



Energy Perspectives 2017

Long-term macro and market outlook

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Energy Perspectives 2017

Macro and market outlook to 2050 – www.statoil.com/energyperspectives

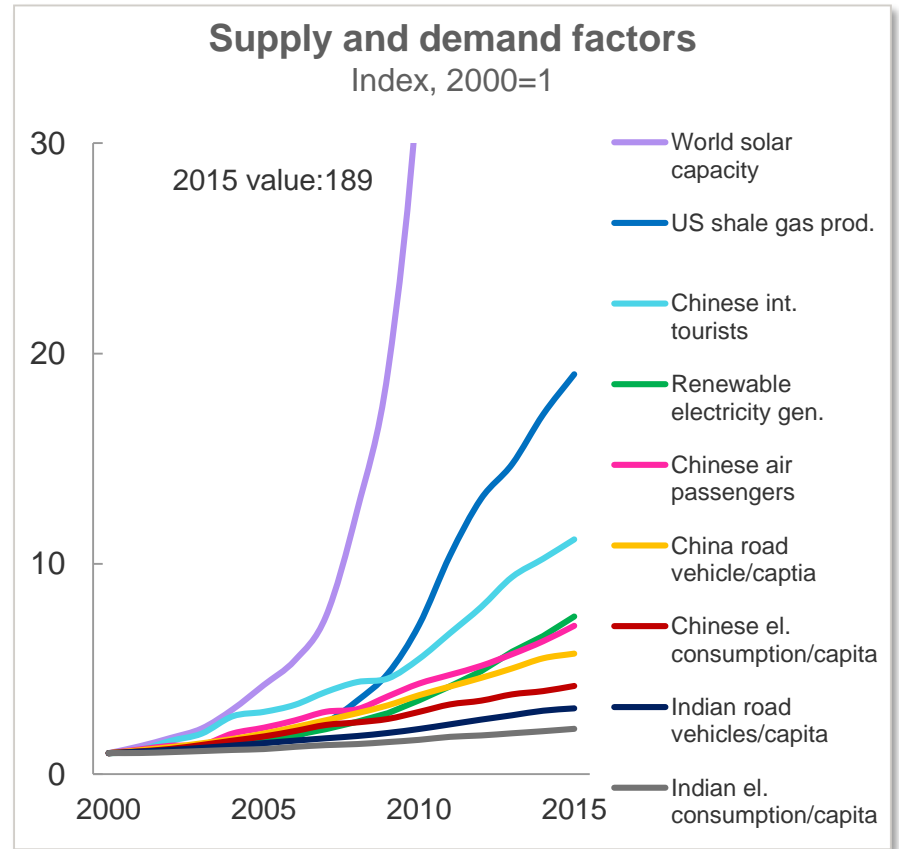


Significant uncertainty and large changes

... calling for the use of scenarios



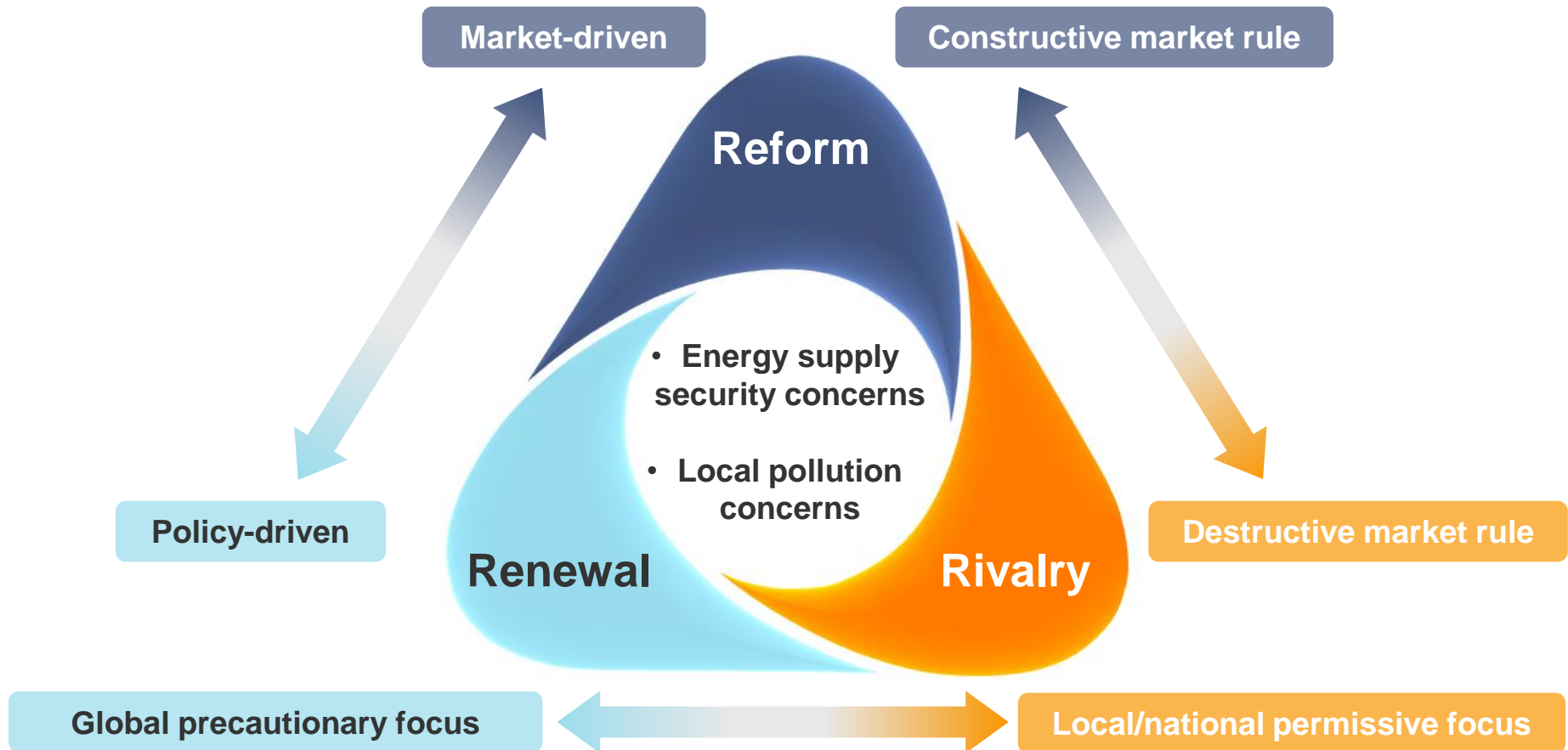
Source: The Economist



Source: World Bank, IEA, IRENA, EIA

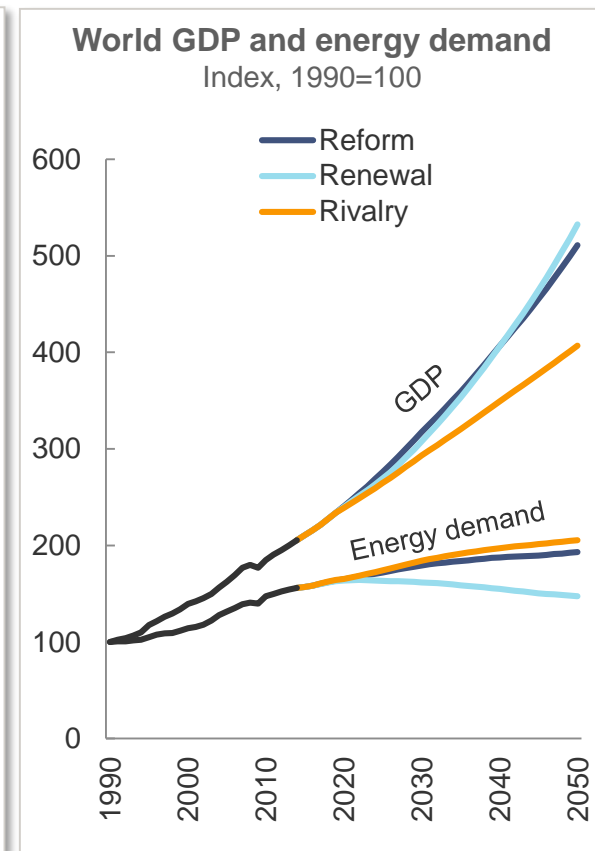
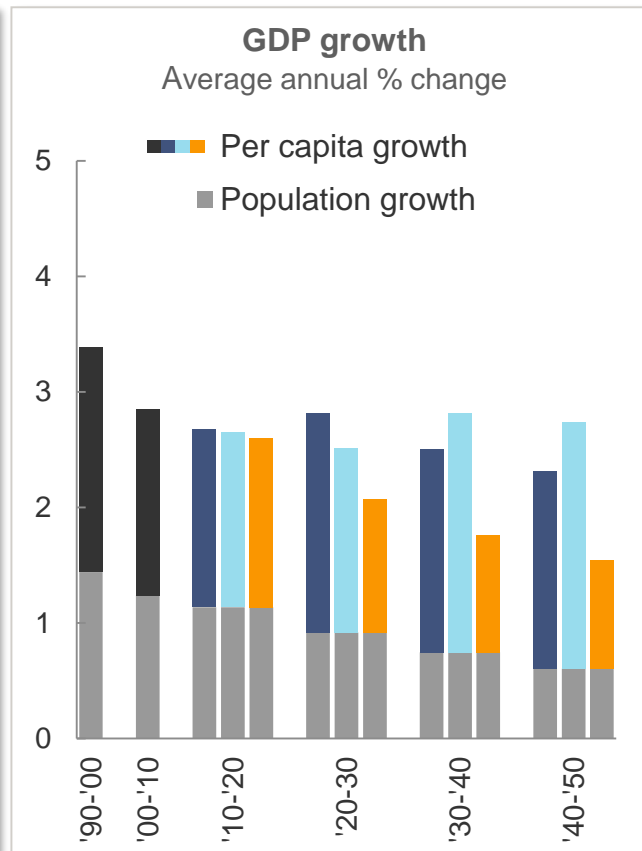
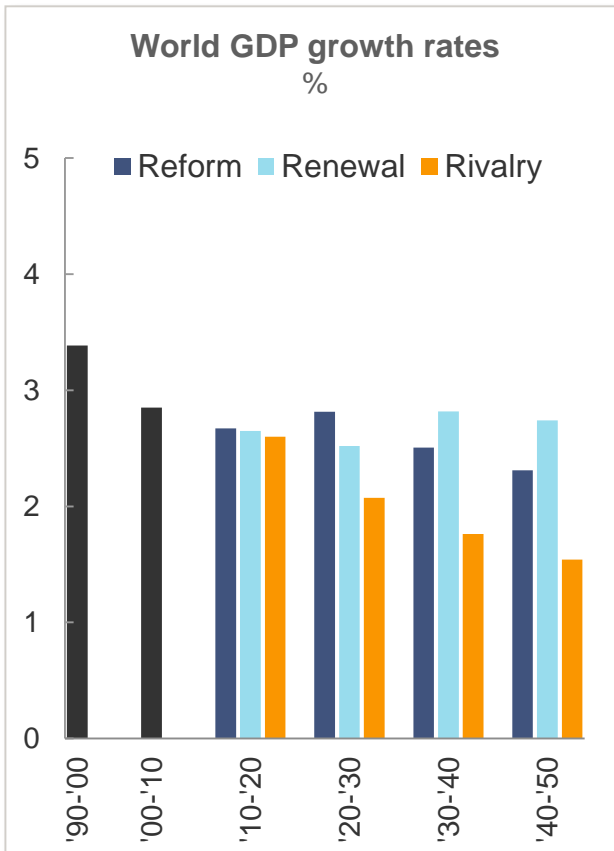
Three different tales of the future towards 2050

None are BAU – Renewal a tremendous challenge, Rivalry unpleasant



Economic growth varies over time and across the scenarios

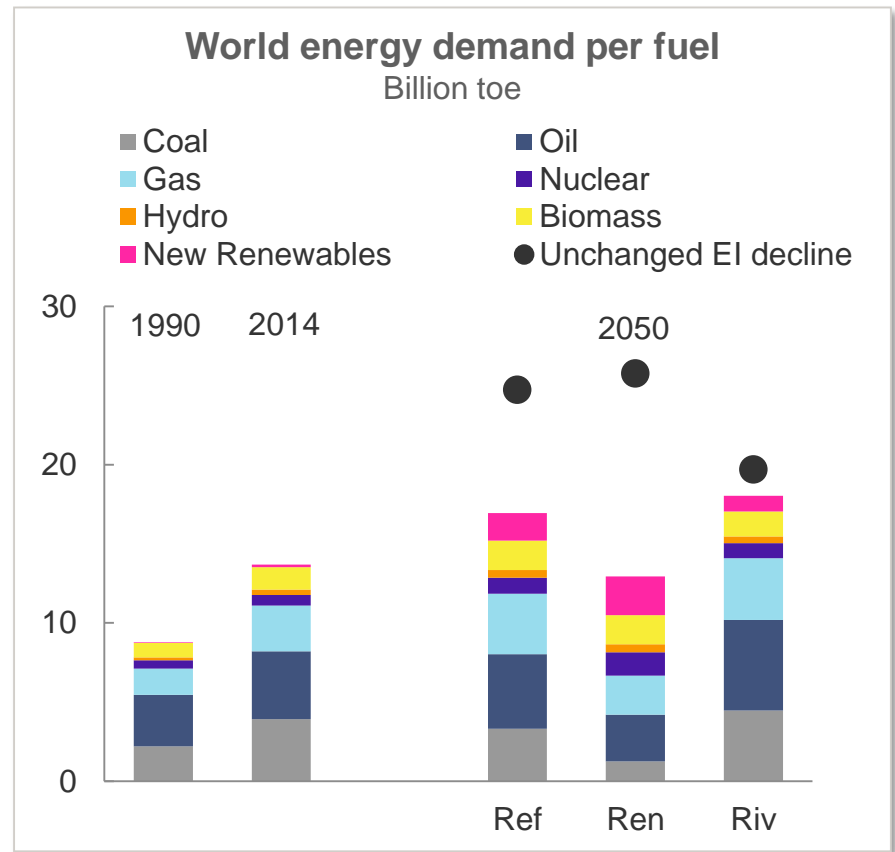
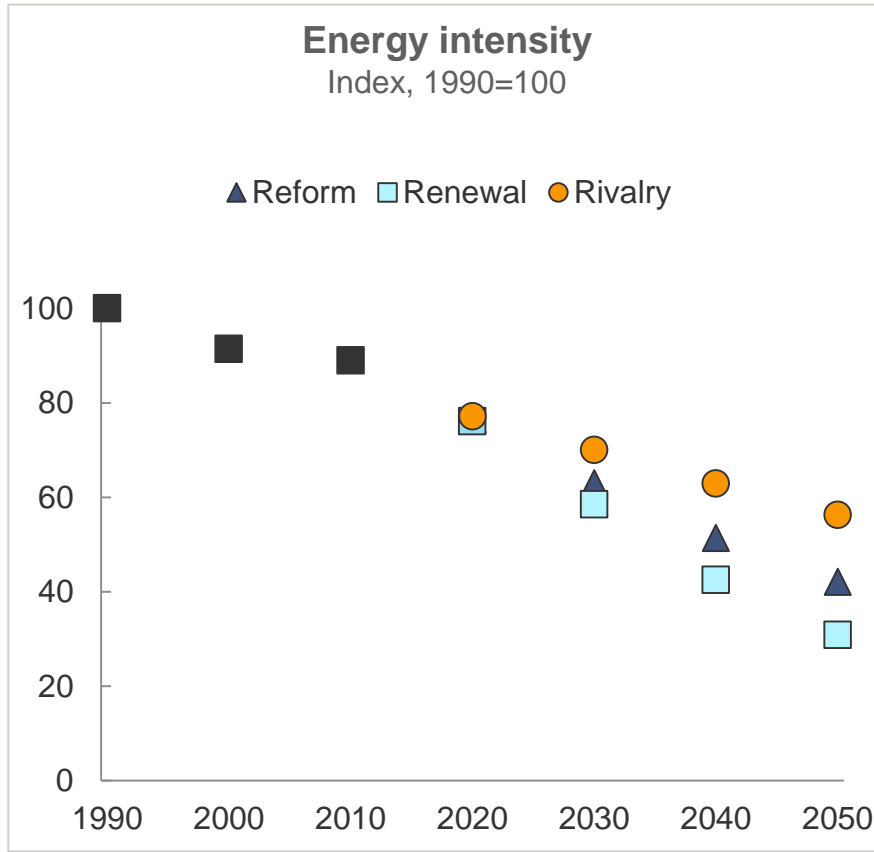
Global GDP 2-2.6 times higher in 2050, Renewal highest, Rivalry lowest



Source: IEA (historical demand), UN (Population/historical GDP), Statoil (projections)

Key #1: Energy efficiency improvement

Reform, and especially Renewal: step change in global energy efficiency

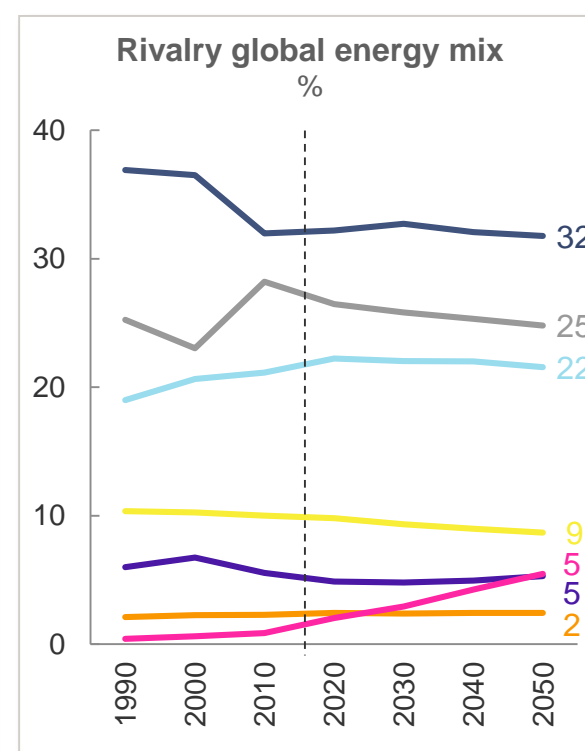
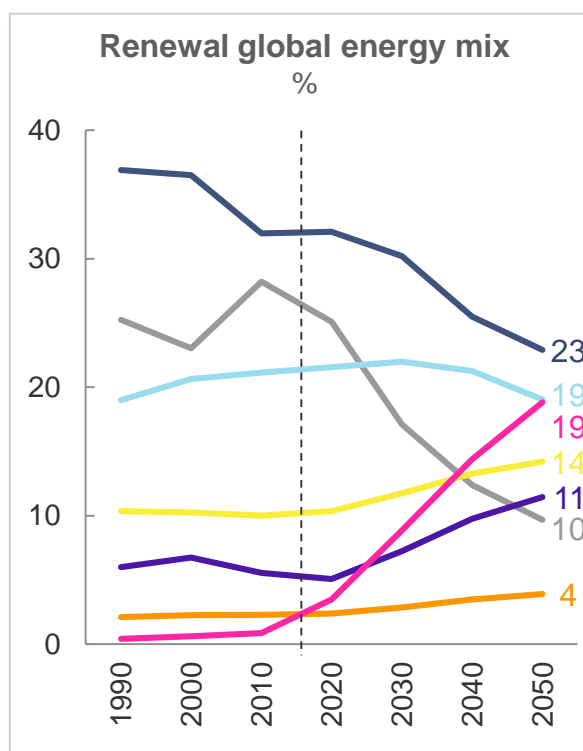
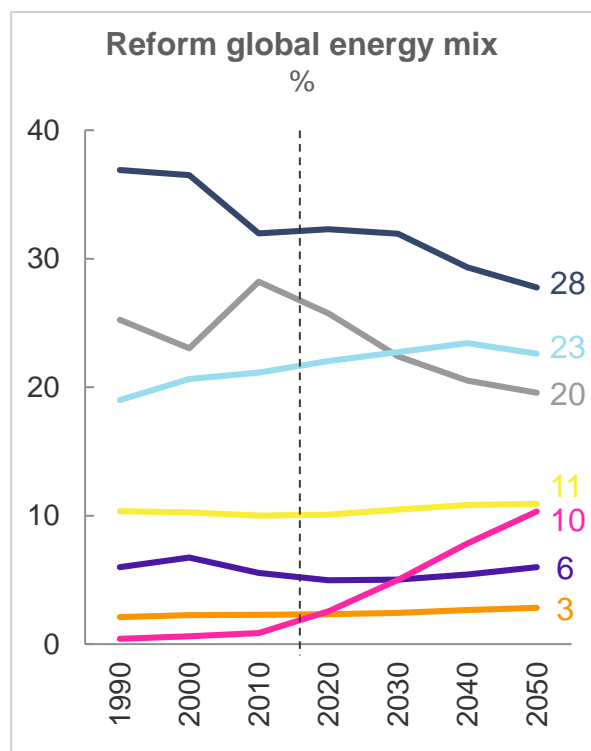


Source: IEA (history), Statoil (projections)

Key #2: Speeding up the change in global energy mix

... with Renewal displaying a paradigm shift

Oil Coal Gas Biomass Nuclear Hydro New RES



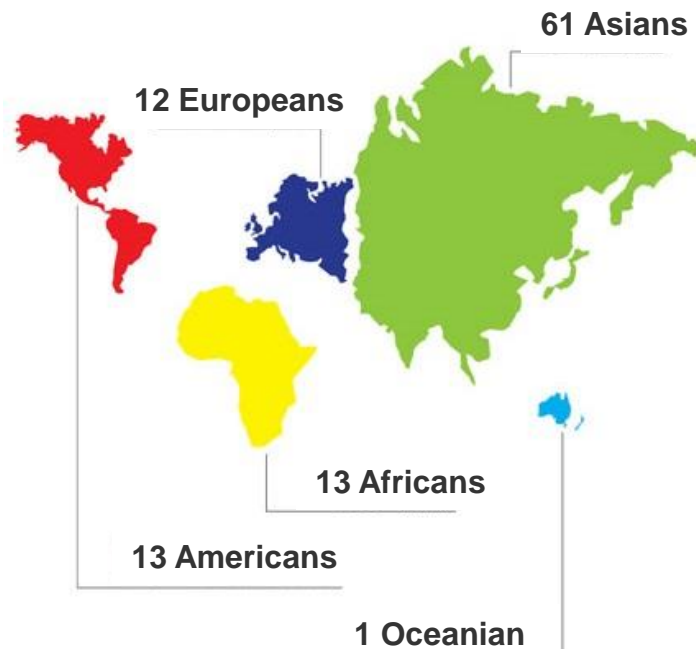
Source: IEA (history), Statoil (projections)

A strong trend affecting economics and energy

All growth in energy demand in emerging economies, in particular in Asia

The global population centre is in Asia

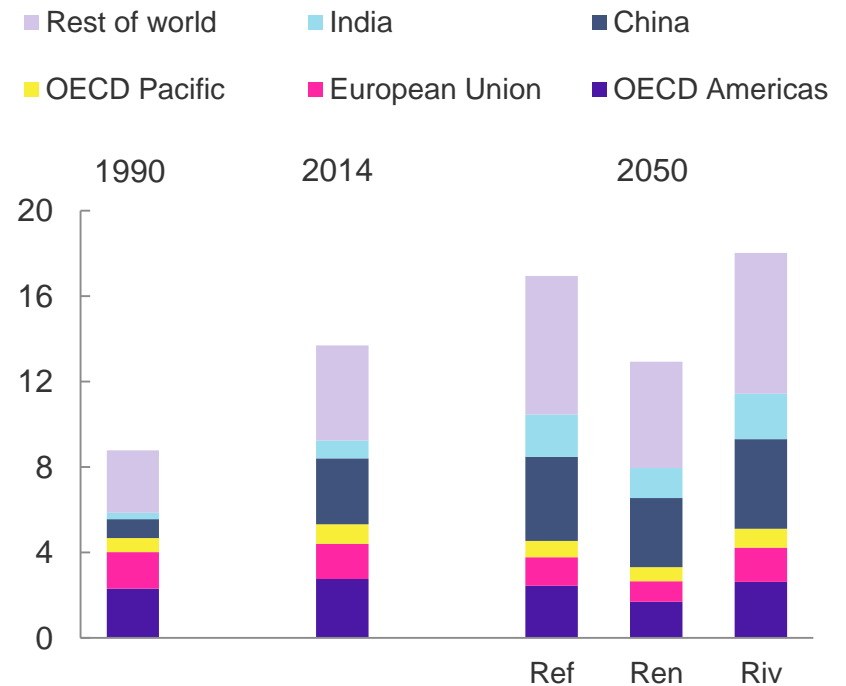
If the world were a village of 100 people...



Source: visualnews

World energy demand per region

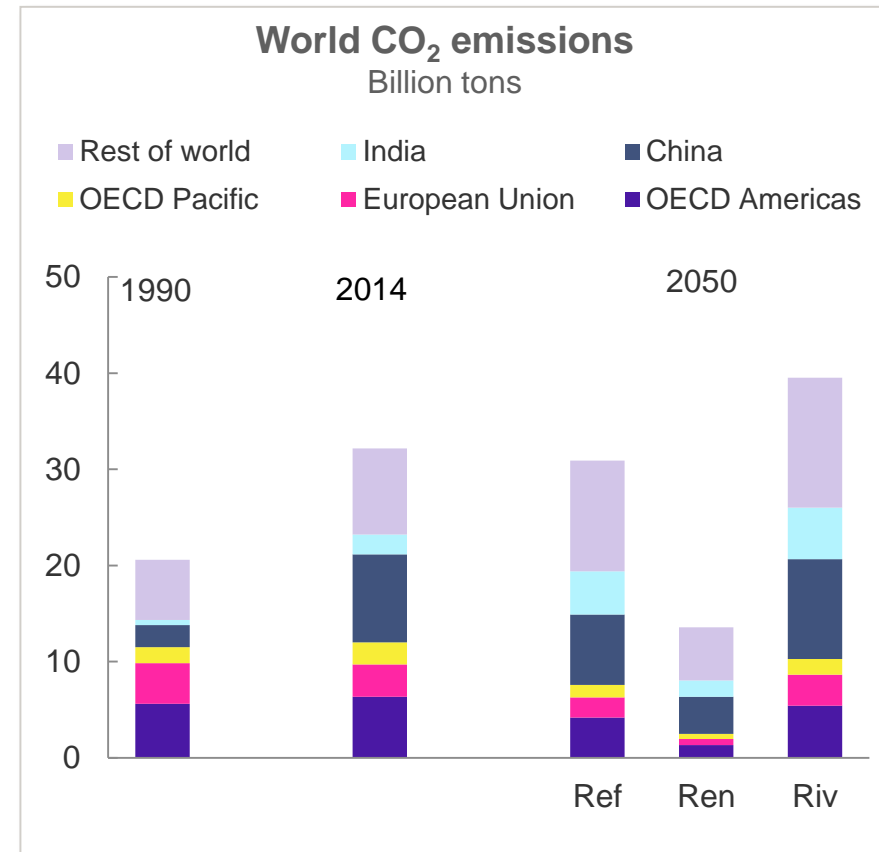
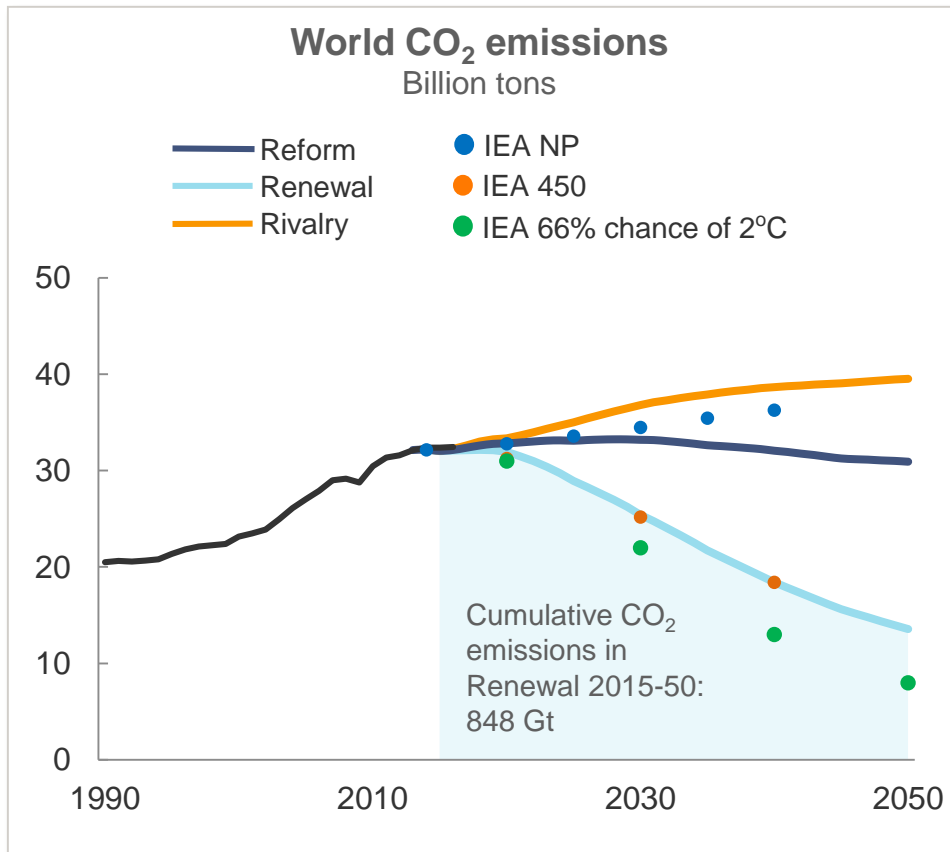
Billion toe



Source: IEA, Statoil (projections)

CO₂ emissions determined by demand and mix

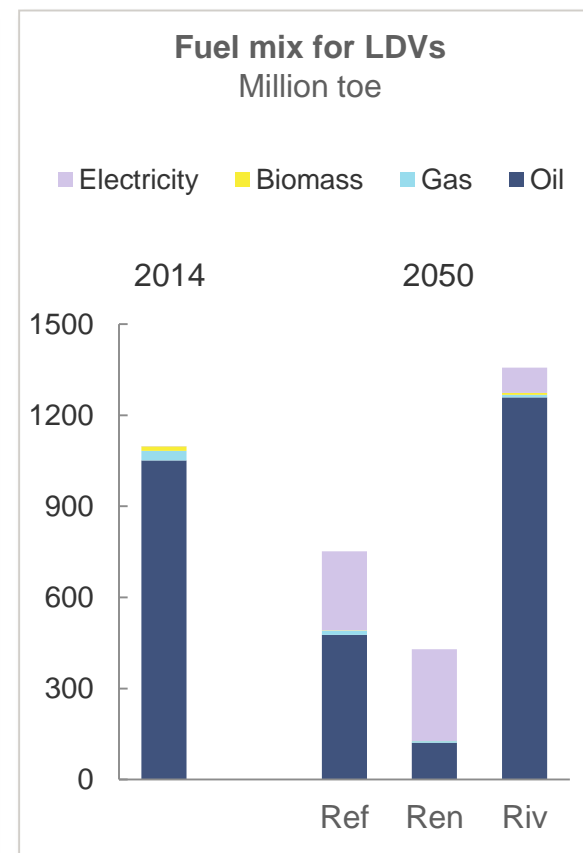
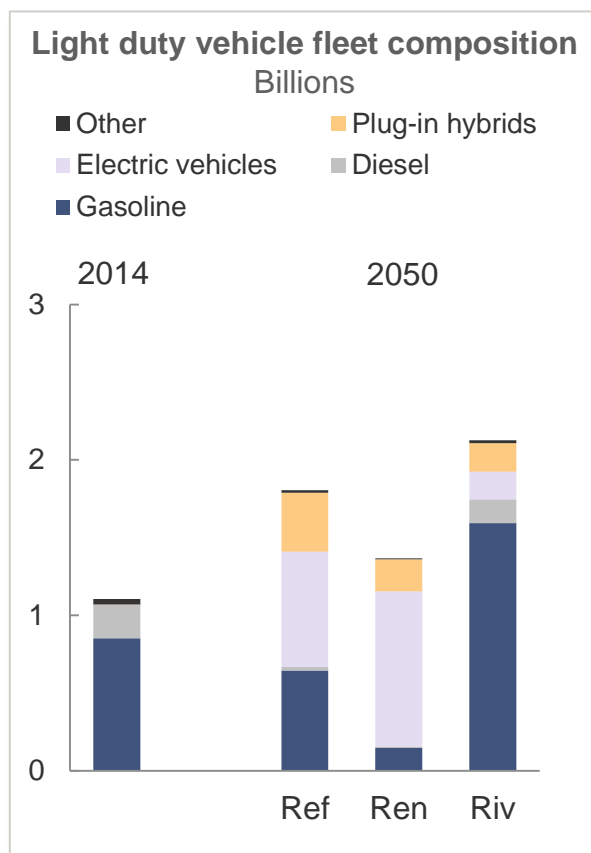
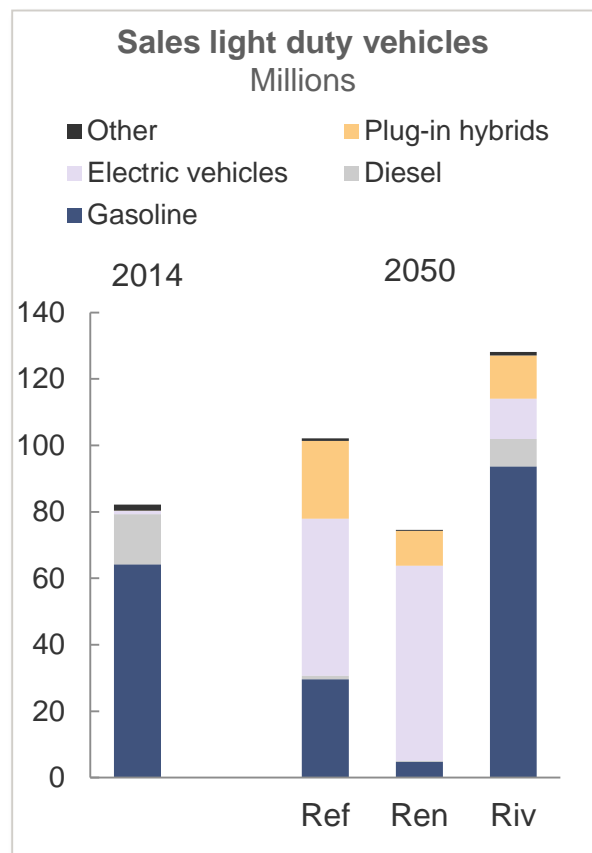
Policies, markets, and technology having varying impact



Source: IEA (history), Statoil (projections)

Technology shift for light duty vehicles

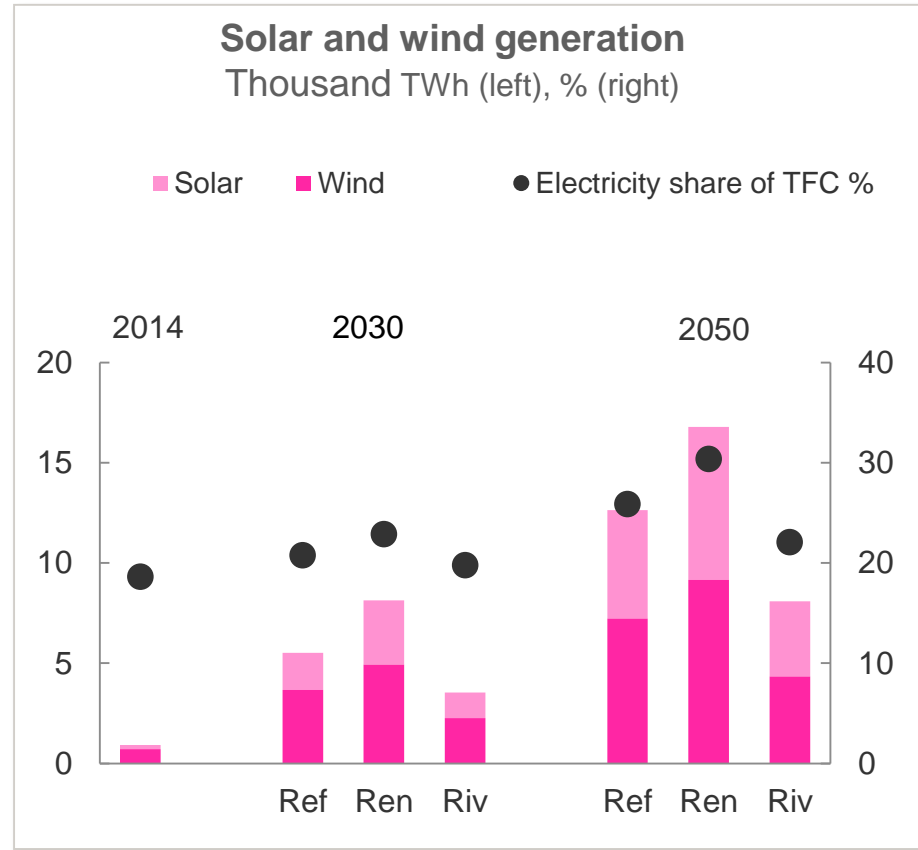
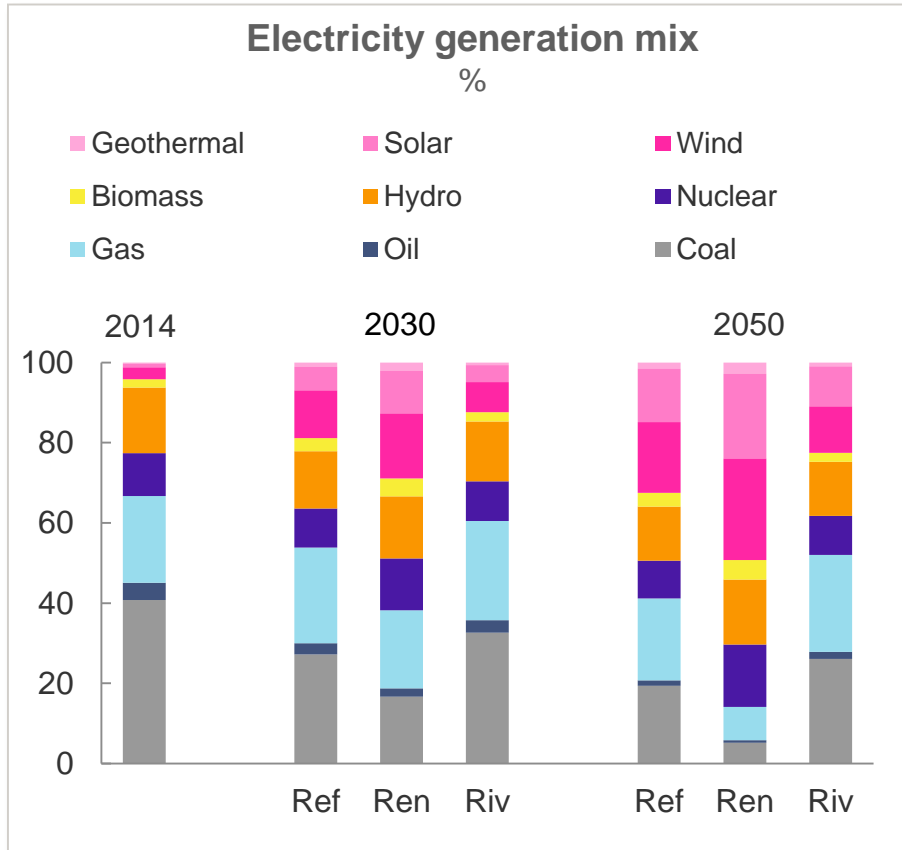
... in all scenarios, and a revolution in Renewal



Source: IEA (history), Statoil (projections)

Decarbonise electricity, and go electric

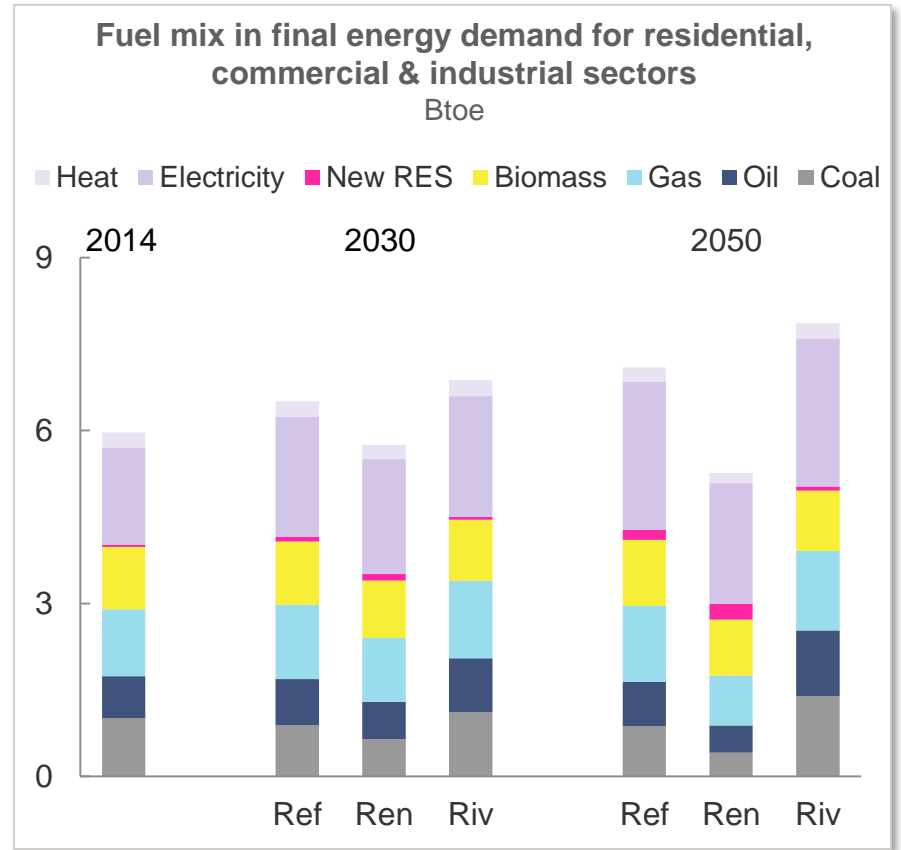
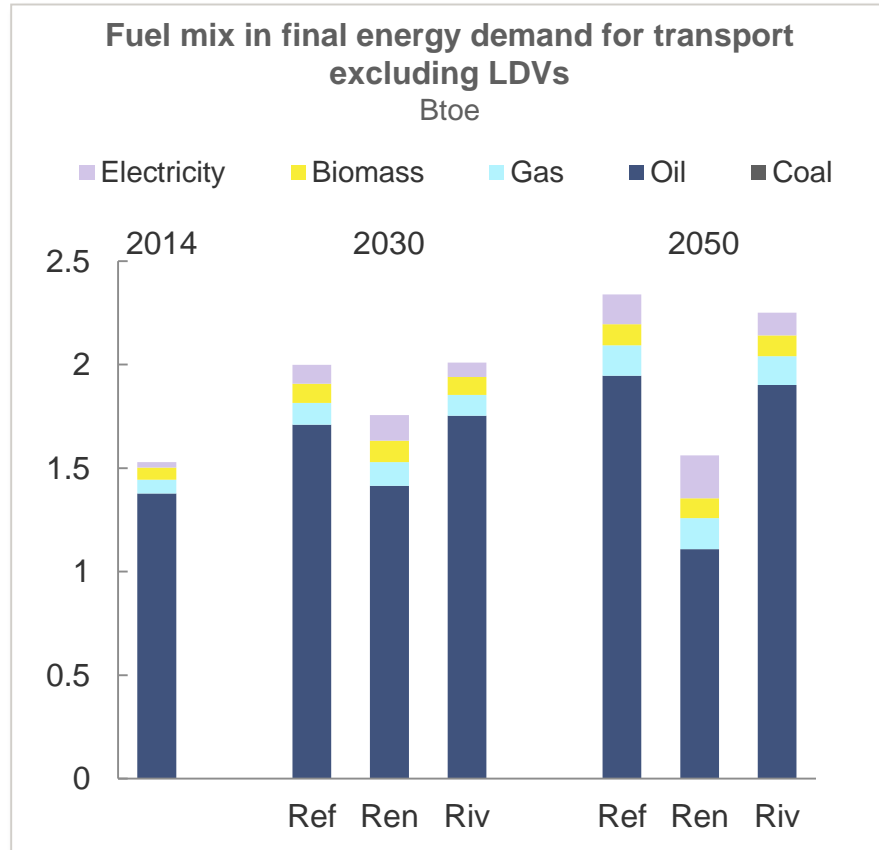
13-doubling of wind, 39-doubling of solar generation in Renewal



Source: IEA (history), Statoil (projections)

Oil and gas dominate in other sectors

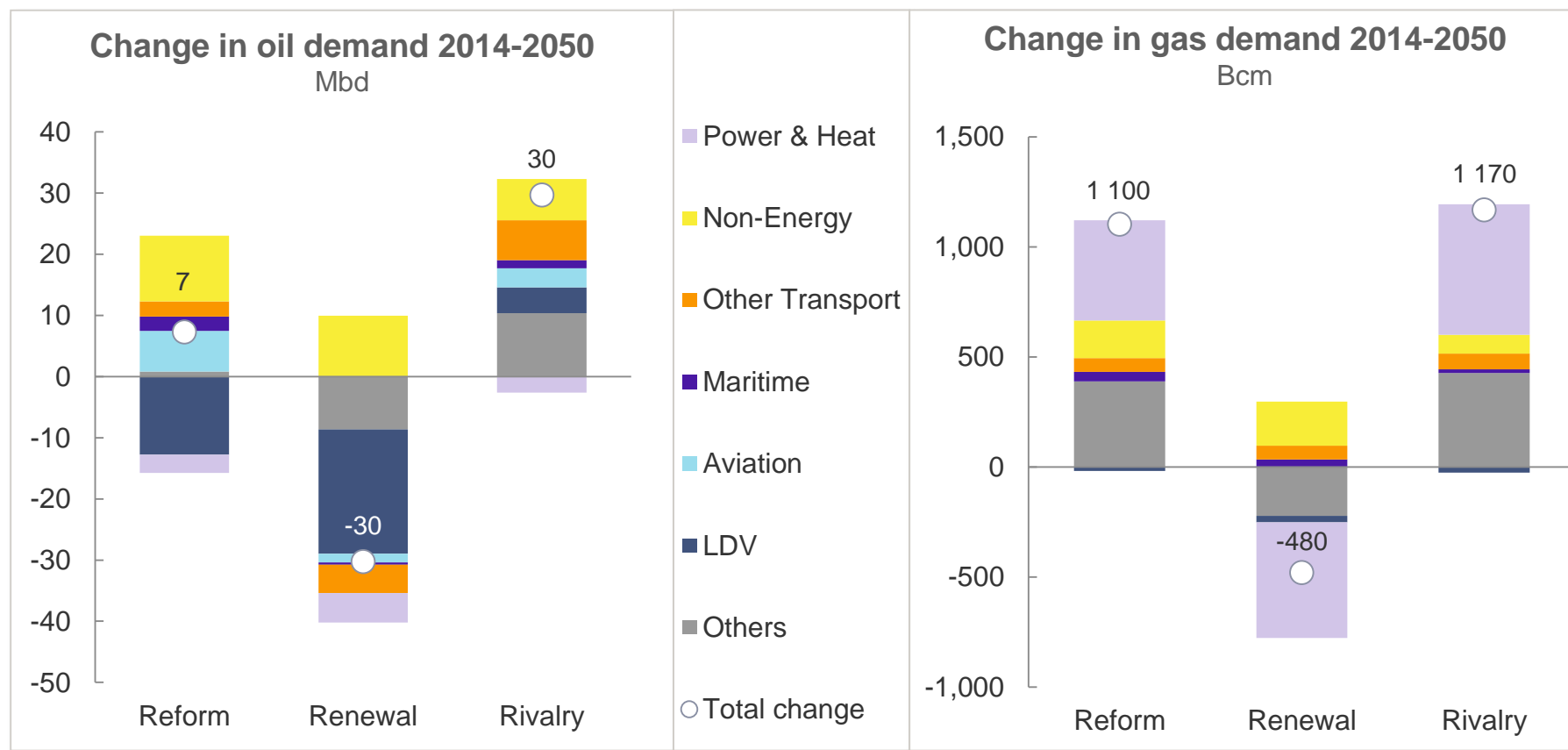
... contributing to maintaining demand for fossil fuels



Source: IEA (history), Statoil (projections)

Global oil and gas demand growth varies

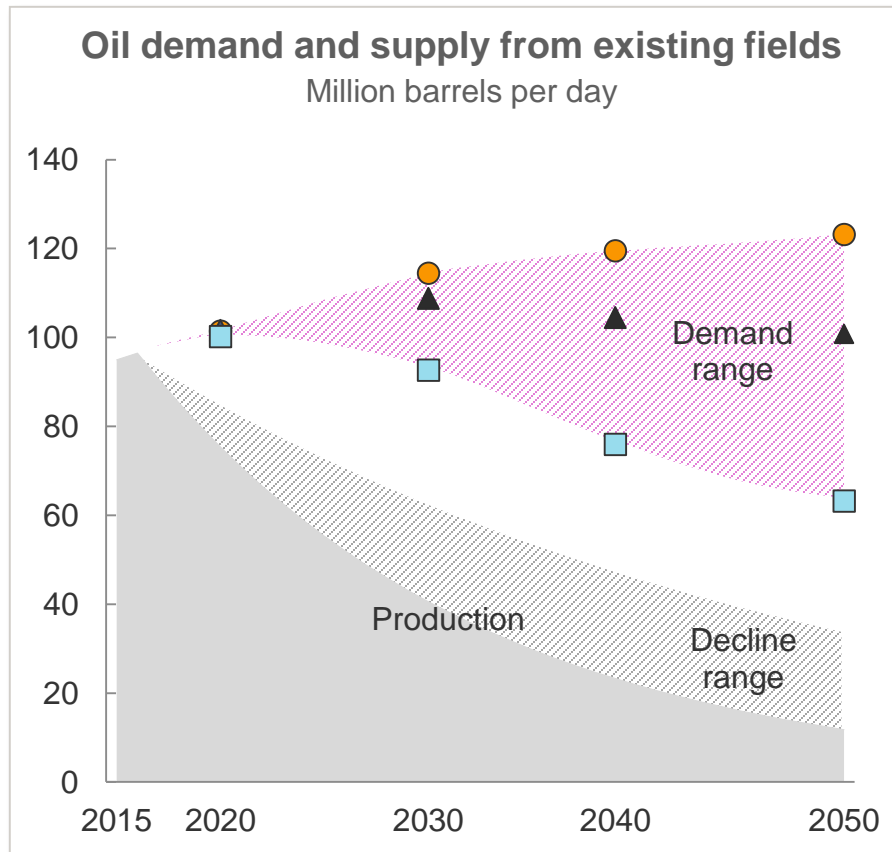
Depending on scenario – but non-energy demand growth is significant



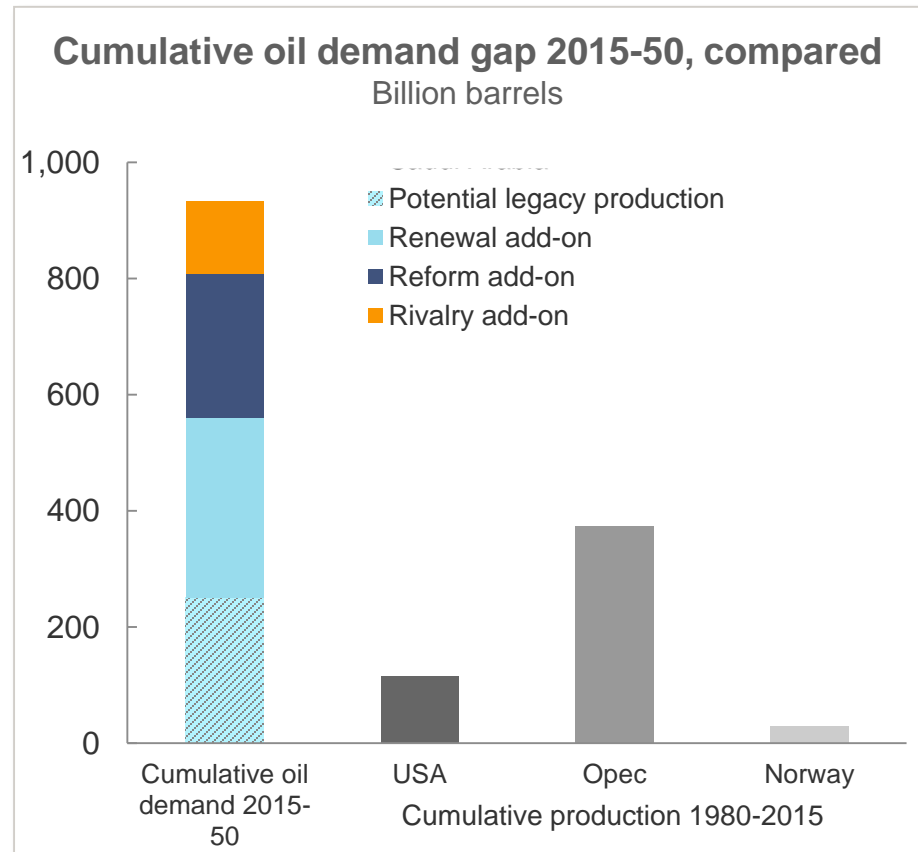
Source: IEA (history), Statoil (projections)

Huge investments needed in oil in all scenarios

...to replace production and satisfy demand



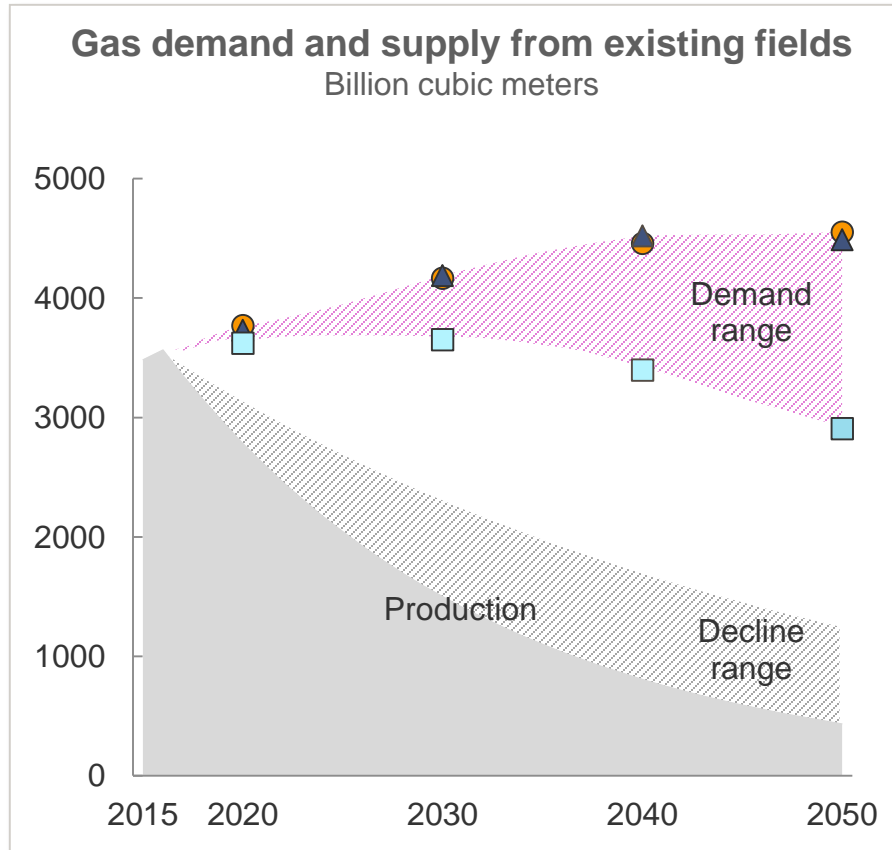
Source: Statoil



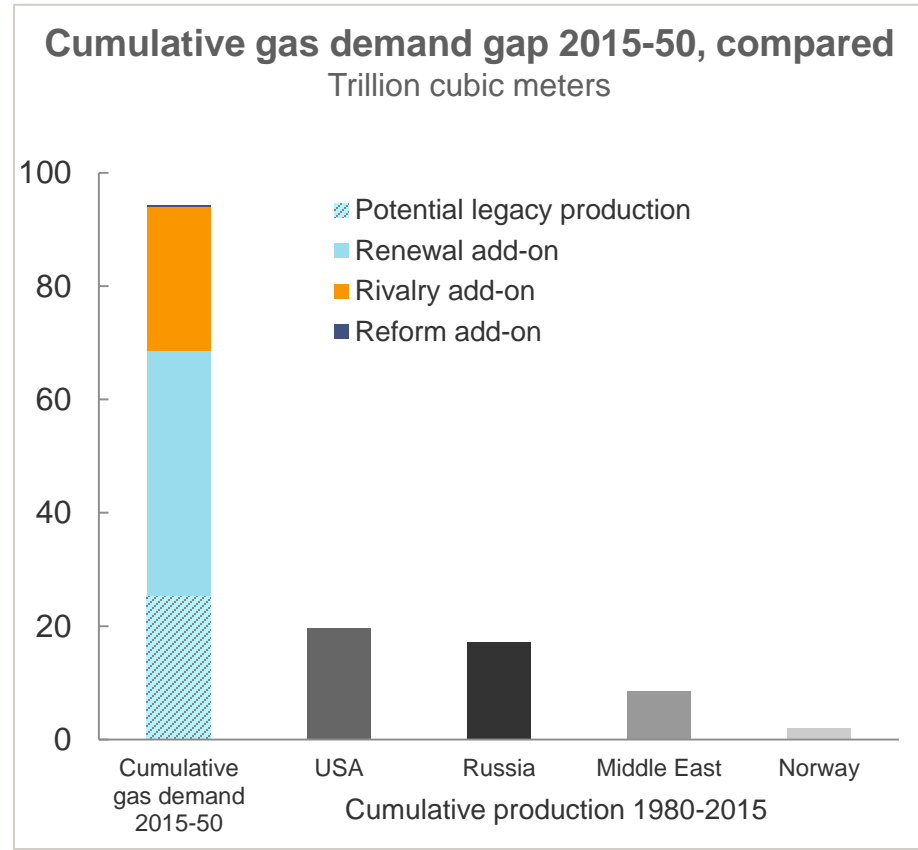
Source: Statoil (projections), BP statistical review of world energy (history)

...and the same is the case for gas

...to replace production and satisfy demand

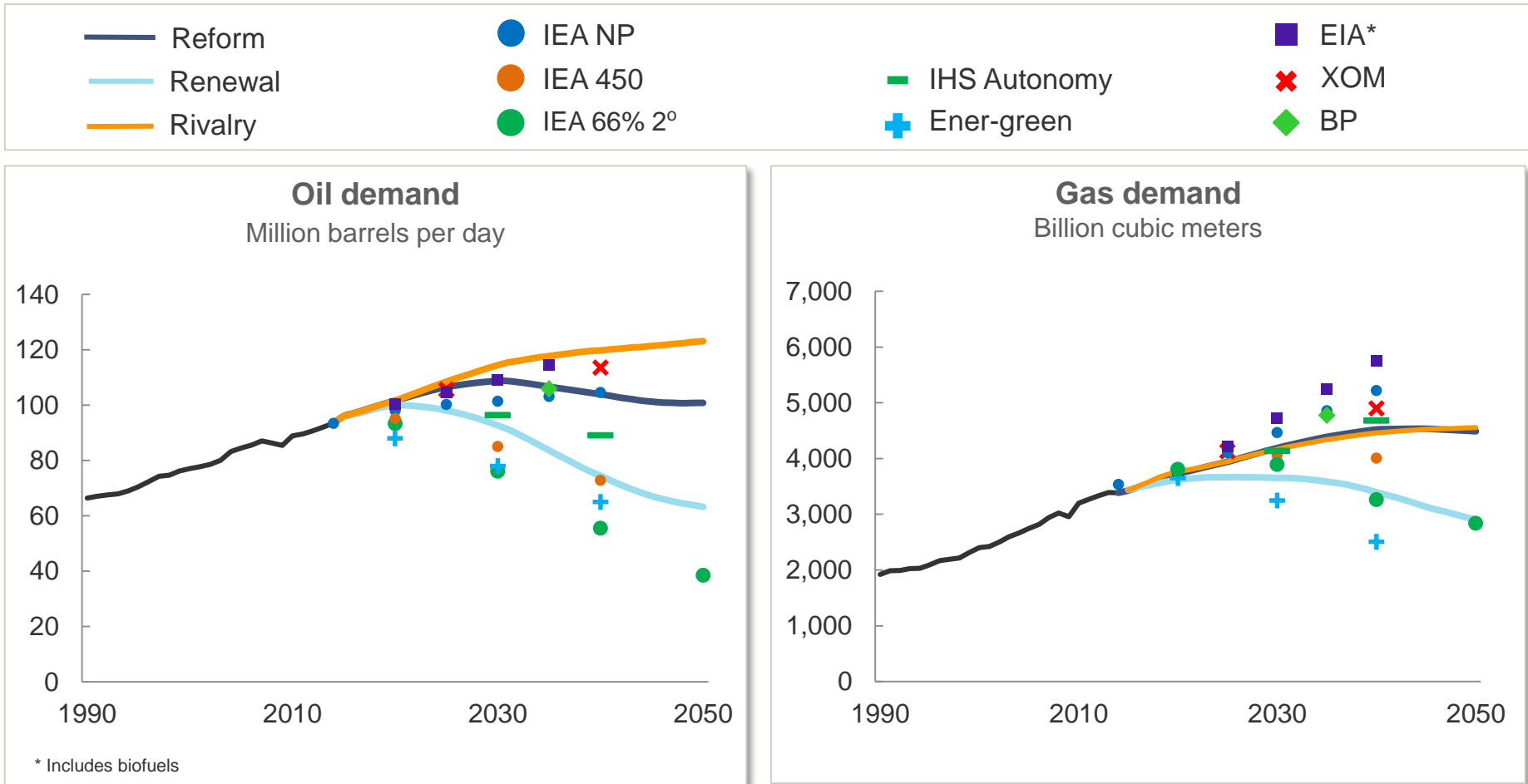


Source: Statoil



Source: Statoil (projections), BP statistical review of world energy (history)

Wide outcome space for oil and gas demand



Source: History (IEA), projections (Statoil EP17, IEA WEO16, EIA AEO16, IHS Energy-Wide Perspectives 2017, XOM 2017 Outlook for Energy, BP EO17, Enerdata 2017 - Understanding our Energy Future)

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