



International
Energy Agency

Secure • Sustainable • Together

World Energy Outlook

*Special
Report on*

Energy & Climate

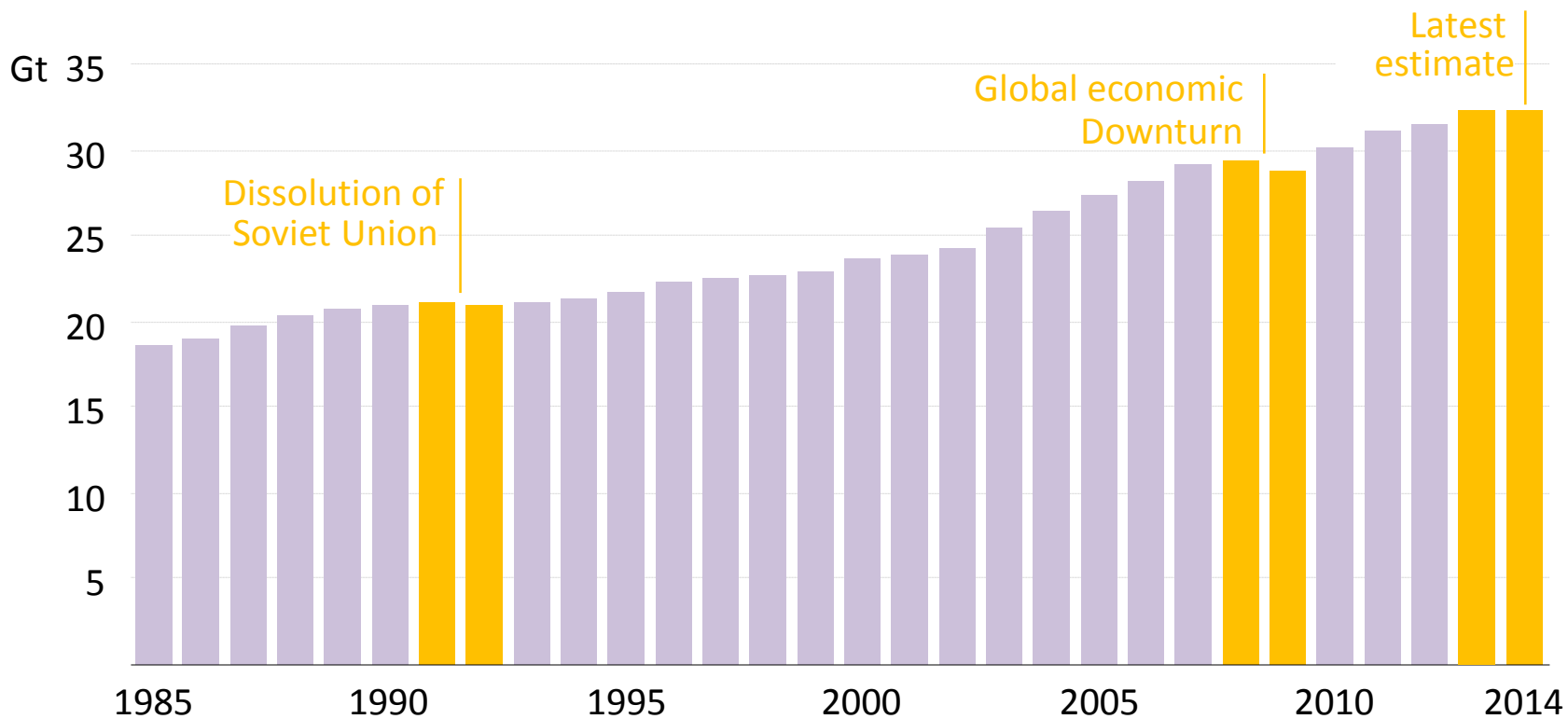
Laura Cozzi
Deputy Head

Directorate of Global Energy Economics

5 June 2015, IEW, Abu Dhabi

A good news: emissions halt in 2014

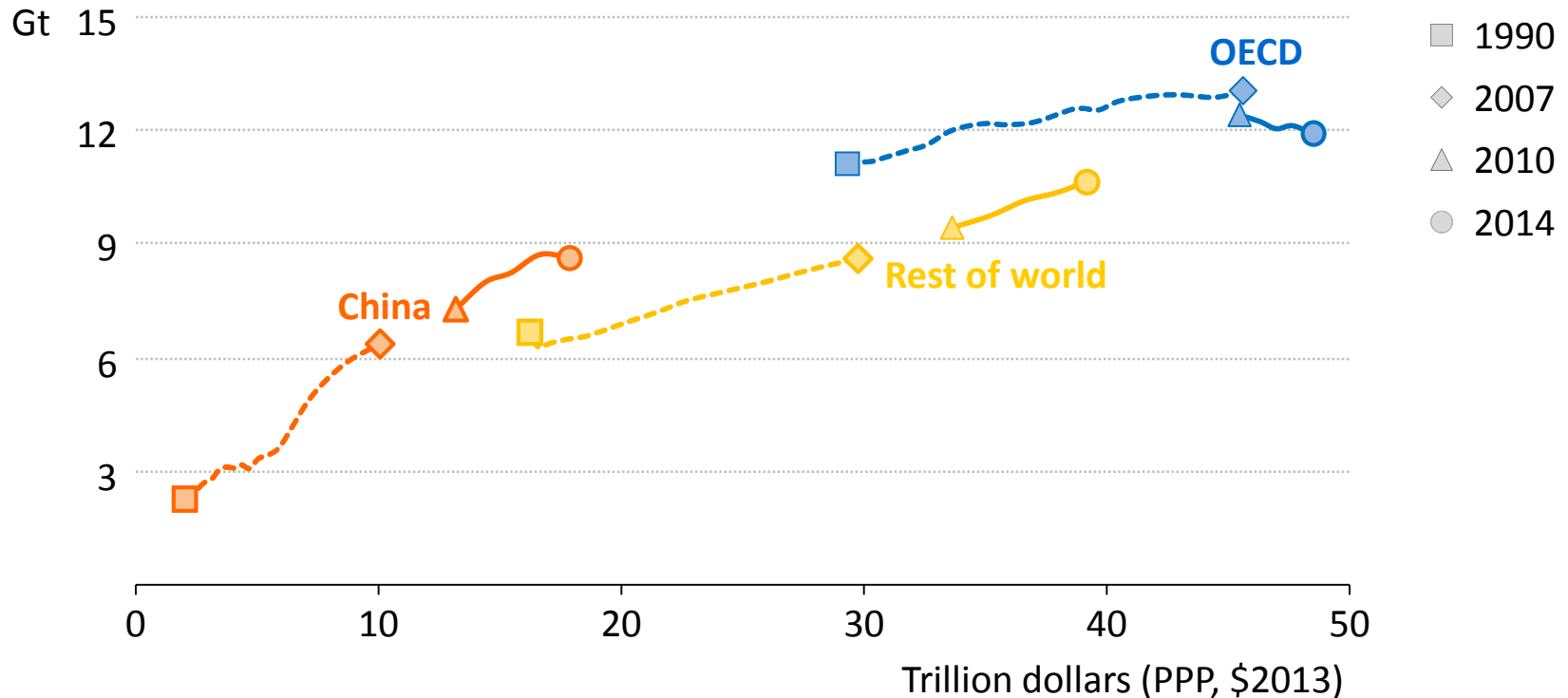
Global energy-related CO₂ emissions



For the first time in history, 2014 recorded a stall in energy-related CO₂ emissions with growing global economy

Emissions and growth: the end of the longstanding relationship?

Trends in economic and CO₂ emissions



Source: WEO special report on energy and climate (forthcoming)

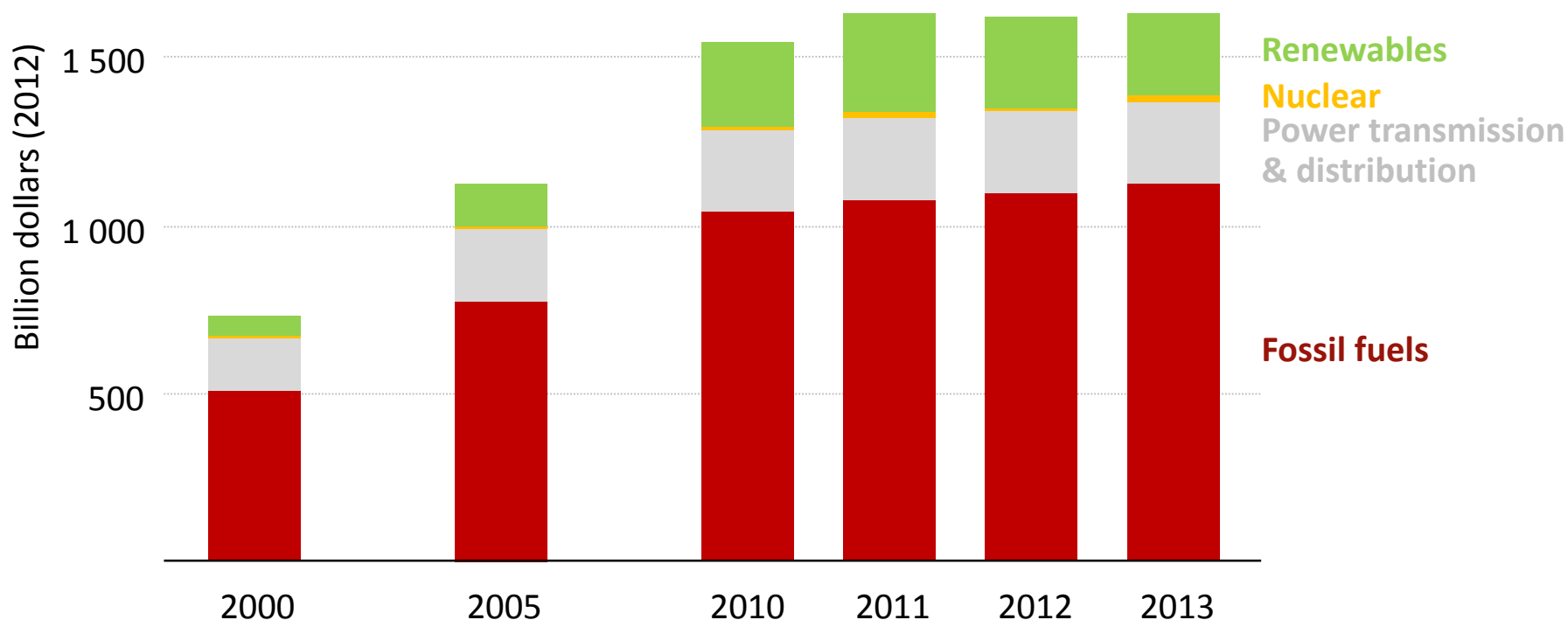
OECD countries are increasing decoupling economic growth and emissions, China is showing early signs of it, but the rest of the world maintains a strong link

Renewables come of age, but fossil fuel investment still dominant

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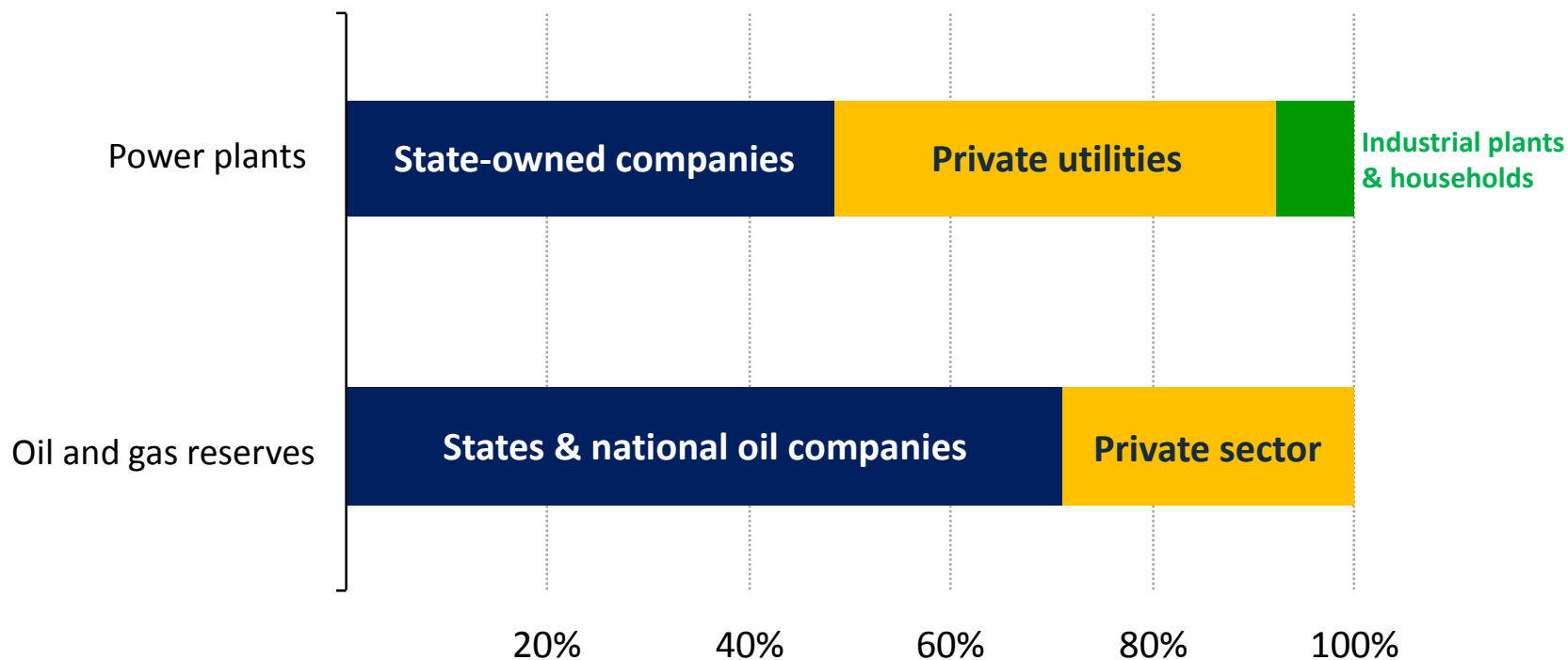
Annual energy supply investment



Investment in renewables rose from \$60 billion in 2000 to a high point approaching \$300 billion in 2011, before falling back since

States hold many of the cards

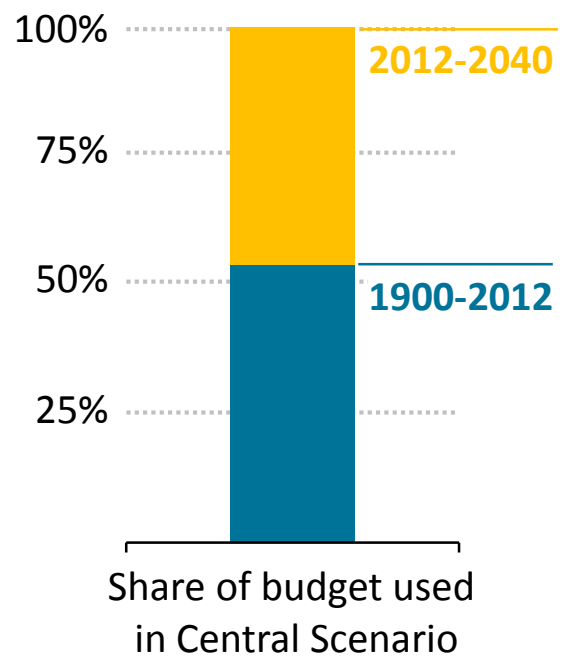
Ownership of worldwide power generation capacity & oil and gas reserves



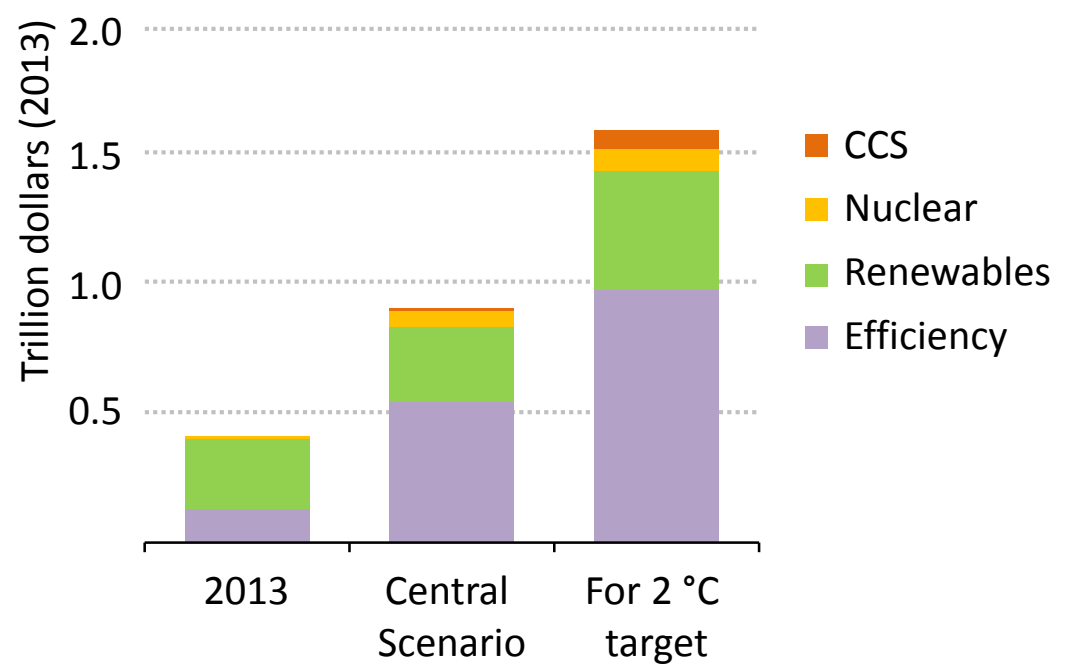
Alongside investment by the private sector, the objectives, corporate culture & financing of state-owned companies are critical to future energy investment flows

The 2 °C goal – last chance in Paris?

World CO₂ budget for 2 °C ~2300 Gt



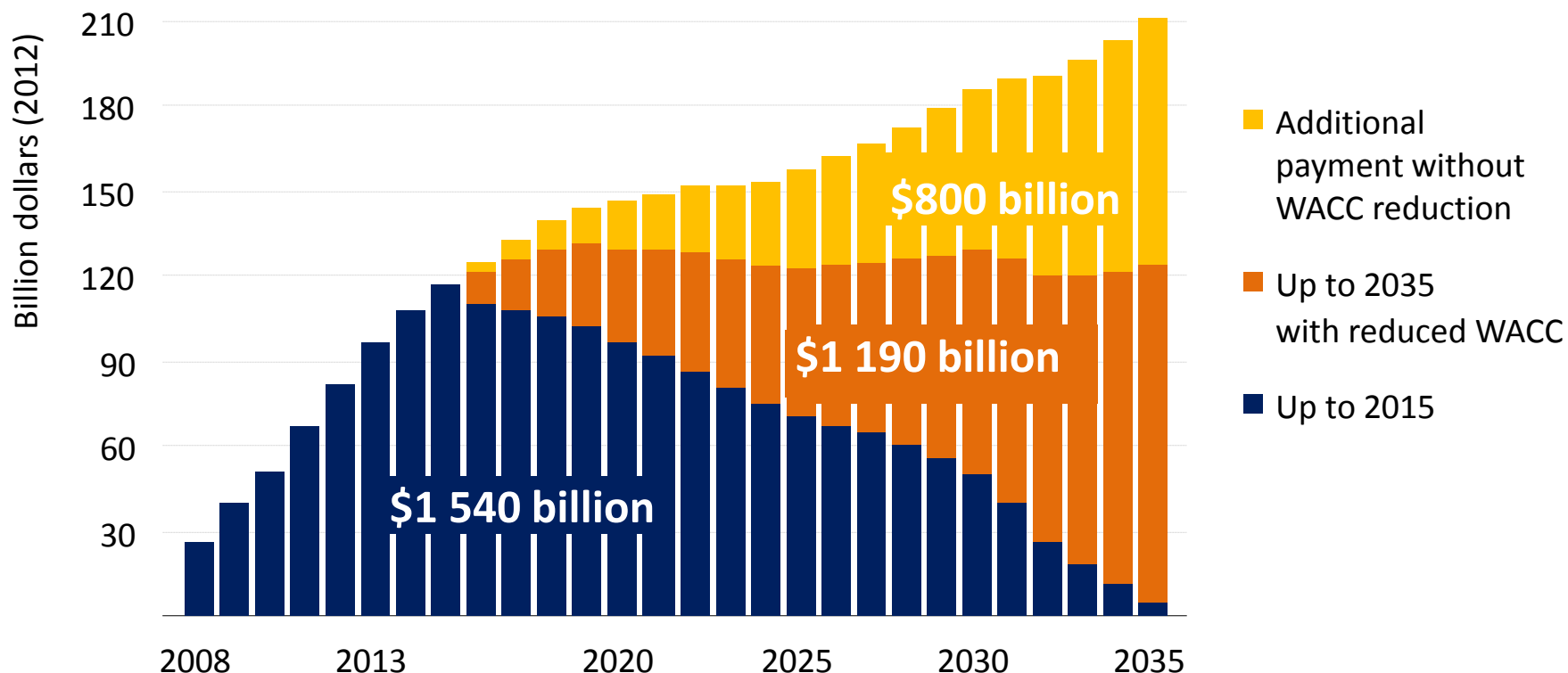
Average annual low-carbon investment, 2014-2040



The entire global CO₂ budget to 2100 is used up by 2040 – Paris must send a strong signal that low-carbon investment needs to increase to four-times current levels

Attracting financing in the 450 Scenario

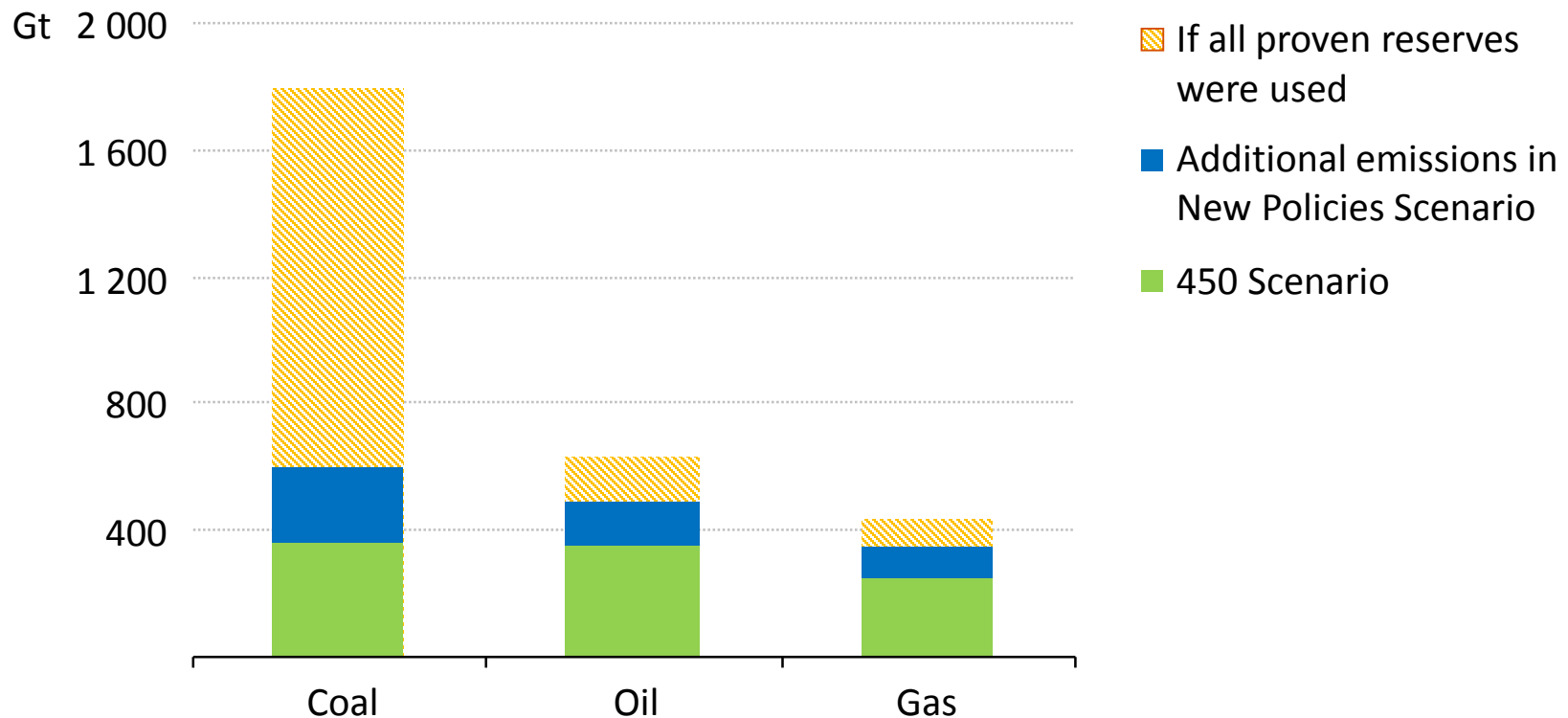
Subsidies to renewables in the 450 Scenario



New financing vehicles could help lower the cost of capital – a reduction of three pct points would make renewables more competitive, reducing subsidies by 40%

Some fossil-fuel reserves remain underground

Potential CO₂ emissions from proven fossil-fuel reserves to 2050



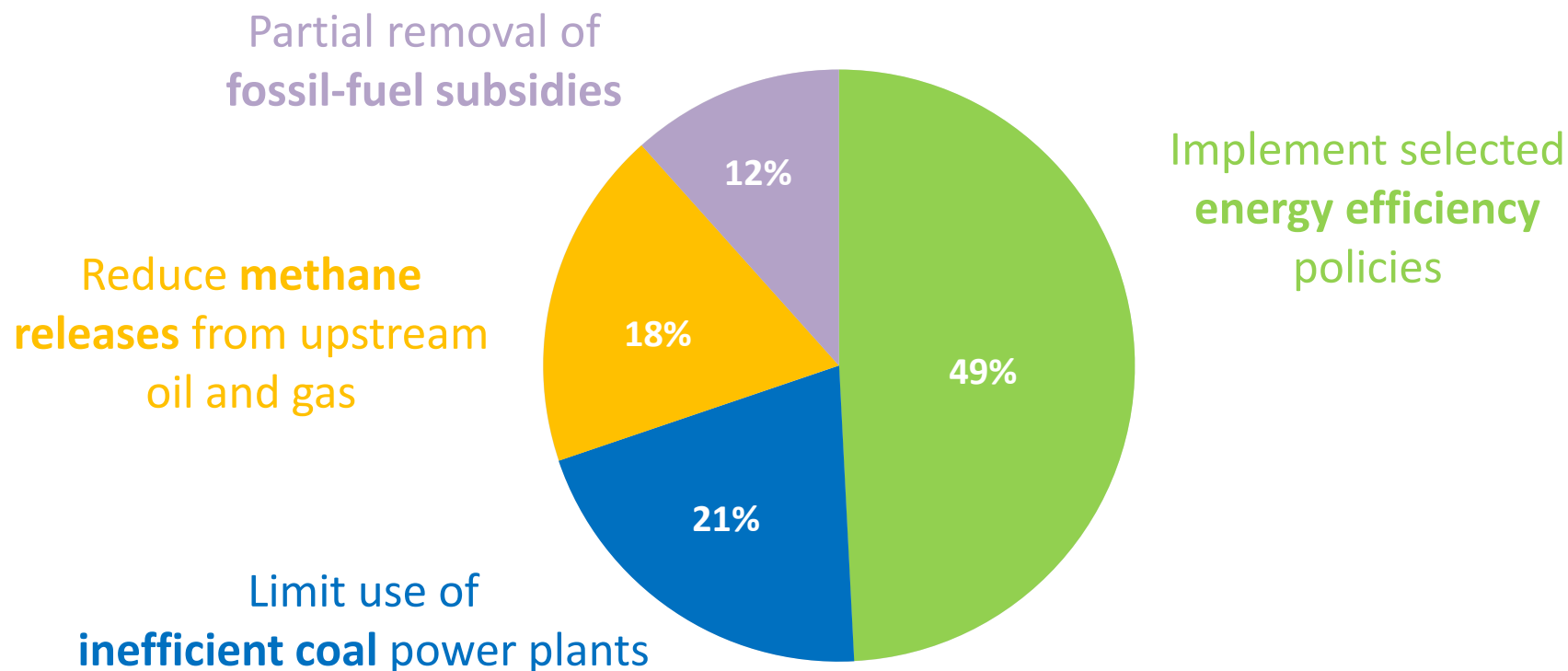
On today's trends, half of the proven fossil-fuel reserves would be left undeveloped to 2050 stronger climate action would increase the share

IEA ministers agreed on four measures to stop emissions growth by 2020

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Emissions savings in the 4-for-2 °C Scenario, 2020



IEA ministers in 2013 supported four measures to stop growth in emissions at no net economic cost, closing 80% of the gap for a 2 °C path by 2020

■ **WEO Special Report on Energy & Climate Change**

- *Analyse energy sector impact of known and emerging national pledges (INDC)*
- *A 10-year energy sector strategy that could raise ambition while enabling economic growth and development*
- *Analyse key technologies for deep decarbonisation in energy sector (e.g. electric vehicles, solar integration/smart grids, CCS)*
- *To provide key negotiating elements for Paris: what COP 21 needs from the energy sector – and what the energy sector needs from COP 21*

■ **Timeline**

- *Launch of WEO2015 Special Report – **15 June, London***
- *Launch of WEO2015 (with India focus) – **10 November, London***
- *IEA's biennial Ministerial Meeting – **17/18 November, Paris**
(plans to have a message for COP)*

Conclusions

- Quantitative analysis increasingly used by policy makers – becoming an essential instrument to design sound policies
- Increasingly the investors community interested in model-based analysis – more can be done to improve understanding at this interface
- Recent data – hard to get, but a must to track transitions
- Energy efficiency key in any decarbonisation scenario, but do we all talk about the same thing?
- IEA constantly improving World Energy Model to answer the next question – now spatial analysis and climate feedbacks