

World Energy Outlook 2017

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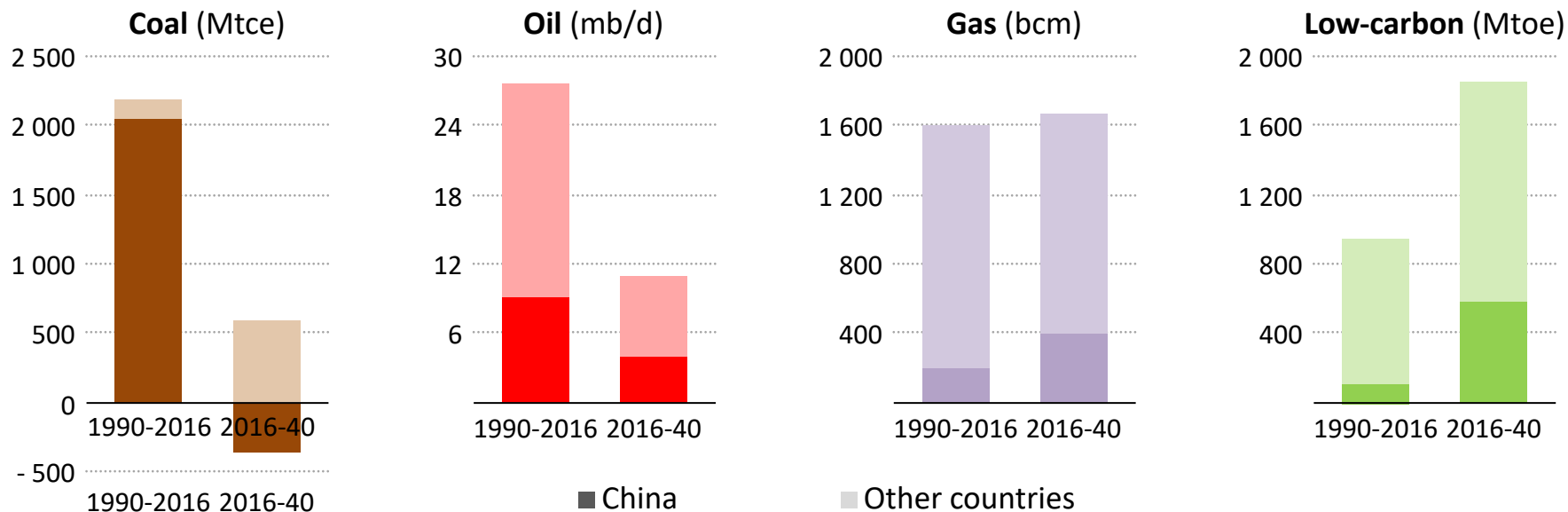
Trondheim, 27 February 2018

Tipping the energy world off its axis

- Four large-scale upheavals in global energy set the scene for the new *Outlook*:
 - The **United States** is turning into the undisputed global leader for oil & gas
 - **Solar PV** is on track to be the cheapest source of new electricity in many countries
 - **China's** new drive to “make the skies blue again” is recasting its role in energy
 - The future is **electrifying**, spurred by cooling, electric vehicles & digitalisation
- There are many possible pathways ahead & many potential pitfalls if governments or industry misread the signs of change

A world in motion: global energy markets, again

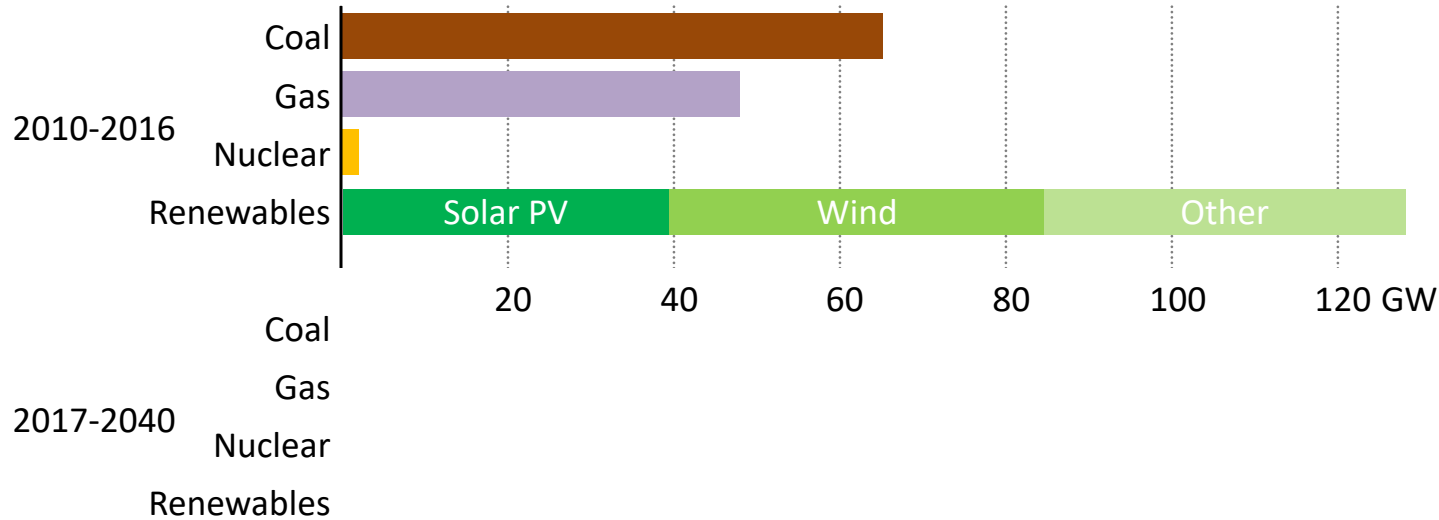
Change in world energy demand by fuel



*Low-carbon sources & natural gas meet 85% of the increase in global demand:
China's switch to a new economic model & a cleaner energy mix drives global trends*

Solar PV forges ahead in the global power mix

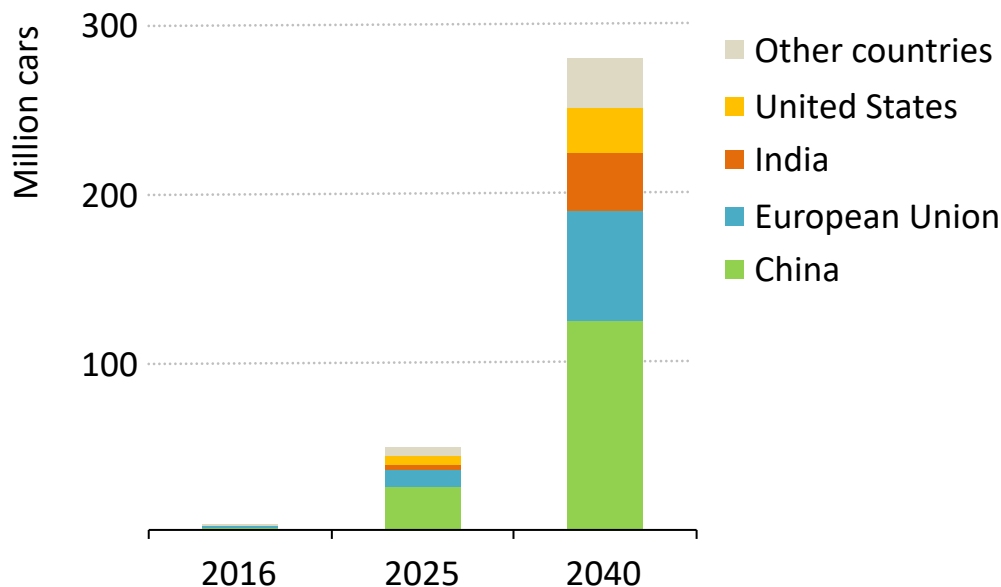
Global average annual net capacity additions by type



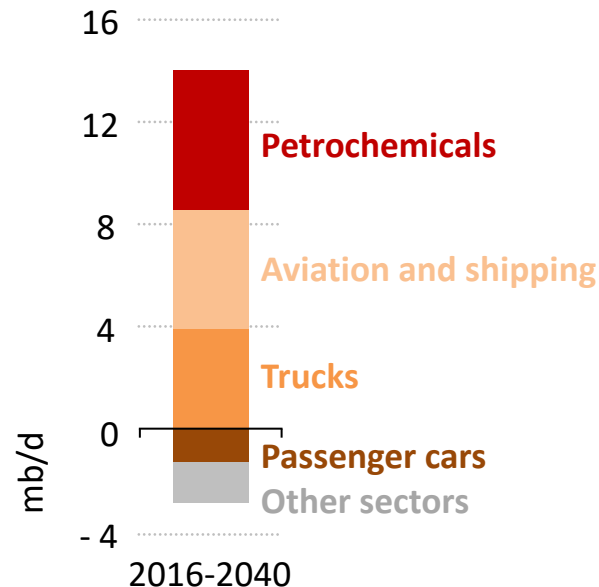
China, India & the US lead the charge for solar PV, while Europe is a frontrunner for onshore & offshore wind: rising shares of solar & wind require more flexibility to match power demand & supply

EVs are on the way, but oil demand still keeps rising

Electric car fleet



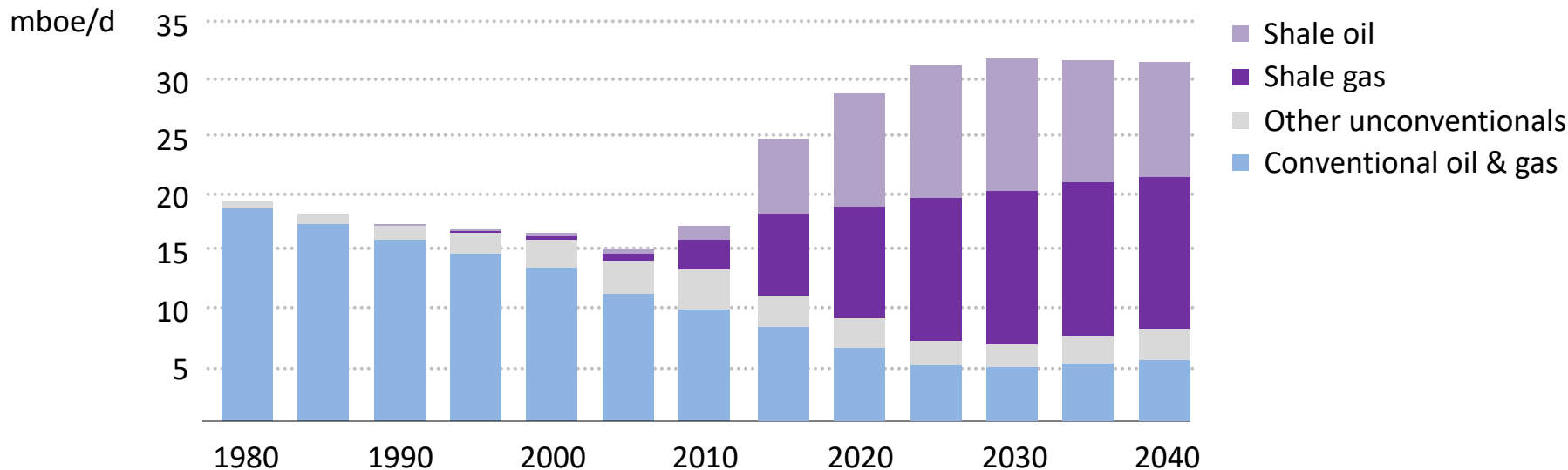
Change in global oil demand



Electric cars are helping to transform energy use for passenger cars, slowing the pace of growth in global oil demand: however, trucks, aviation, shipping & petrochemicals keep oil on a rising trend

US becomes undisputed leader of oil & gas production

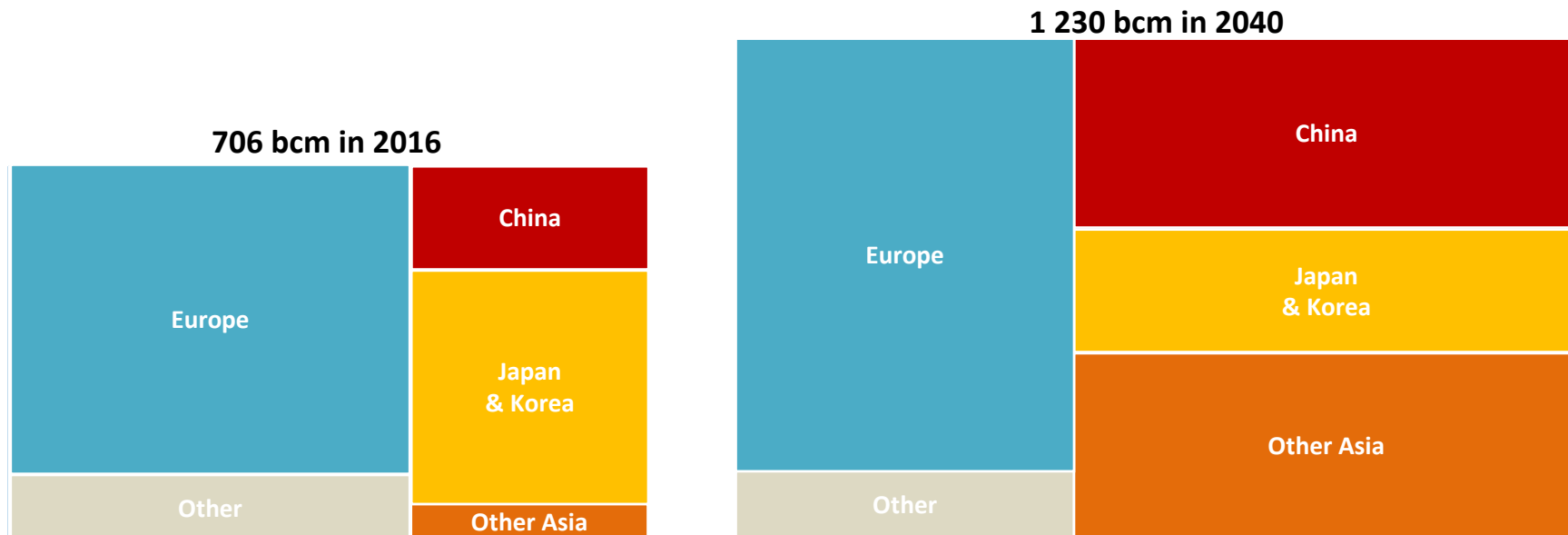
Oil and gas production in the United States



The US is already switching to become a net exporter of gas & becomes a net exporter of oil in the 2020s, helped also by the demand-side impact of fuel efficiency & fuel switching

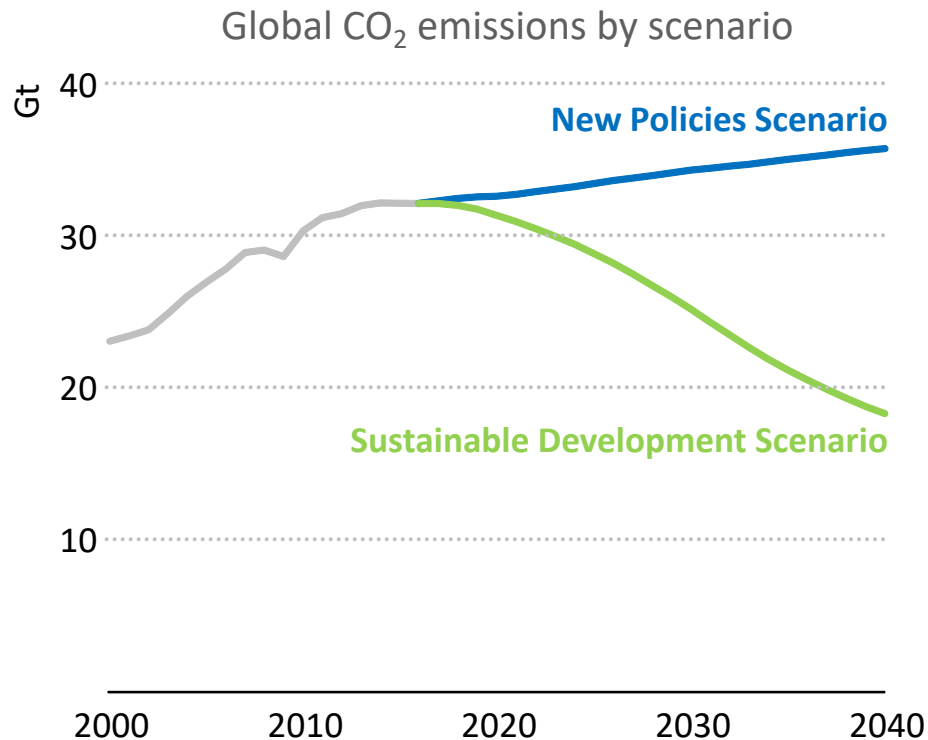
LNG ushers in a new global gas order

Gas importers



*Asia's growing gas import requirements are largely met by LNG,
with exports from the US accelerating a shift towards a more flexible, liquid global market*

A new strategy for energy & sustainable development



The Sustainable Development Scenario reduces CO₂ emissions in line with the objectives of the Paris Agreement, while also tackling air pollution and achieving universal energy access

Stronger policies for a more sustainable world

The Sustainable Development Scenario in 2040

875

million electric
vehicles

2 times
more efficient
than today

3 250_{GW}

global solar PV capacity

580_{bcm}

additional gas demand

Only 15% additional investment is required to 2040 to achieve the Sustainable Development Scenario, with two-thirds of energy supply investment going to electricity generation & networks



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