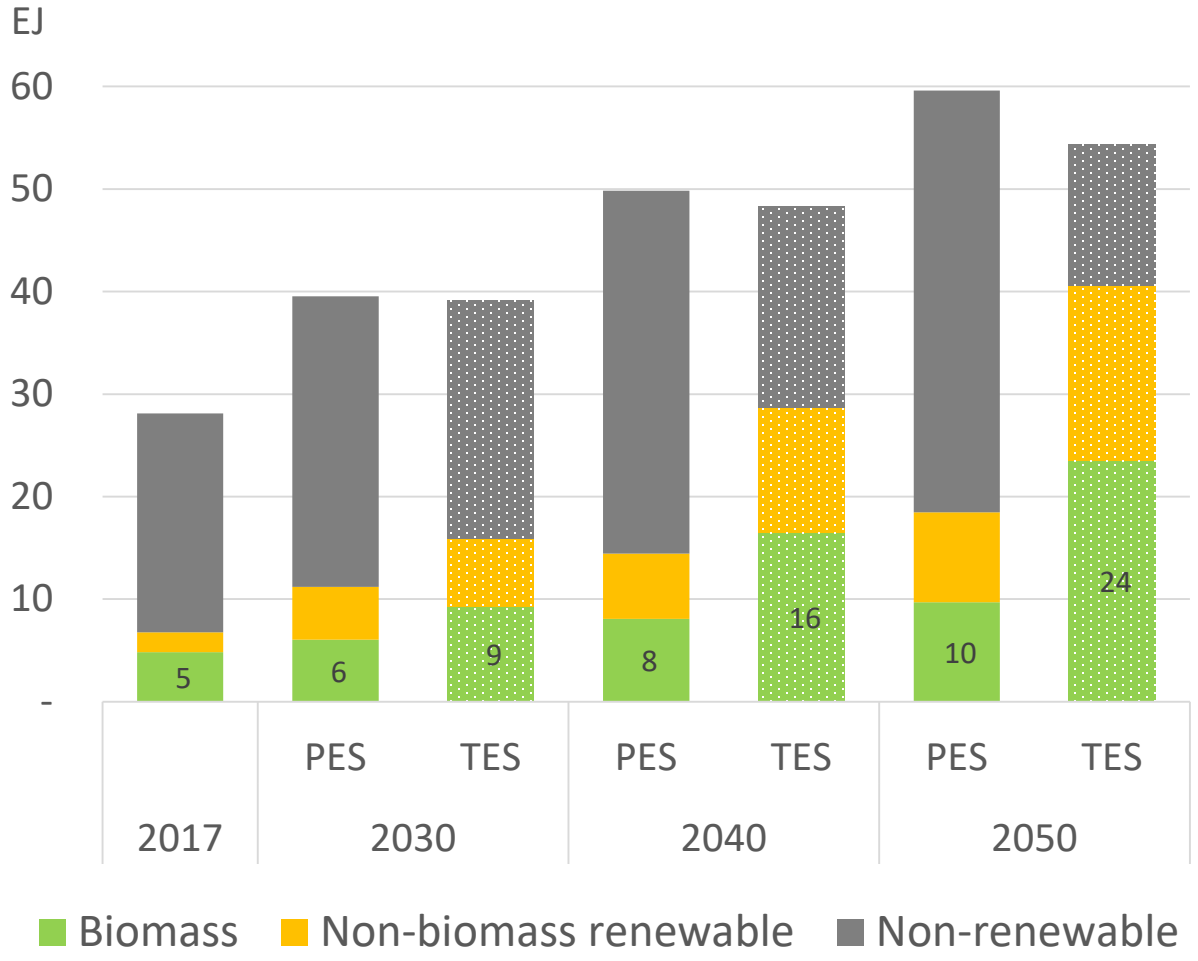
Upcoming report

Role of Sustainable Bioenergy in the Energy Transition for SE Asia

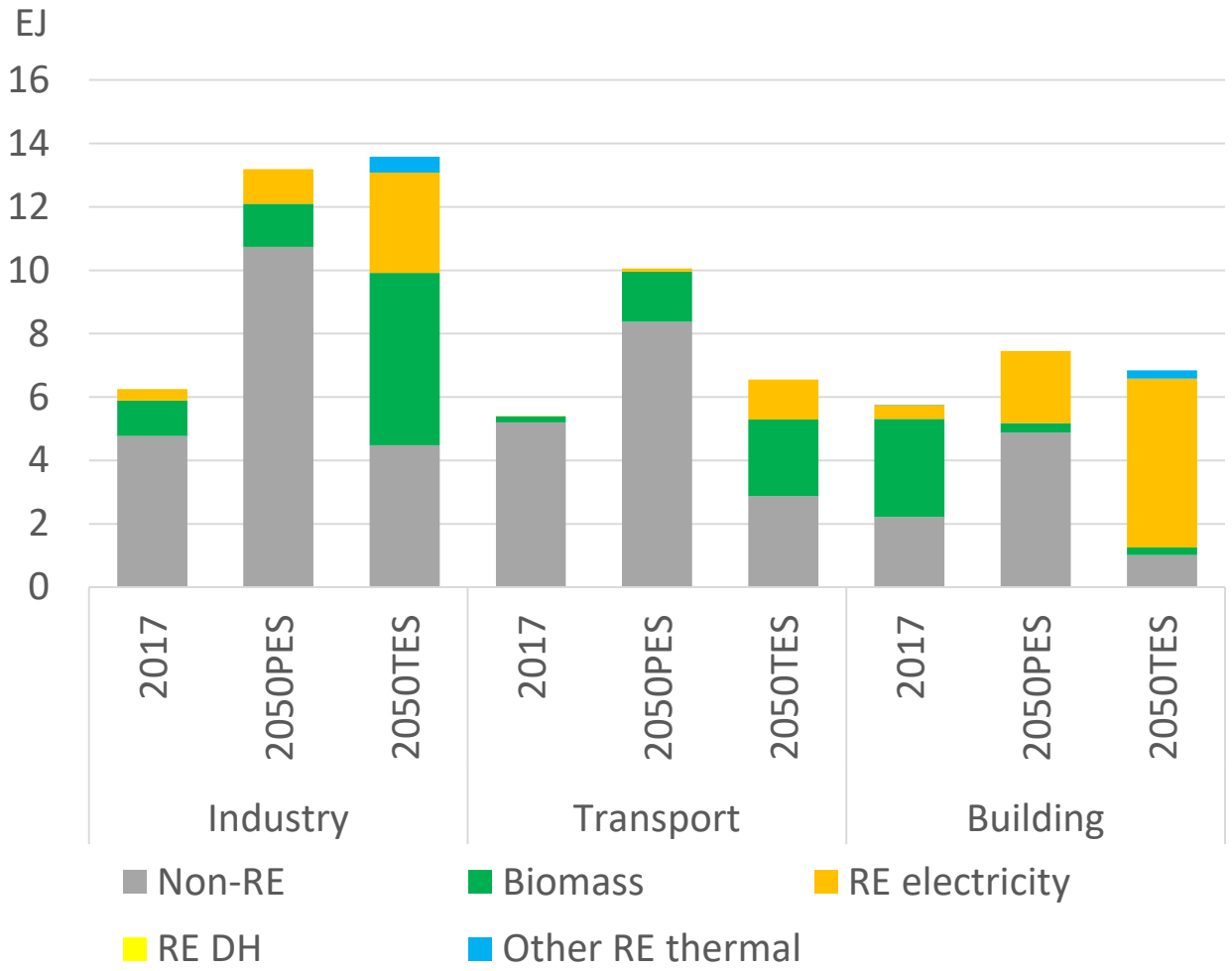
Launching soon

In SE Asia, bioenergy reaches over 40% of TPES in 2050 under TES (2°C scenario)

Energy transformation scenarios in SE Asia (TPES)



Energy transformation scenarios in SE Asia (TFEC)



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Thank you!