Energy Perspectives 2016

Statoil's long-term macroeconomic and energy market outlook

CenSES energi- og klimakonferanse, Oslo 5-6 desember 2016

Ottar Skagen, spesialrådgiver, Statoil Markedsanalyse og Strategi

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Evolution of Statoil's Energy Perspectives

Documentation
– for internal purposes – of Statoil's economic planning assumptions

Communication tool
for management when explaining Statoil's positions to partners, politicians, regulators, NGOs, the general public

Approach: Single line forecast

Demand side focus

Approach: Scenarios

This year's scenarios: Reform, Renewal, Rivalry

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Statoil's and CenSES' scenario concepts

- Statoil's scenarios correspond to CenSES' Futures
- EP provides context for Statoil's strategies but is separate from the strategy development process

- "Key research question": How could the markets for, and the costs and prices of, Statoil's main products develop?
- Statoil absent from Statoil's scenarios
- Norway plays minor role in Statoil's scenarios
- China, the US, India and EU the key regions from our perspective

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Key Statoil scenario features

Reform	Renewal	Rivalry
• **A forward looking scenario** proceeding from current trends and consensus views on economic growth and other macro drivers • **Climate policy efforts:** Directed by the COP 21 agreement, i.e., by the nationally determined contributions adopted in Paris; assumed to be tightened during the '20s but not to the point of delivering the 2º target • **Economic growth**: Robust in the beginning, suffering at the end • **Geopolitical developments:** Benign, all regions able to progress	• **A back-cast** designed to deliver a global CO_2 emission curve consistent with the 2º target • **Climate policy efforts:** Stringent energy efficiency standards and renewable portfolio mandates, additional support for technology development, comparatively high carbon prices • **Economic growth:** Suffering in the beginning, robust at the end • **Geopolitical developments:** Favorable – perceptions of a common threat facilitate cooperation	• **A sensitivity on the Reform scenario** emphasizing the possibility of geopolitical tensions interfering with growth and policy making • **Climate policy efforts:** NDCs and 2º target fading; nominally still on but in practice ignored • **Economic growth:** Mixed across regions depending on location and vulnerability • **Geopolitical developments:** Generally unfavorable but with some regions suffering less than others; more protectionism; less technology exchange

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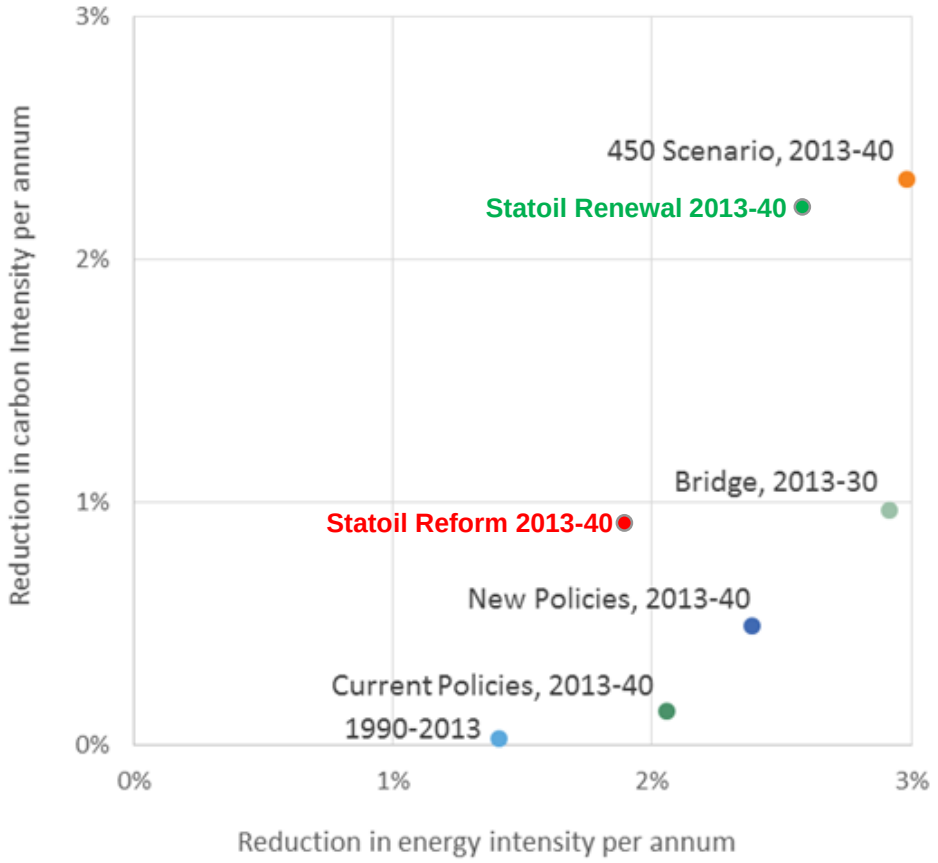
Renewal: A challenging proposition

Reform not a walk in the park either



- Major gaps between what has been achieved in the past and what we need to aim for now
- Plenty of reasons for assuming the future will not mimic the past …
- … but does that mean history has no relevance whatsoever?

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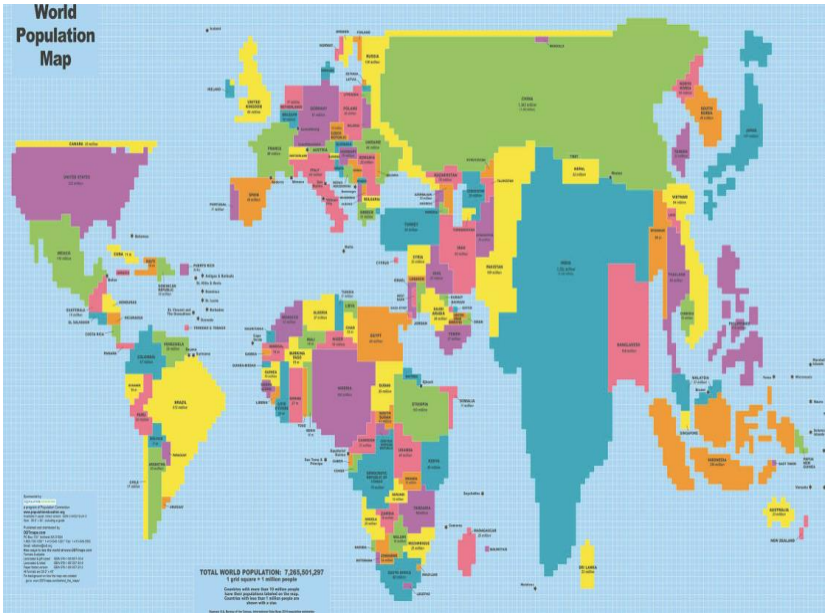
Population and GDP growth – still drivers of energy demand

At least in the emerging economies and Asia in particular

The global population centre is in Asia

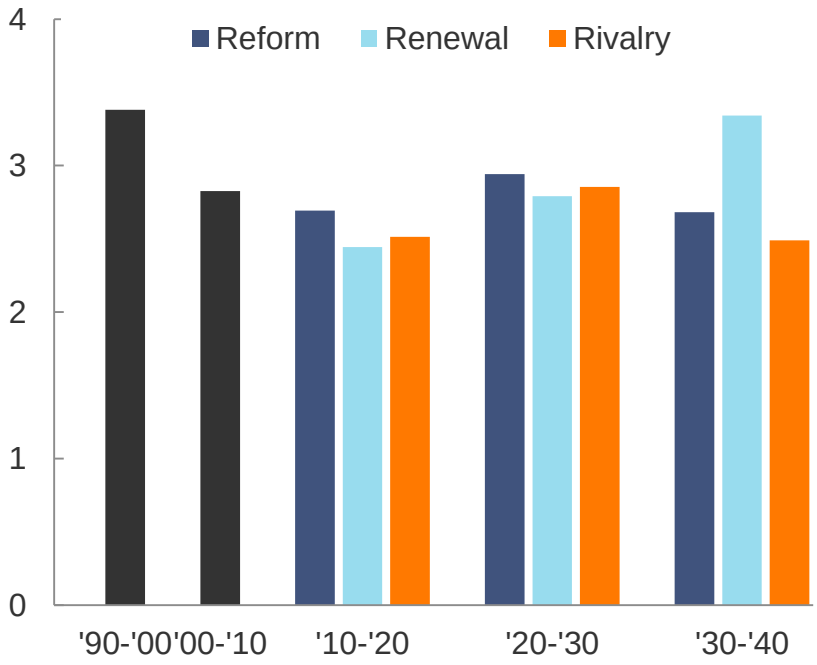
Each small square represents 1 million people



EP relies on the UN's medium fertility population growth assumptions

World GDP growth rates

%



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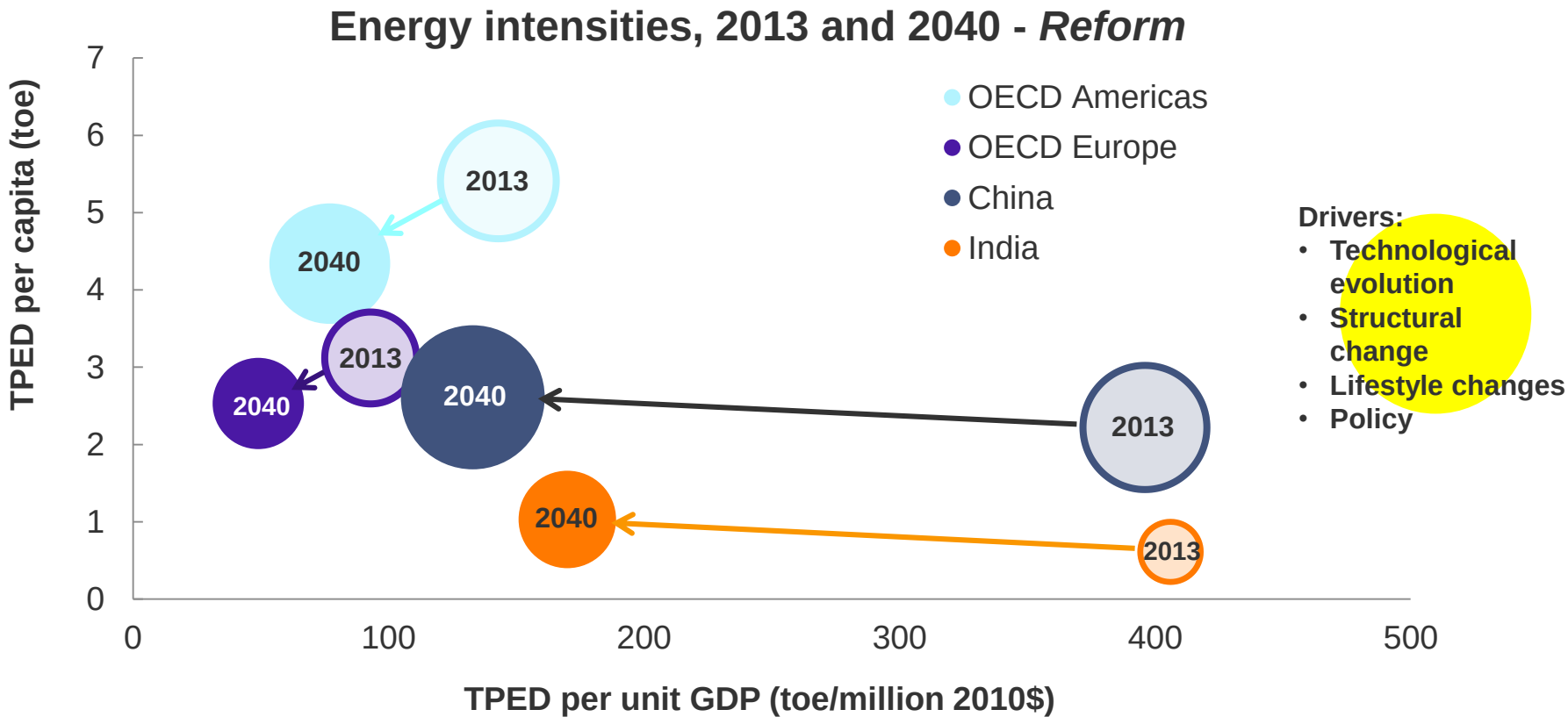
But the link between population and economic growth, and energy demand growth, is weakening



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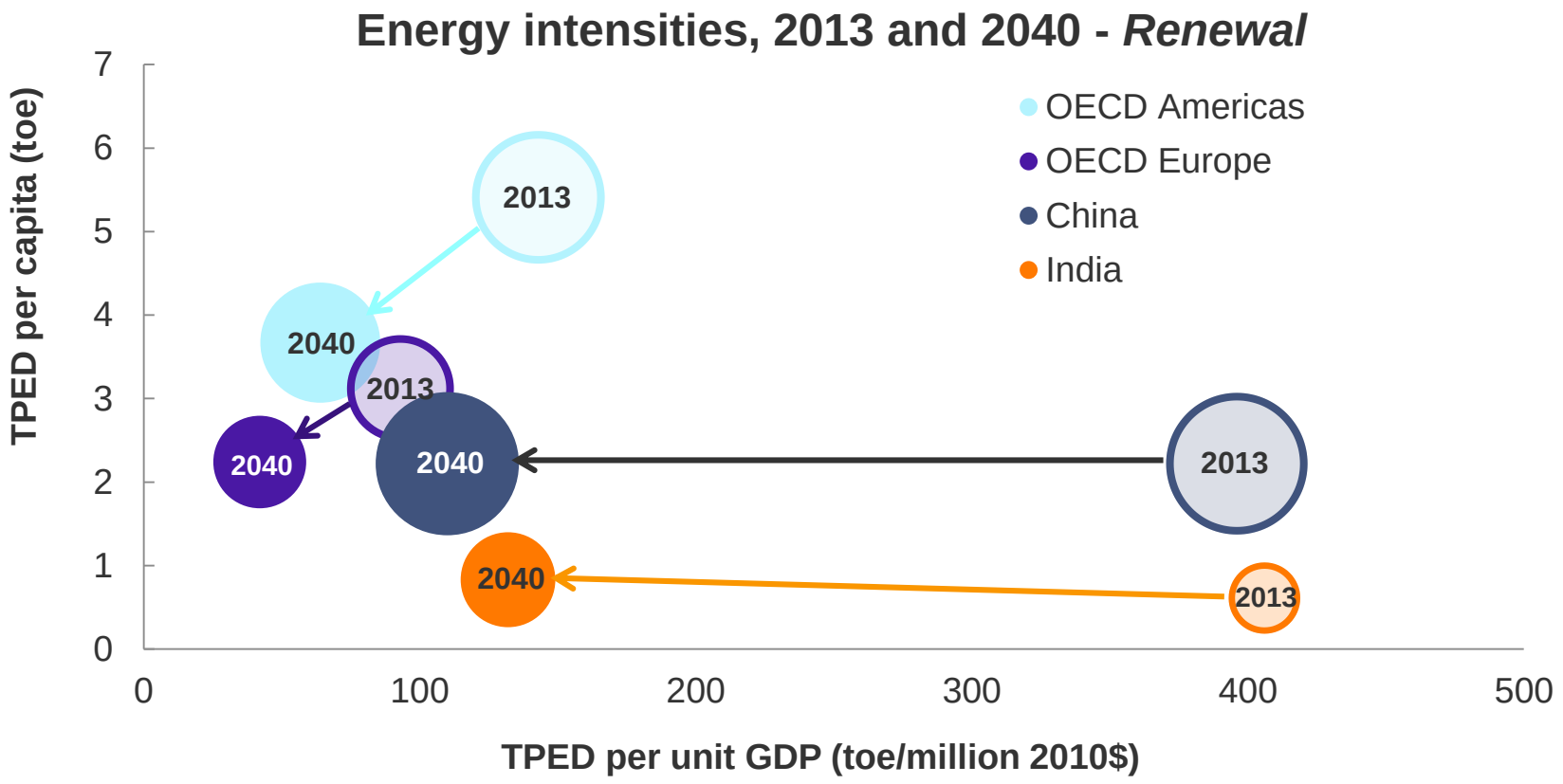
… and this is a trend that will strengthen in a climate constrained world



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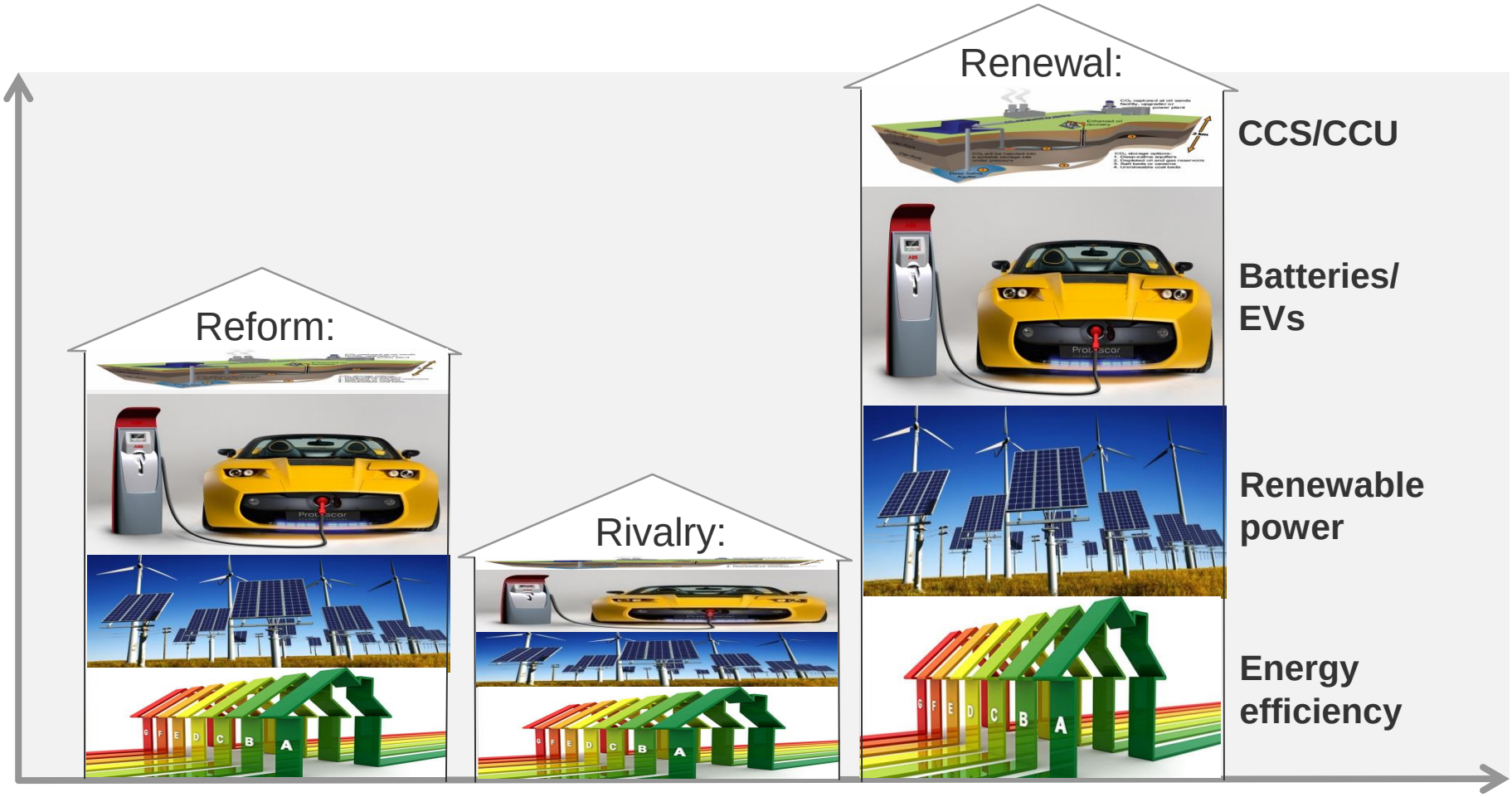
Technologies receiving special attention



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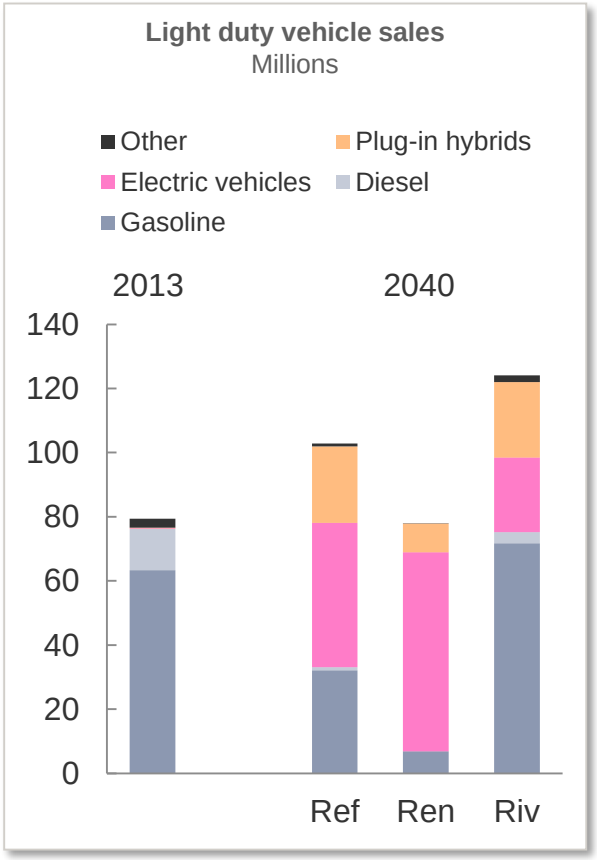
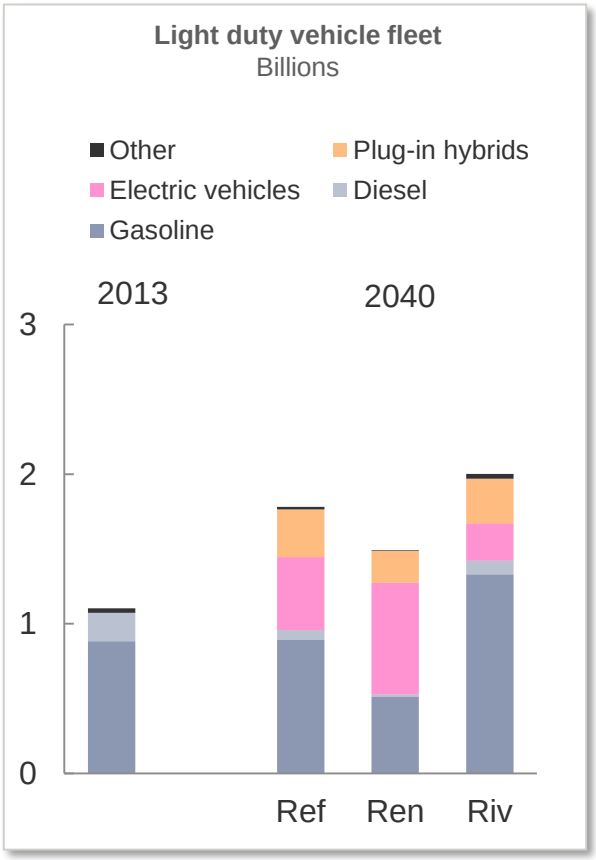
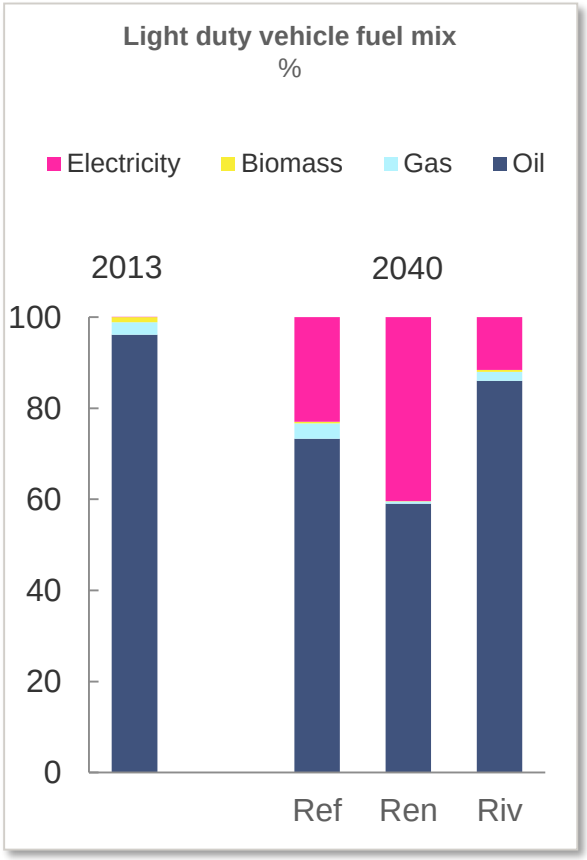
Light duty vehicle technology shifts

… in all scenarios, especially in Renewal







Source: IEA (history), Statoil (projections)

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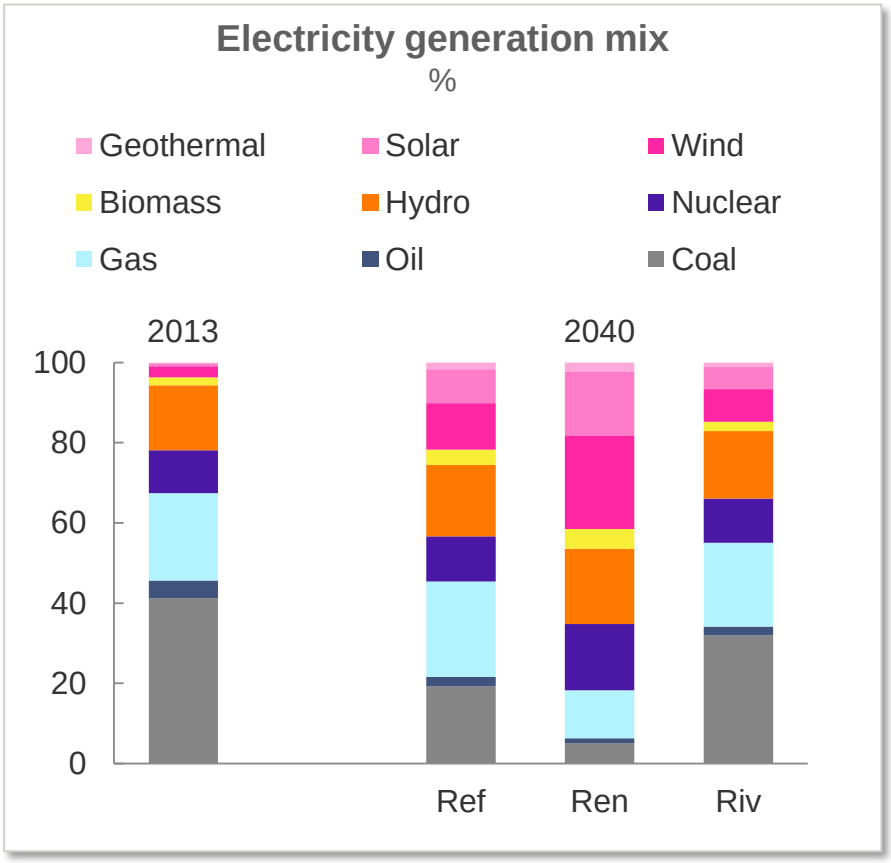
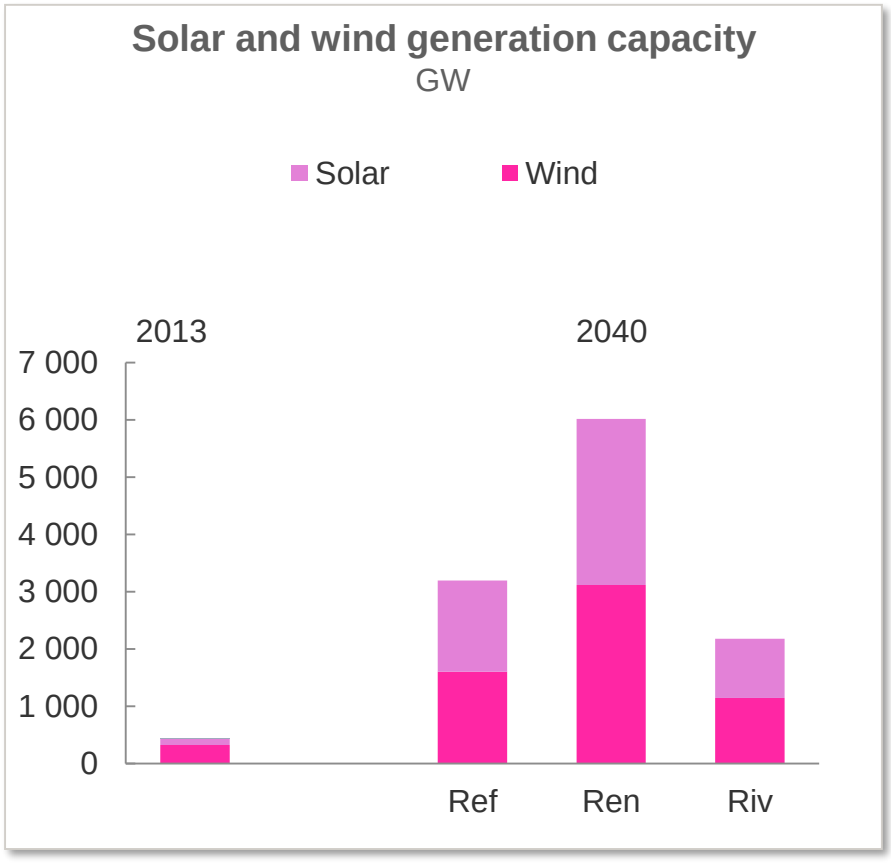
Power sector technology shifts

Large investments in new renewables required





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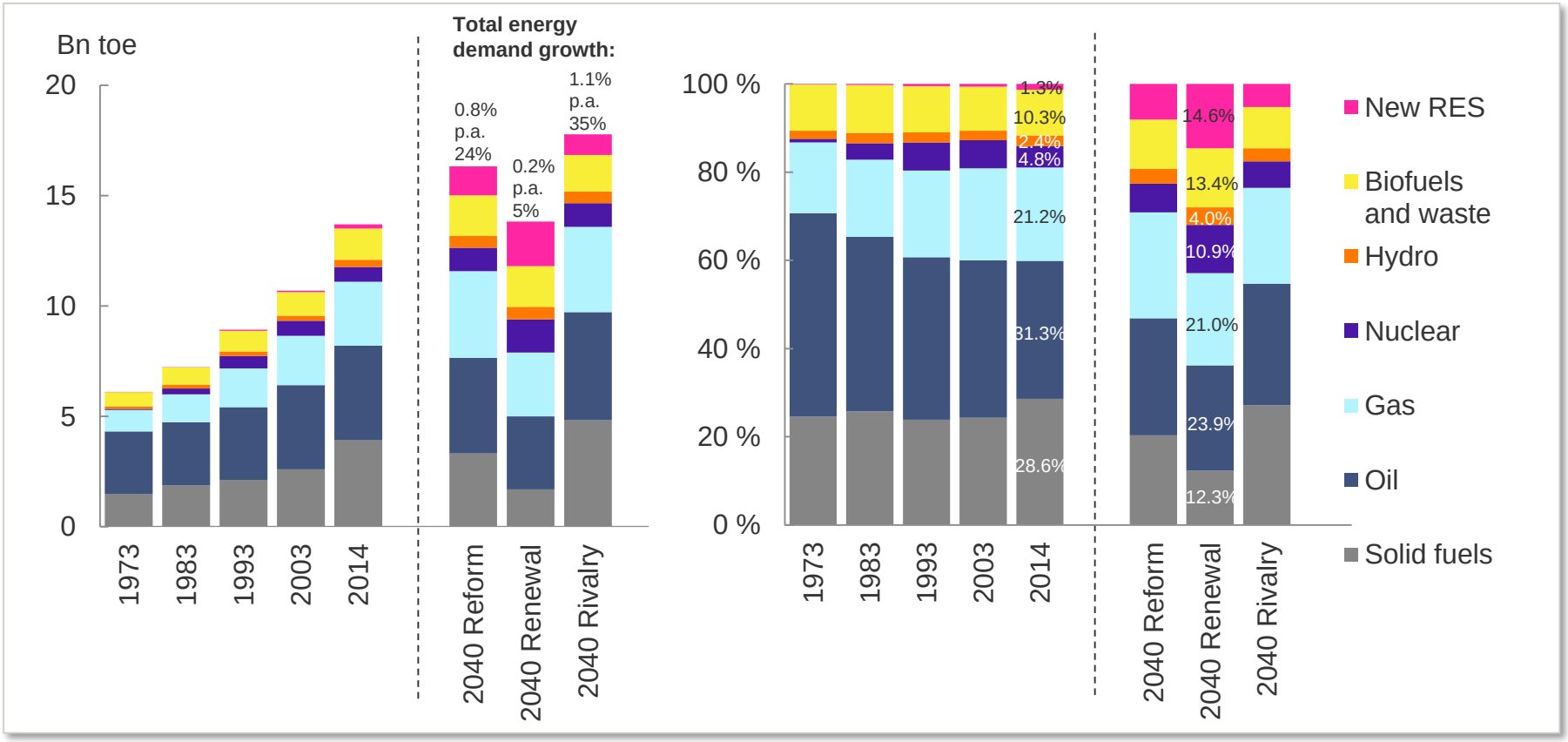
The global energy mix set for major changes

… with Renewal displaying a paradigm shift



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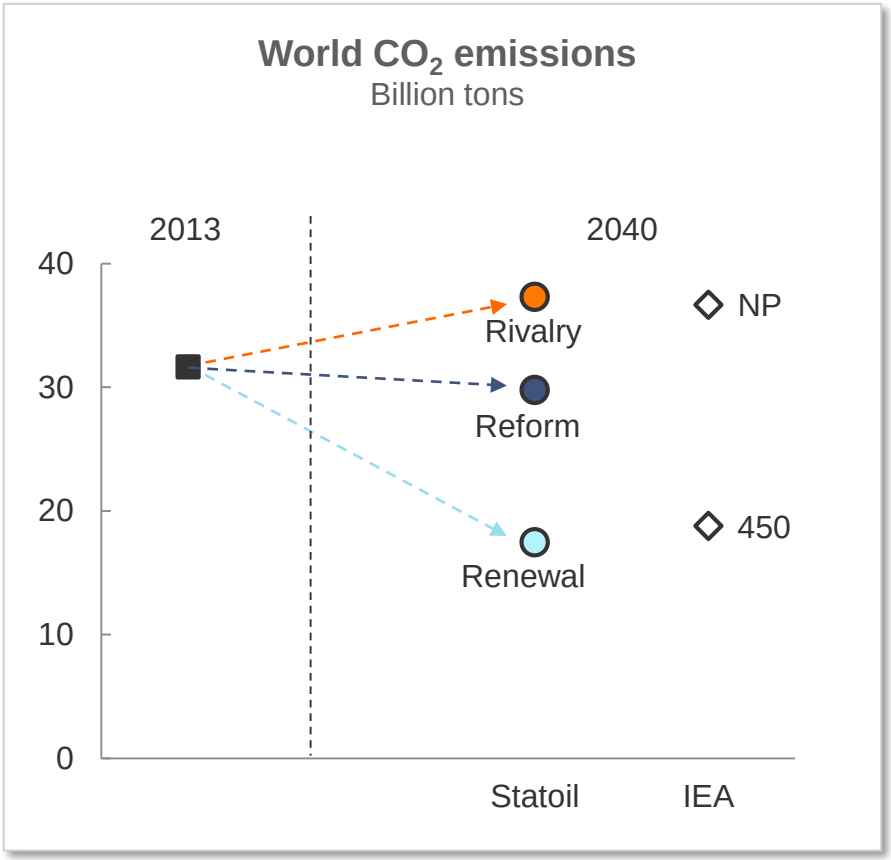
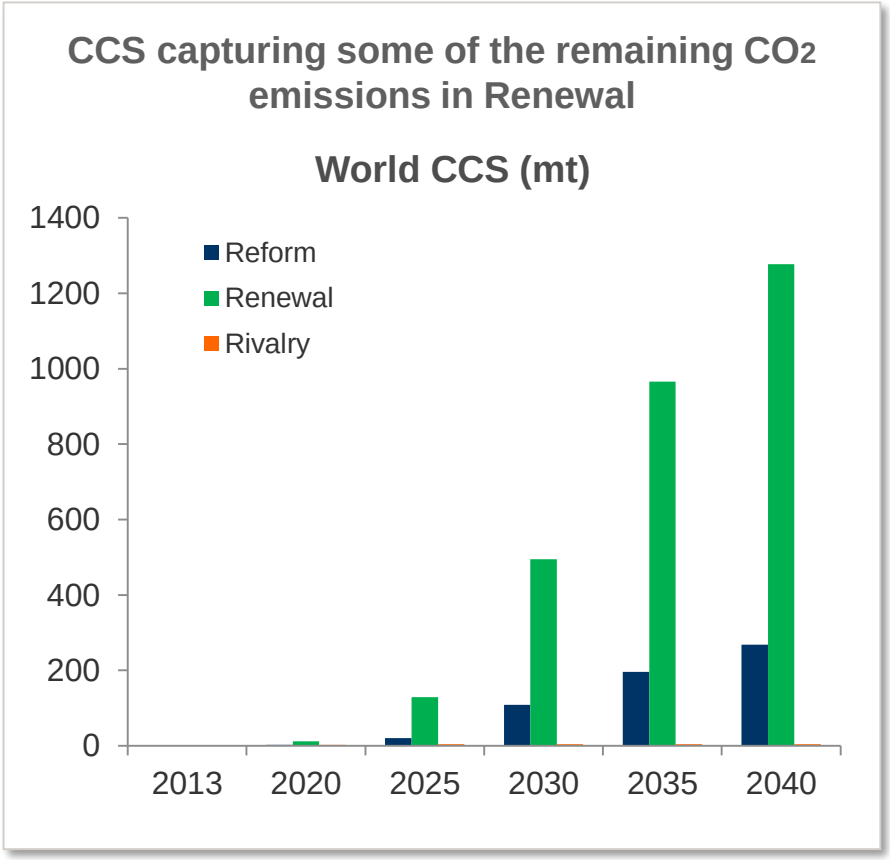
CO_2 emissions down in two of three scenarios

Climate policies contributing in Reform, driving Renewal





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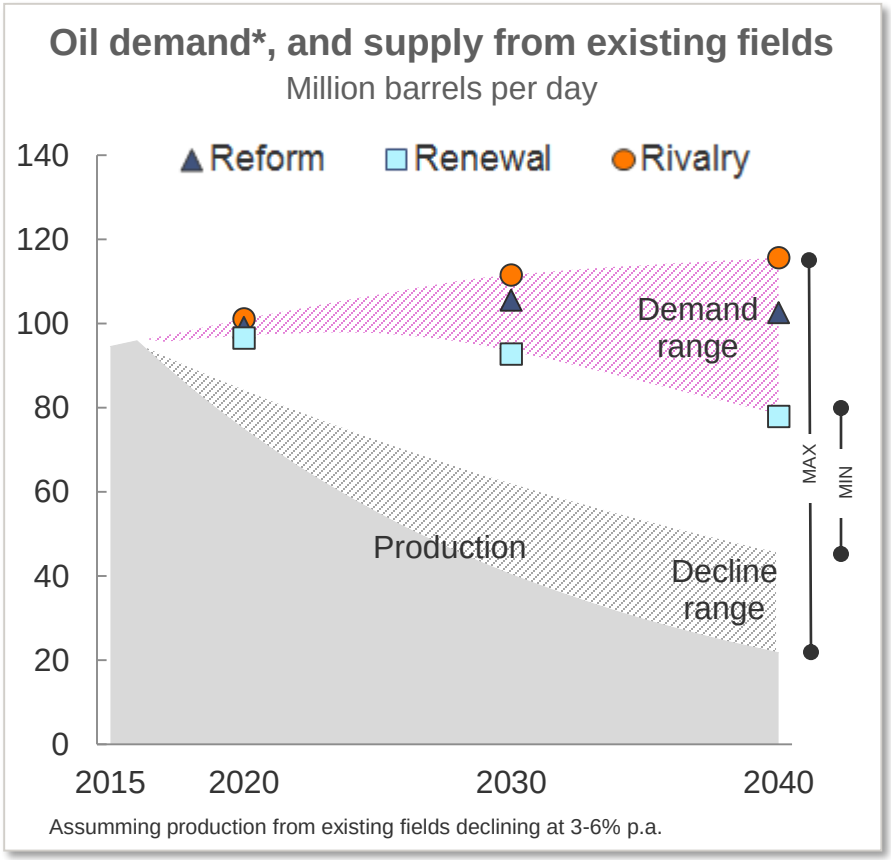
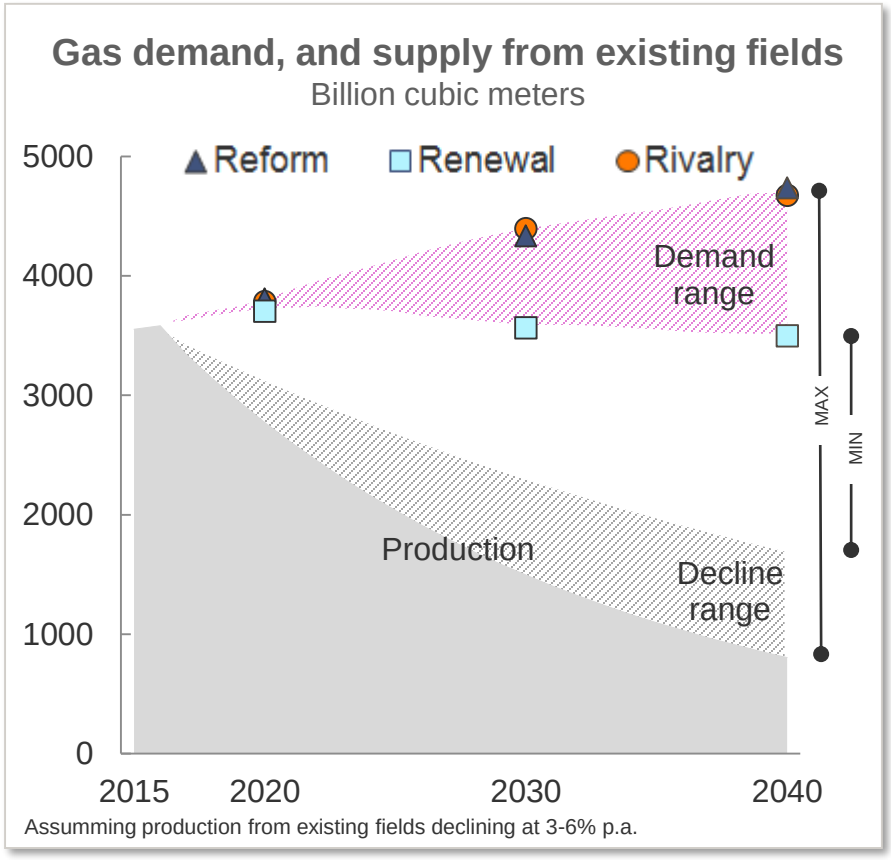
Oil, and later gas, demand will peak

… but that does not make E&D pointless





Sources: IEA, Statoil (projections)

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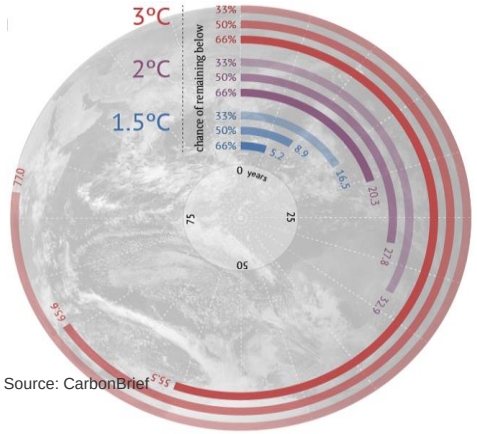
Signposts: Rivalry looking more credible by the day?

Though many more questions than answers

- First Brexit, then Trump… what next?
- Growing distrust in conventional politics, growing room for populism
- Trump says he will pull the US out of the Paris agreement
  - Options: Exit the agreement 3+1 years from 4 Nov 2016, exit the UNFCCC 1 year from taking office, disregard the US pledge
- Will he change his mind?
- If not, consequences for the other signatories' preparedness to deliver on their commitments? Especially for those whose made their commitments conditional on external finance?
- The envisaged energy transition may be delayed by some years…
  - putting emission reduction targets that already look very ambitious, out of reach?
- … but hardly for decades due to pressure from the climate itself, self-sustaining green energy cost declines and commercially driven innovation



Source: CarbonBrief

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There's never been a better time for good ideas

Thank you!

www.statoil.com/energyperspectives

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