



International
Energy Agency
Secure
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World Energy Outlook 2015

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The start of a new energy era?

■ Energy sector turns green?

- *Energy accounts for at least 2/3 of greenhouse gas emissions*
- *Renewables capacity additions at a record-high of 130 GW in 2014*
- *Fossil-fuel subsidy reform, led by India & Indonesia, reduces the global subsidy bill below \$500 billion in 2014*
- *Carbon pricing covers 13% of global emissions, but China intention of trading system in 2017 will triple this share*
- *Decoupling of emissions and economic growth has already begun*

■ Multiple signs of change, but are they moving the energy system in the right direction?

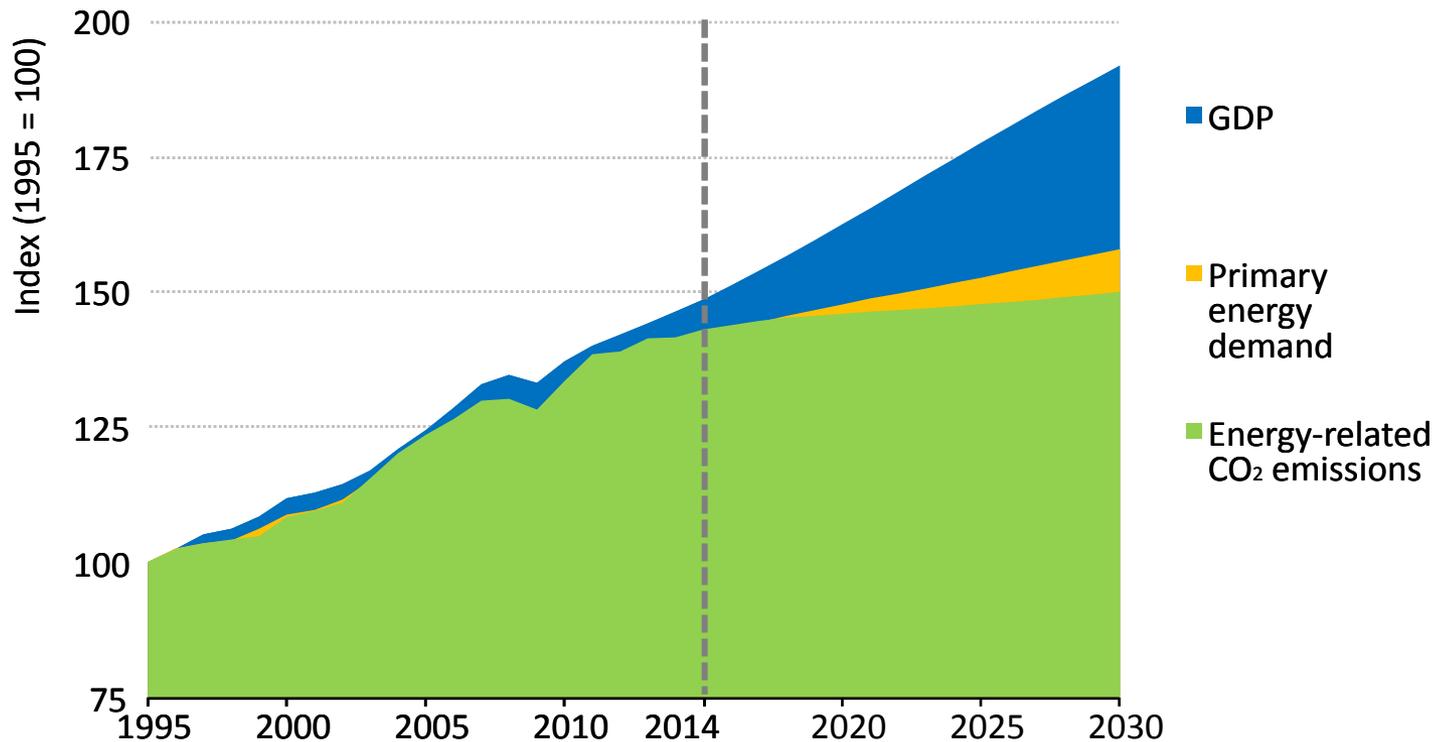
...the global coverage of climate pledges is impressive



Pledges from countries that account for 95% of global energy-related GHG emissions; their full implementation would be consistent with a temperature rise of 2.7 °C

Energy sector starts to go its own way

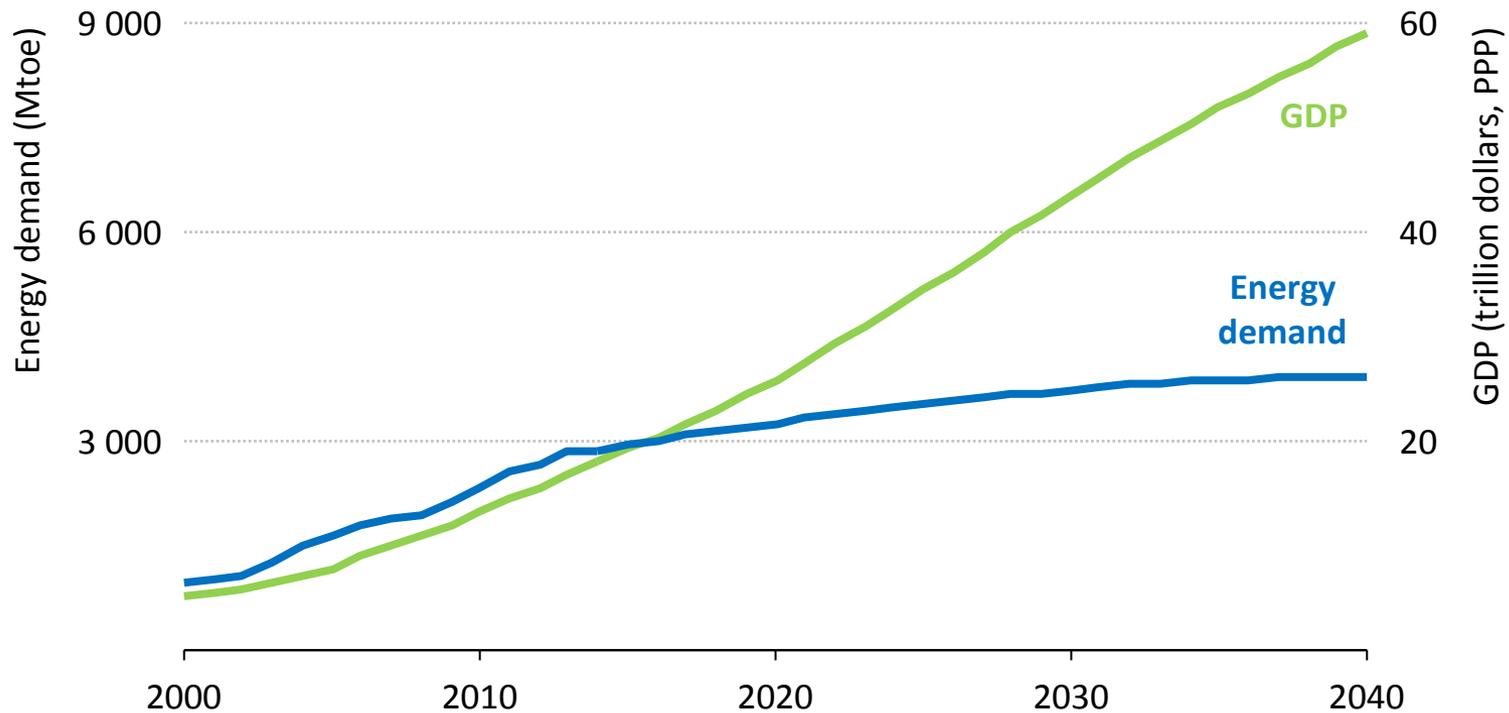
Growth in the global economy, primary energy demand and related CO₂ emissions



Growth in energy demand and emissions has tracked economic growth closely but decouples over time, with emissions growth slowing to a crawl by 2030

A new chapter in China's growth story

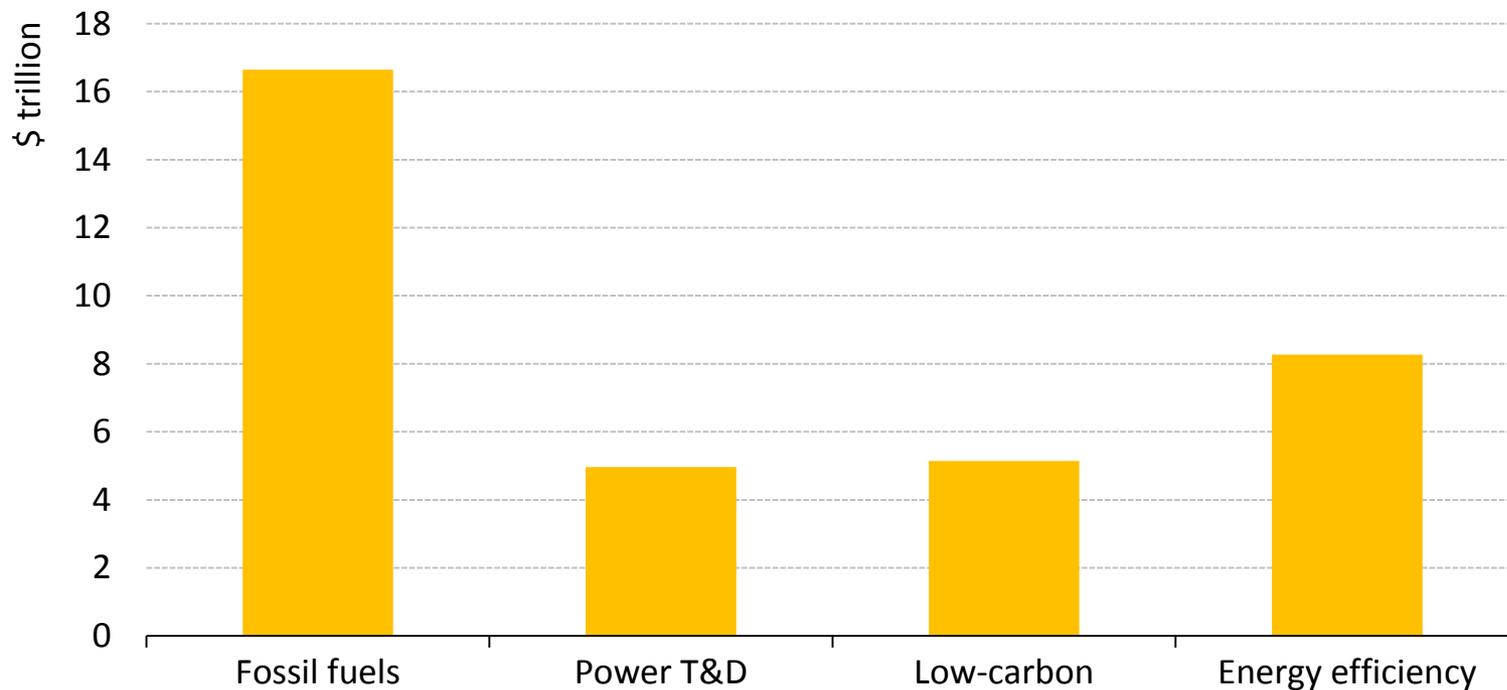
Energy demand & GDP in China



Along with energy efficiency, structural shifts in China's economy favouring expansion of services, mean less energy is required to generate economic growth

Investments are progressively shifting to clean technologies

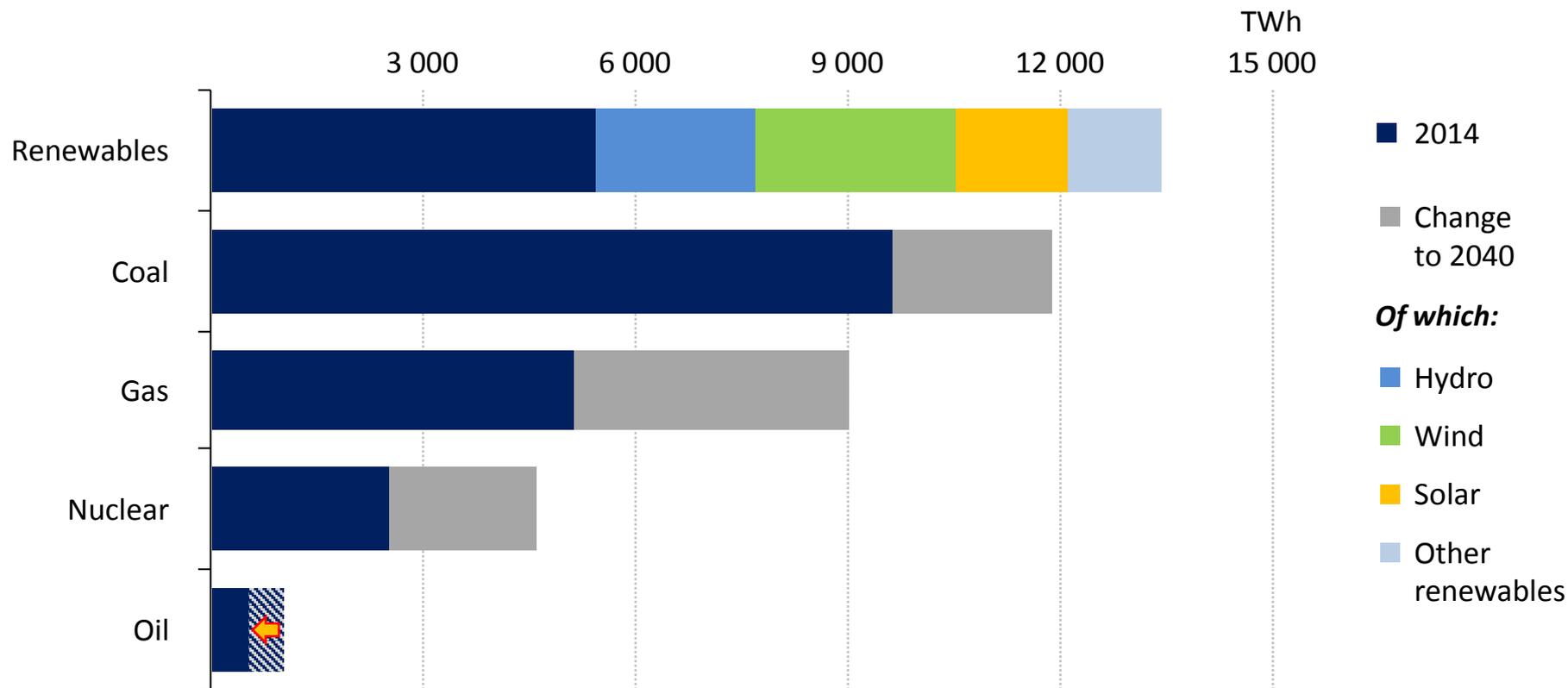
Cumulative world energy sector investment in the INDC scenario, 2015-2030



Energy efficiency and low-carbon technologies represent almost 40% of total energy sector investment from 2015 to 2030.

Power is leading the transformation of the energy system

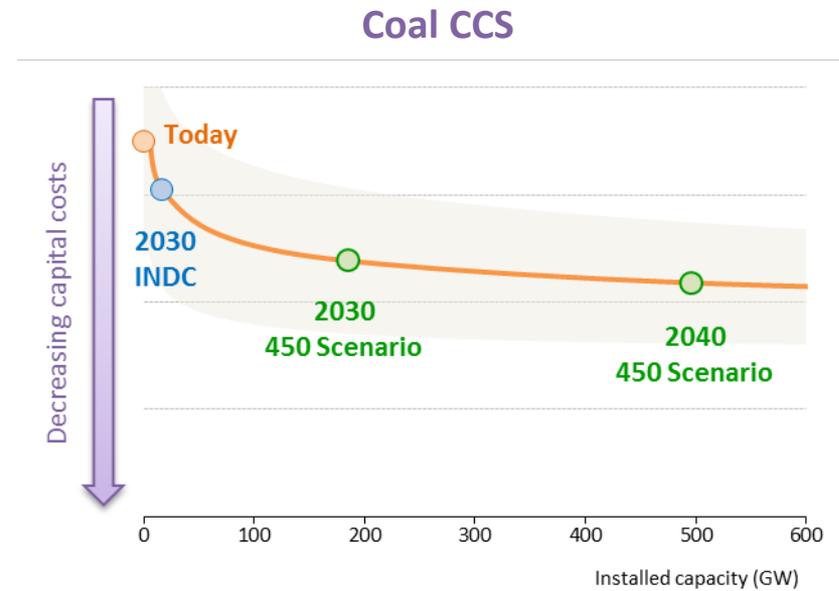
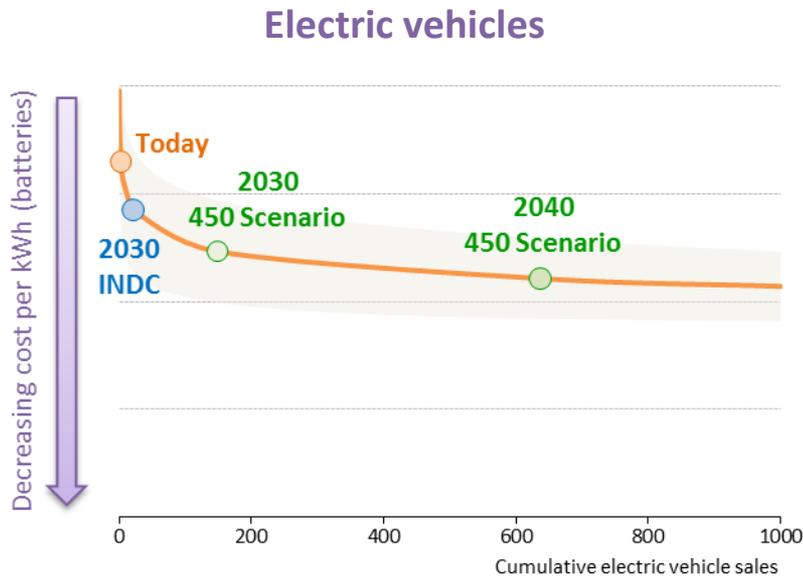
Global electricity generation by source



Driven by continued policy support, renewables account for half of additional global generation, overtaking coal around 2030 to become the largest power source

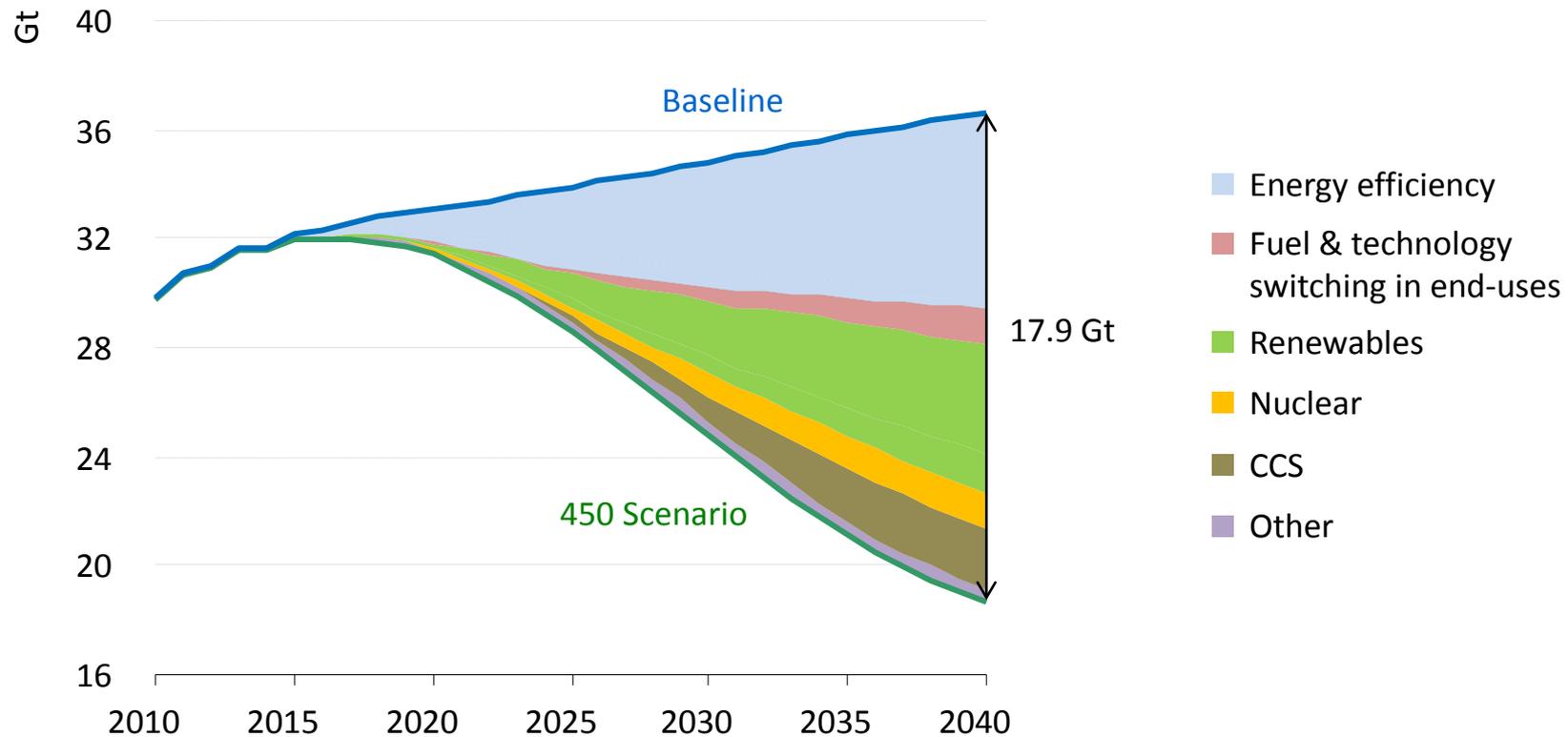
Moving down the cost curve

Global average costs with increasing deployment



The INDCs drive down wind and solar PV costs, but greater emphasis on electric vehicles, CCS and energy storage is needed to help meet climate goals

A 2 °C pathway is still some further efforts away



A peak in emissions by around 2020 is possible using existing policies & technologies; technology innovation and RD&D will be key to achieving the longer-term goal.



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