



Statoil

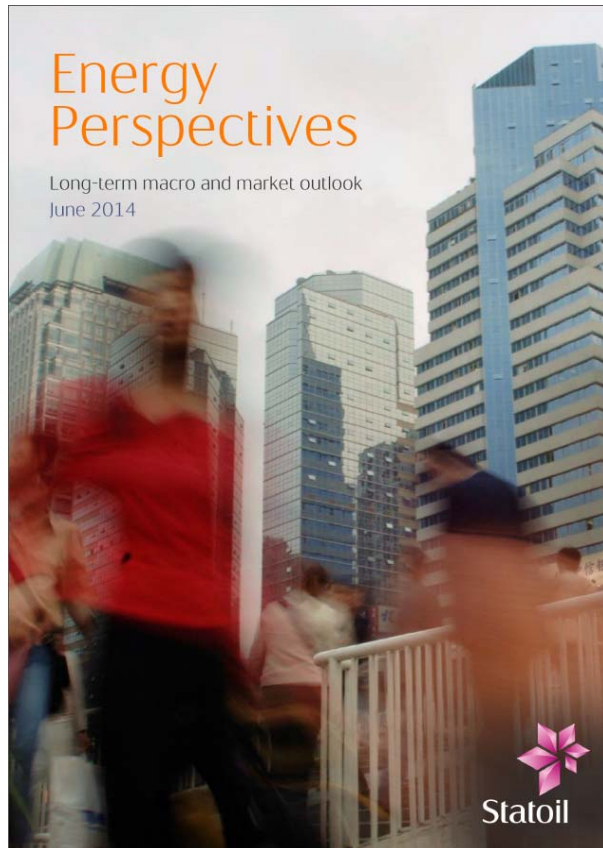
Energy Perspectives 2014

Long-term macro and market outlook

Eirik Wærness, Chief economist

Energy Perspectives 2014

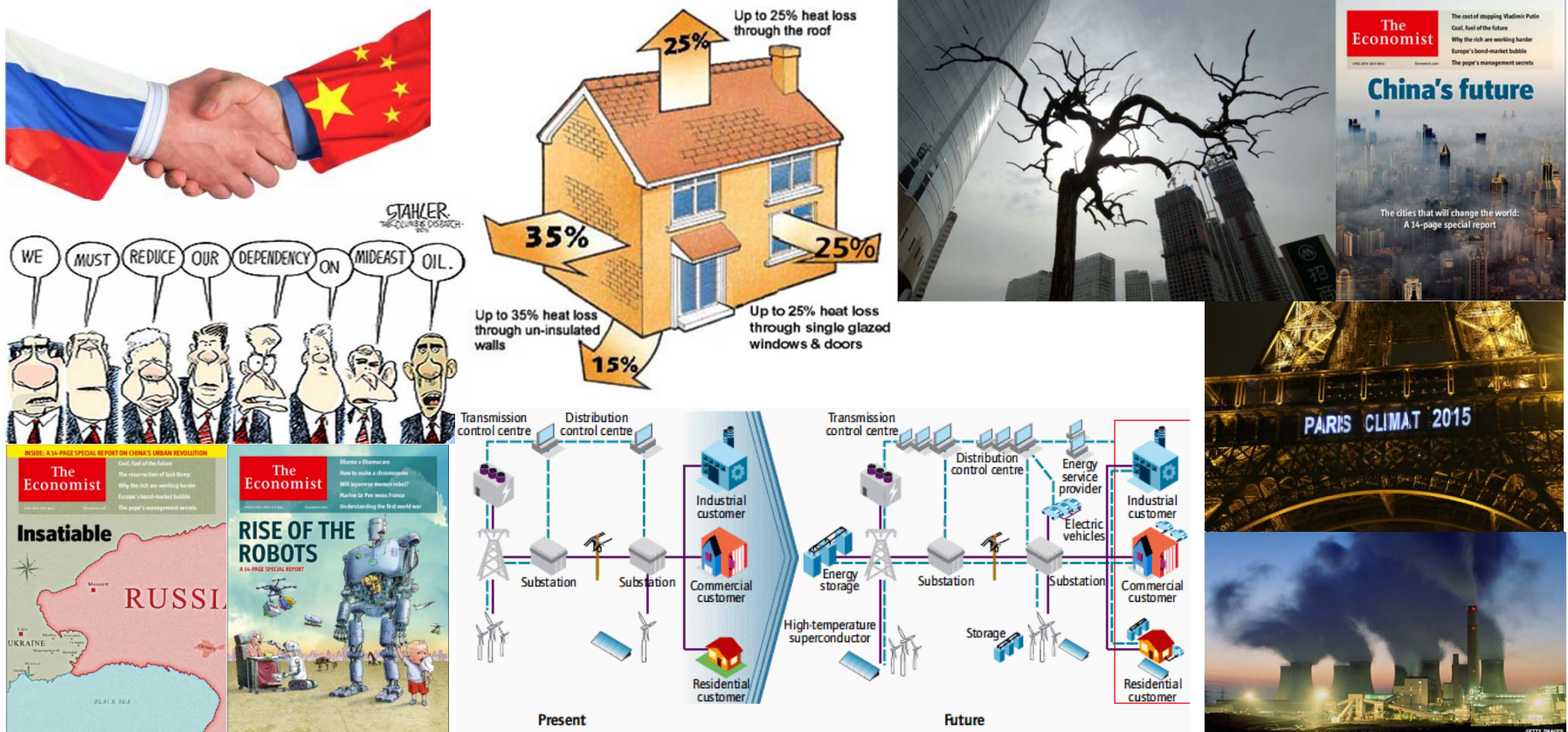
30-year macro and market outlook – www.statoil.com/energyperspectives



- The global economy
 - Growth close to historic average (3%)
 - Two speeds – non-OECD catching up
- Overall energy market outlook
 - 1.3% annual growth (oil 0.6%, coal: 1.1%)
 - Moderate greening of energy mix
- Global oil and gas markets
 - Oil demand peaks around 2030
 - Gas demand increasing (1.4% per year)
- Strong growth in new renewables (8%)
 - ... but CO₂ emissions grow until around 2030...

Long-term forecasts are uncertain

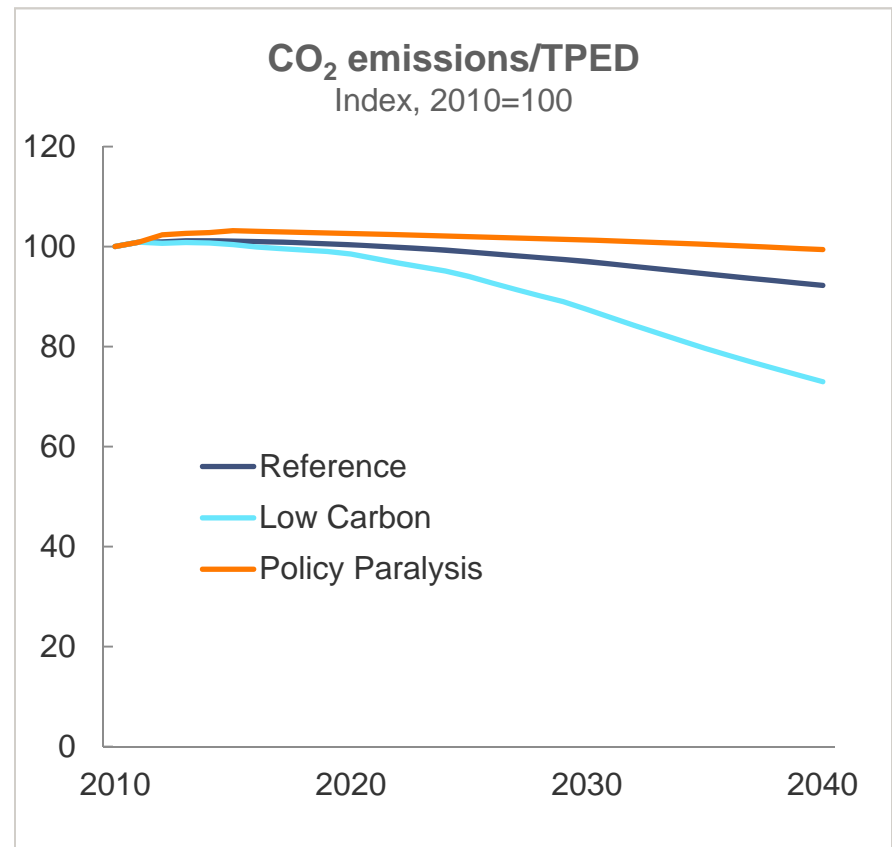
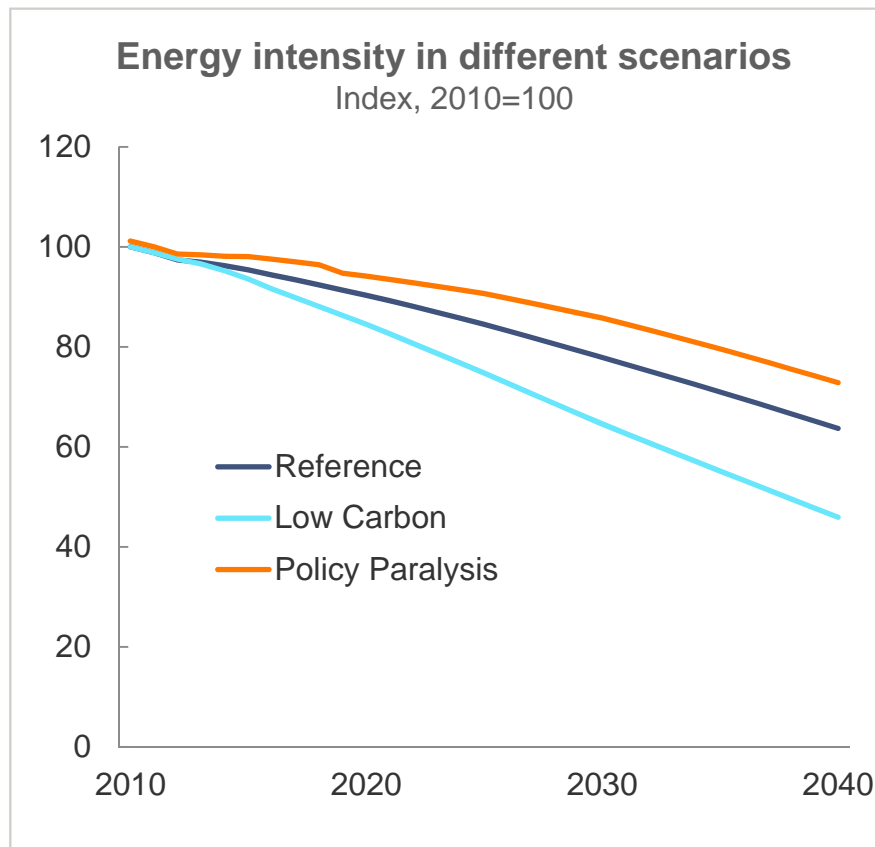
Sustainability, politics and technological progress are drivers of uncertainty



Sources: The Economist, blog.enerdynamics.com, guanming.online, Gettyimages.com, Øyvind Hagen (Statoil), Paris Diplomatie, IEA, Greenenergybricks.com, BBC

There is more than one possible future

Two alternative states of the world have been established

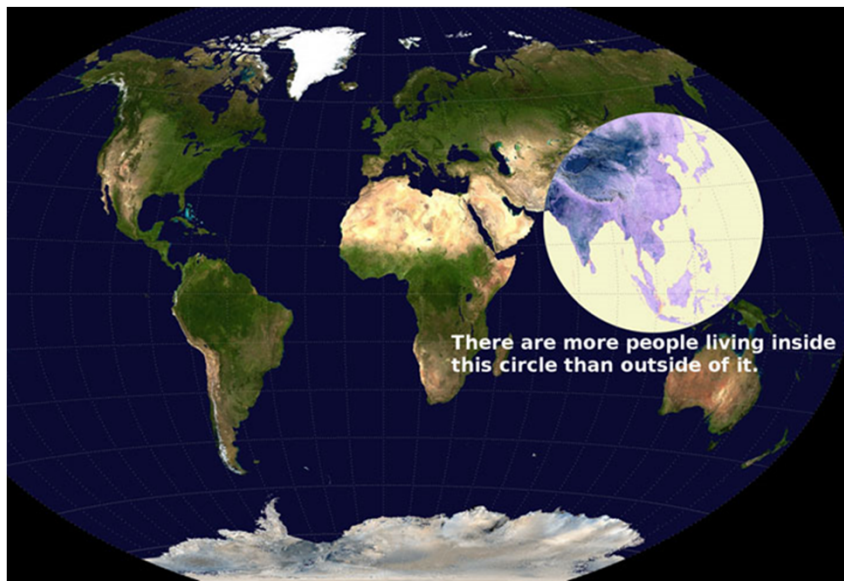


Source: Statoil

A strong trend affecting economics and energy

Economic gravity moves (back) to the east, and so does energy demand

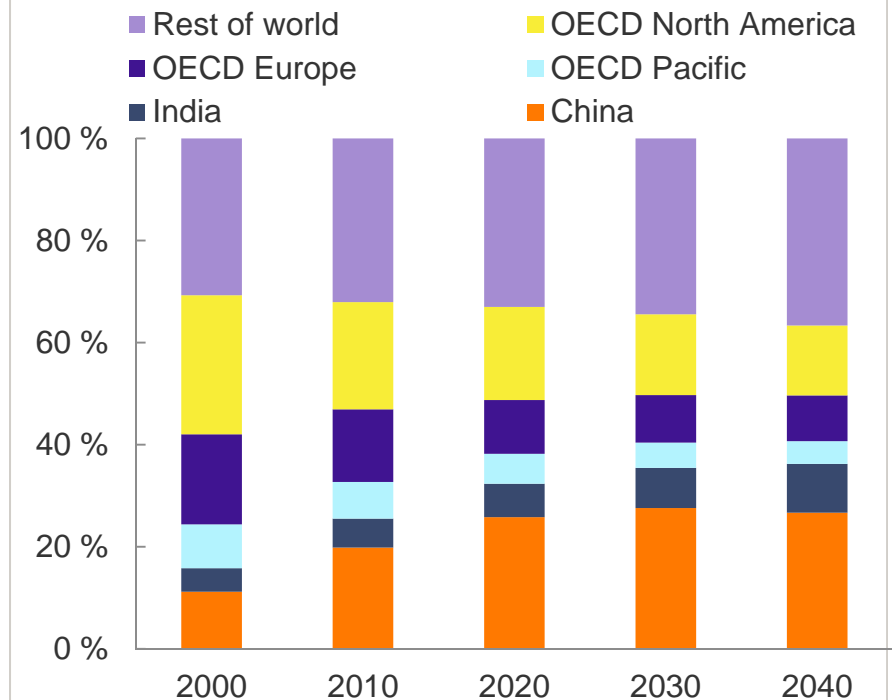
The global centre of population



Source: Reddit, IEA, Statoil (projections)

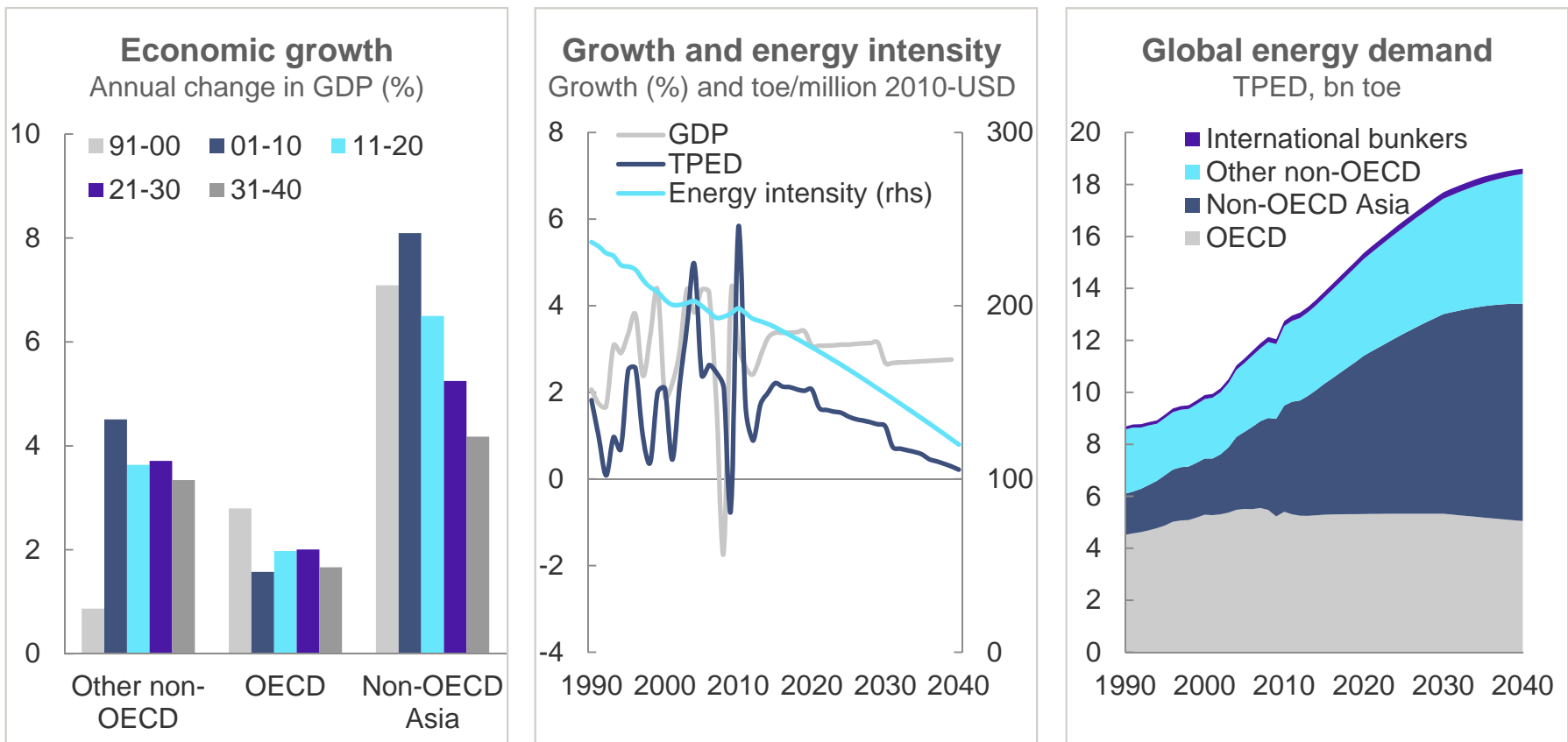
Shifting energy demand

Share of total energy demand (TPED)



Growth, efficiency and energy demand

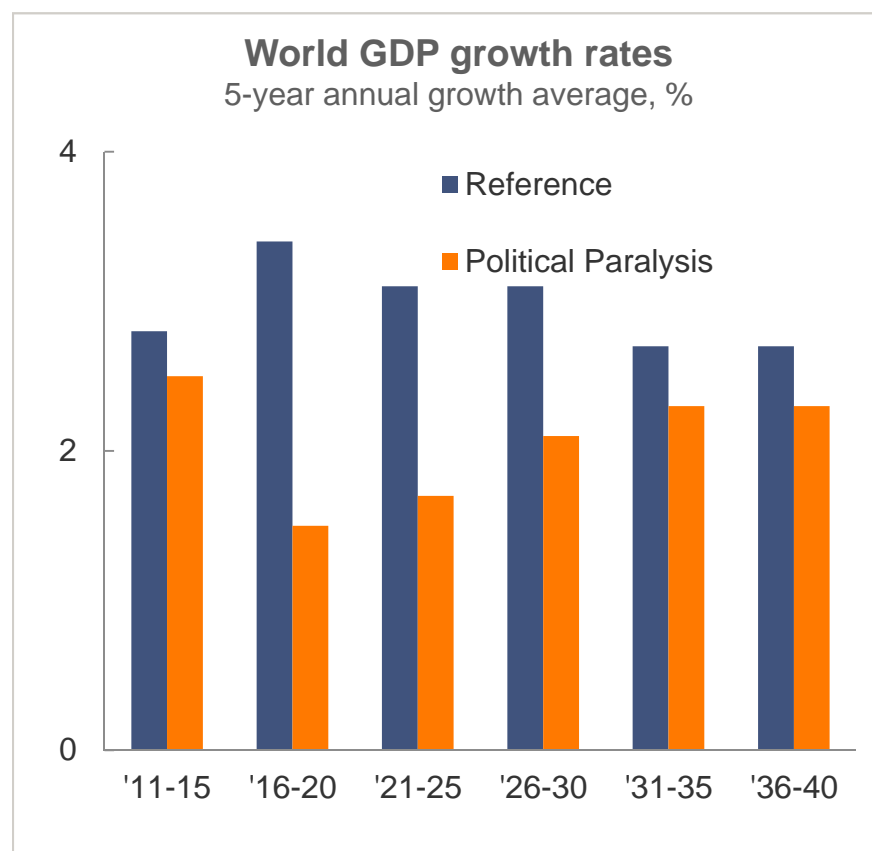
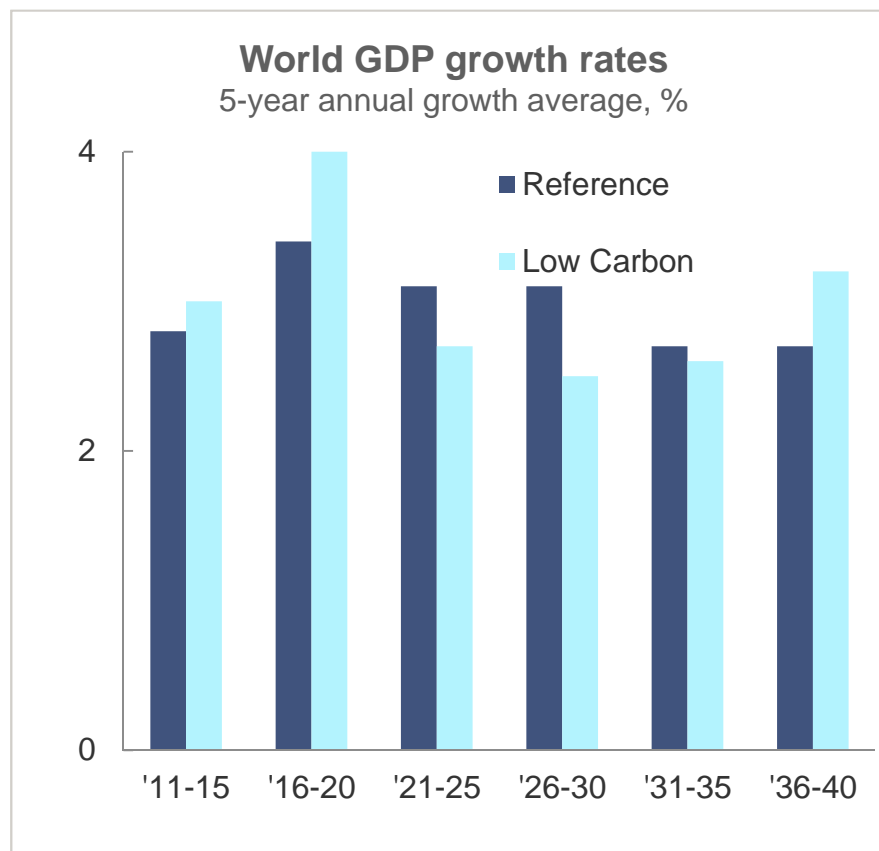
Non-OECD driving growth, energy efficiency to improve by almost 40%



Source: IHS Global Insight and International Energy Agency (history), Statoil (projections)

Growth is a key driver for energy demand...

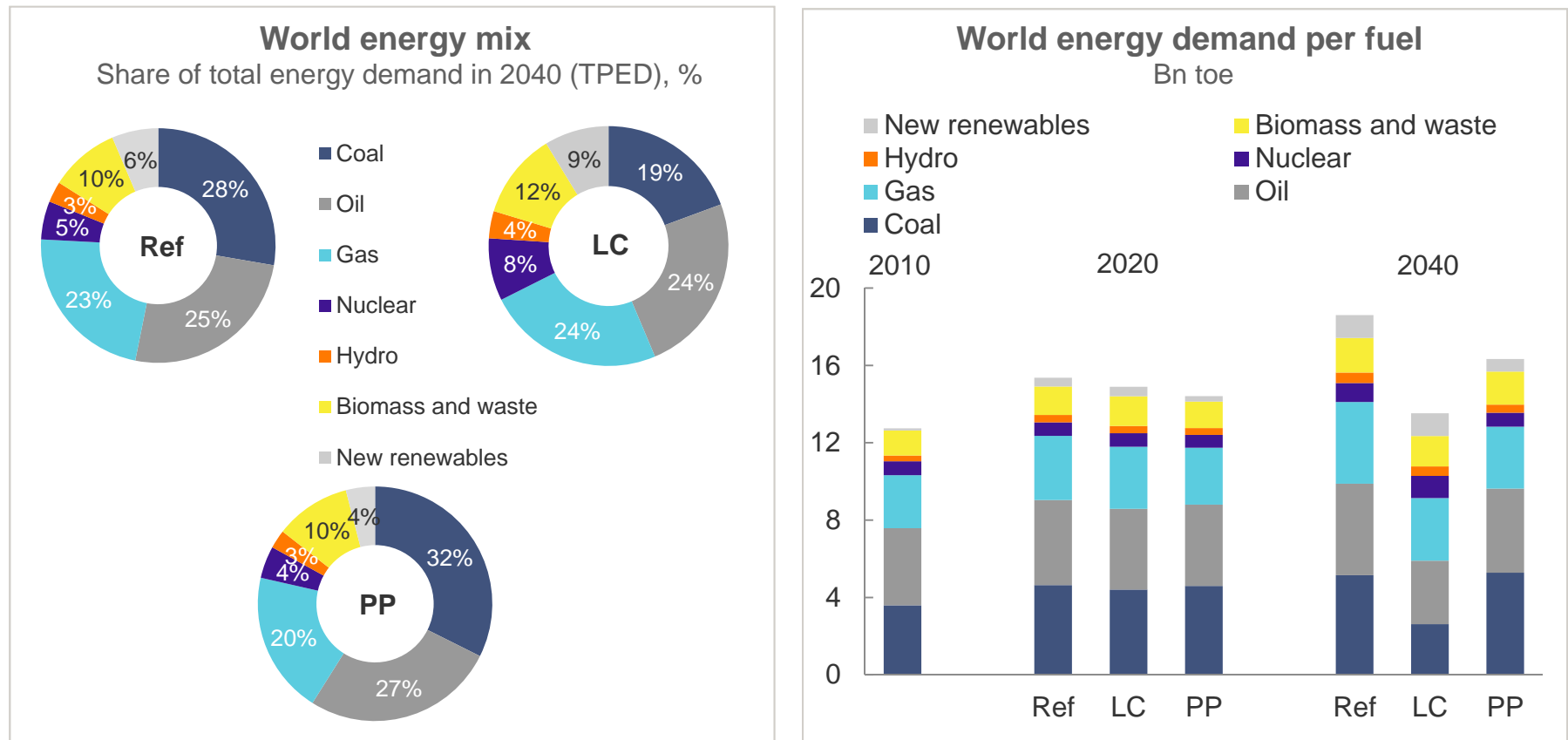
... and is different in alternative scenarios



Source: IEA (history), Statoil (projections)

Energy demand and energy mix differ

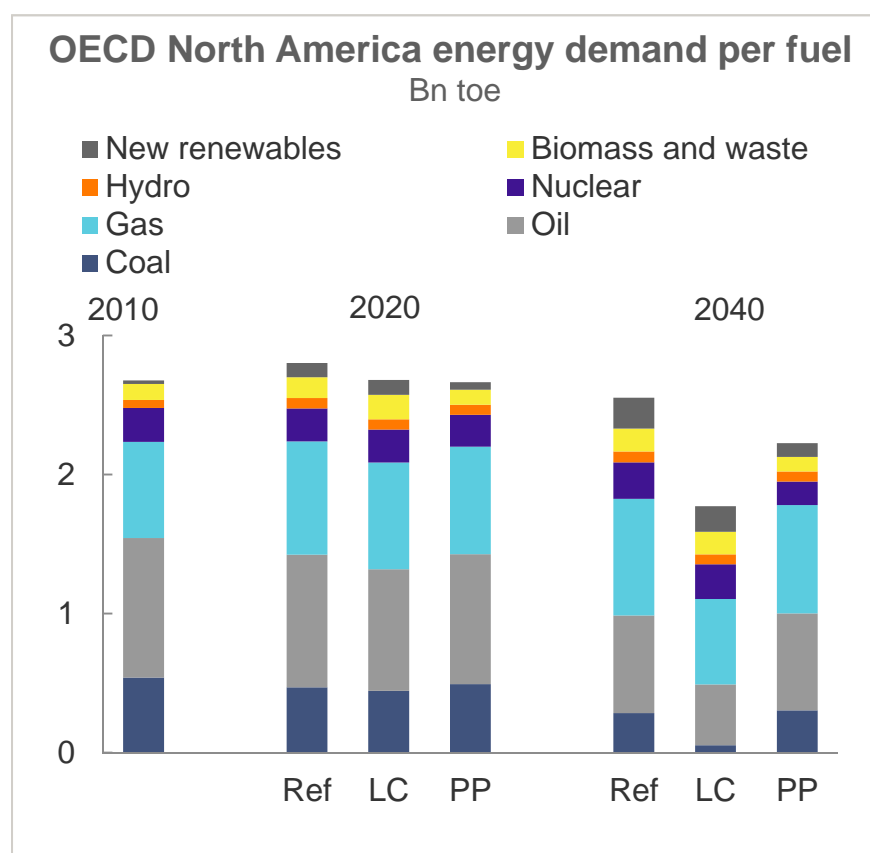
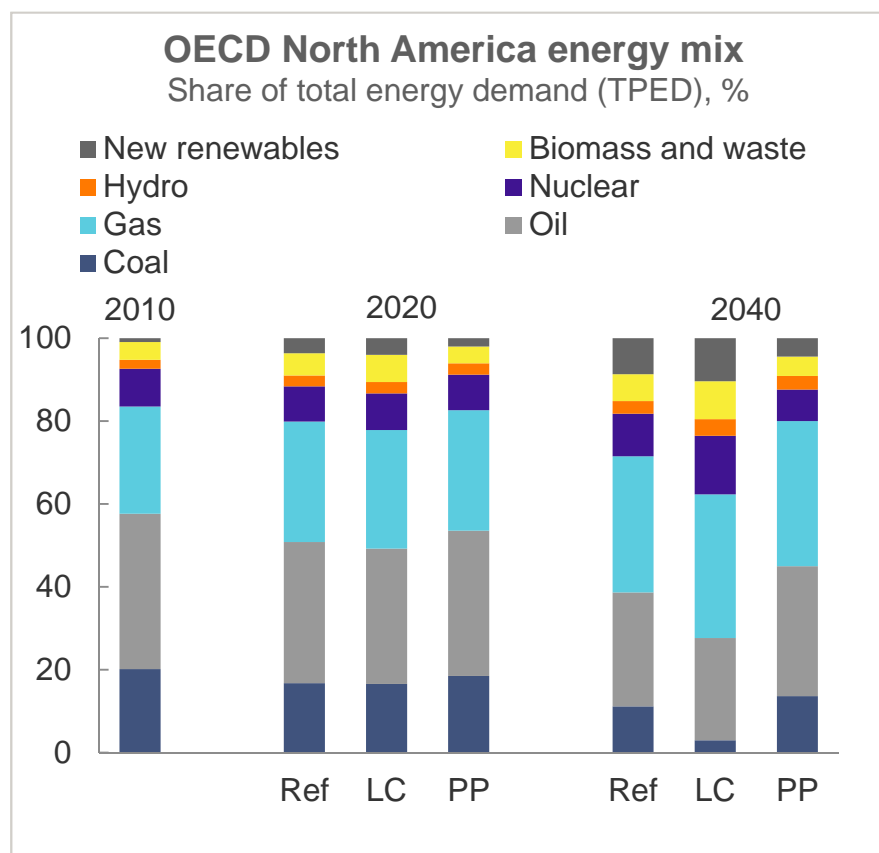
... depending on growth, efficiency, technology and policies



Source: IEA (history), Statoil (projections)

Alternative scenarios

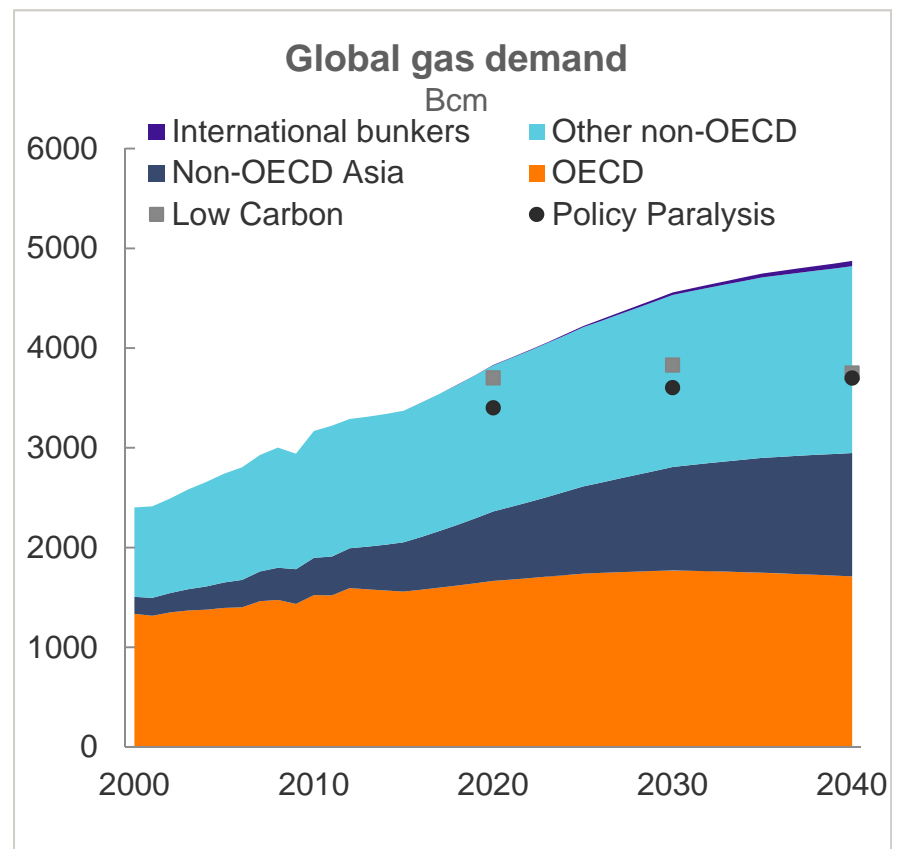
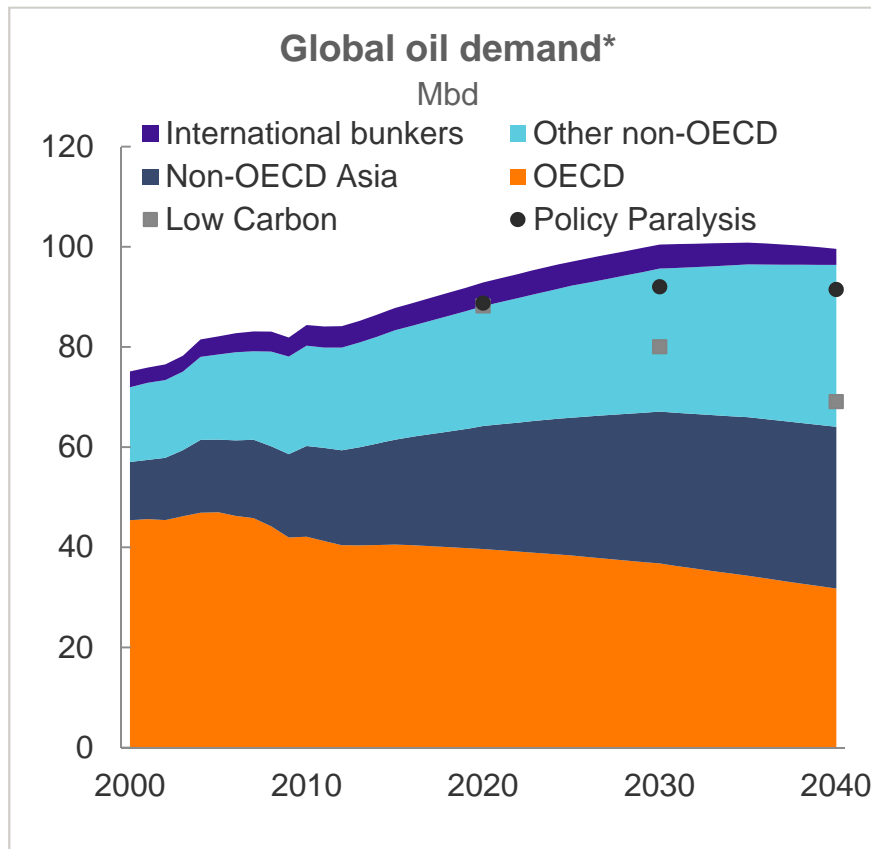
Energy mix and energy demand: OECD North America



Source: IEA (history), Statoil (projections)

Fossil fuels are here to stay

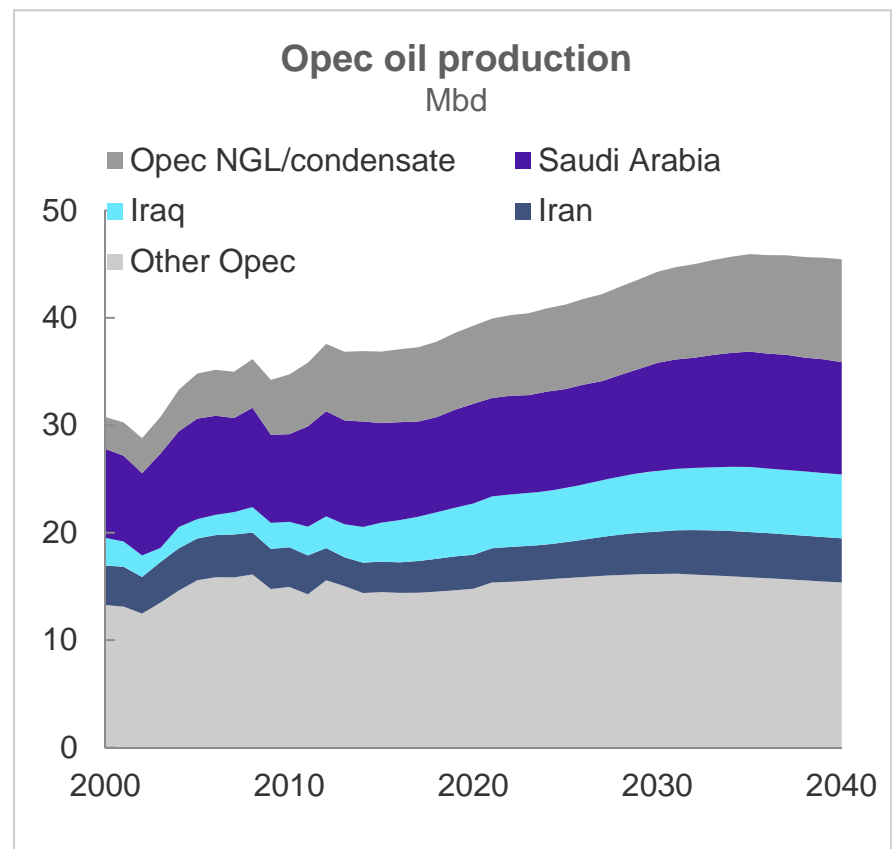
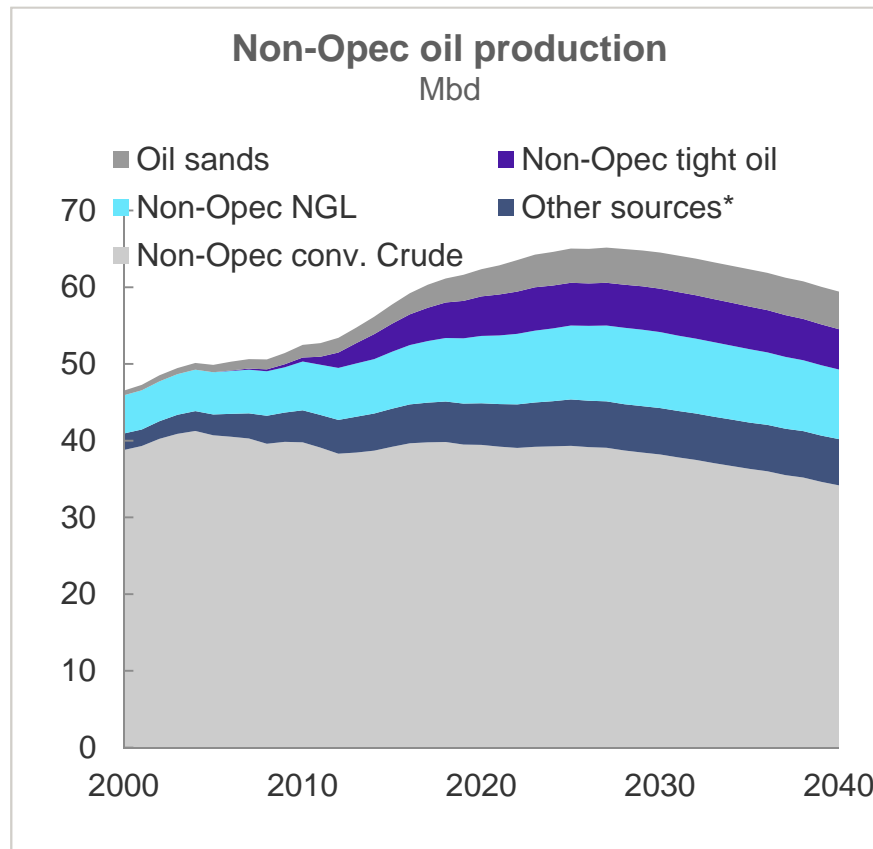
Considerable need for investments, irrespective of scenario



* Excl. Bio-fuels
Source: IEA (history), Statoil (projections)

Global oil supplies in the reference scenario

Non-Opec growing over the medium-term, Opec comeback long term

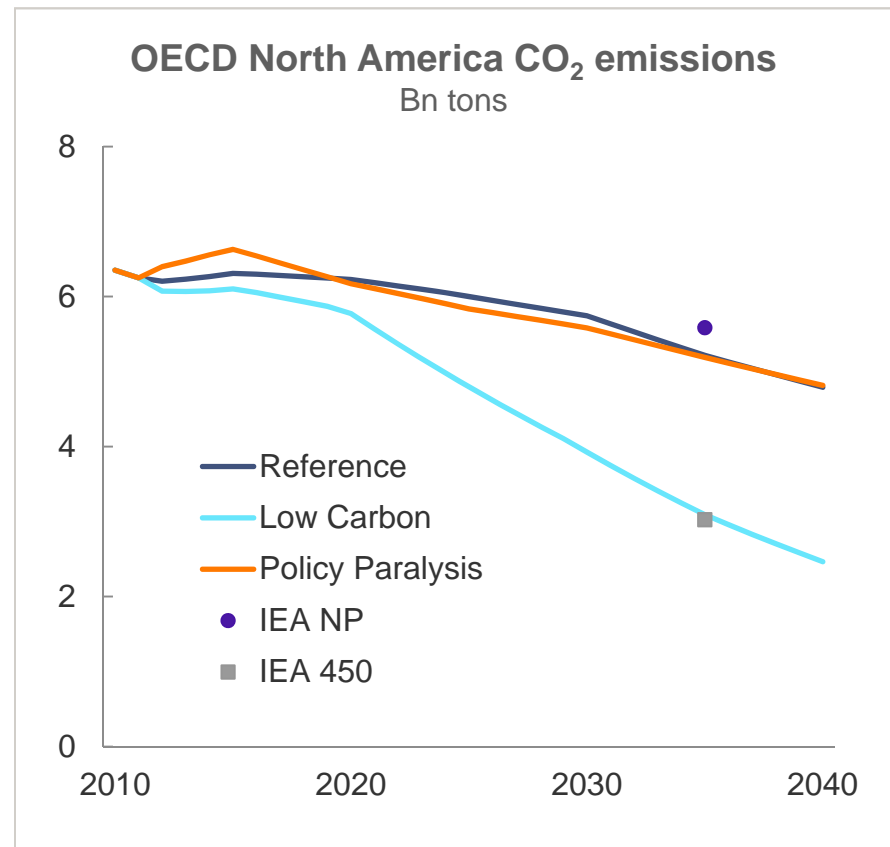
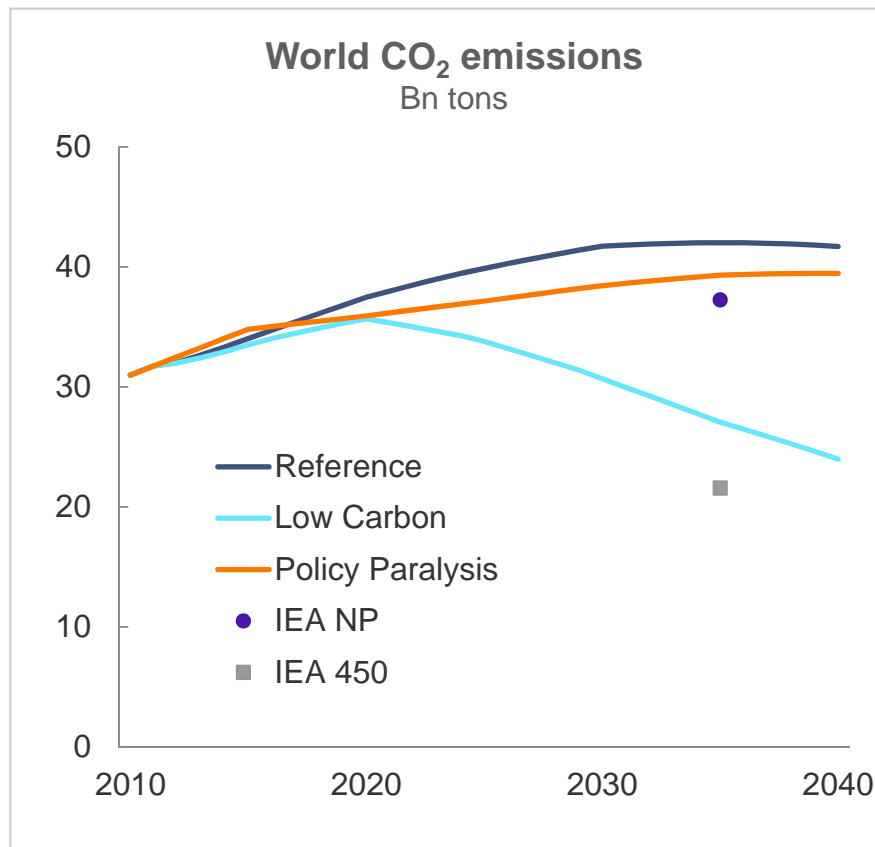


* Bio-fuels, GTL, processing gains

Source: IEA (history), Statoil (projections)

Energy related CO₂ emissions vary considerably

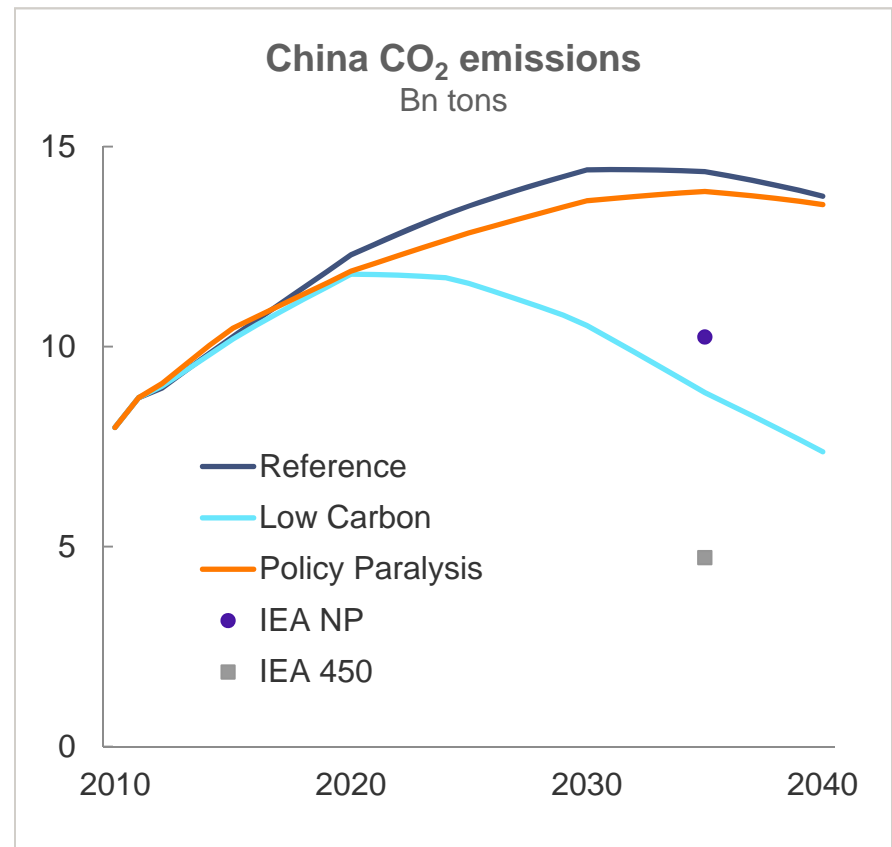
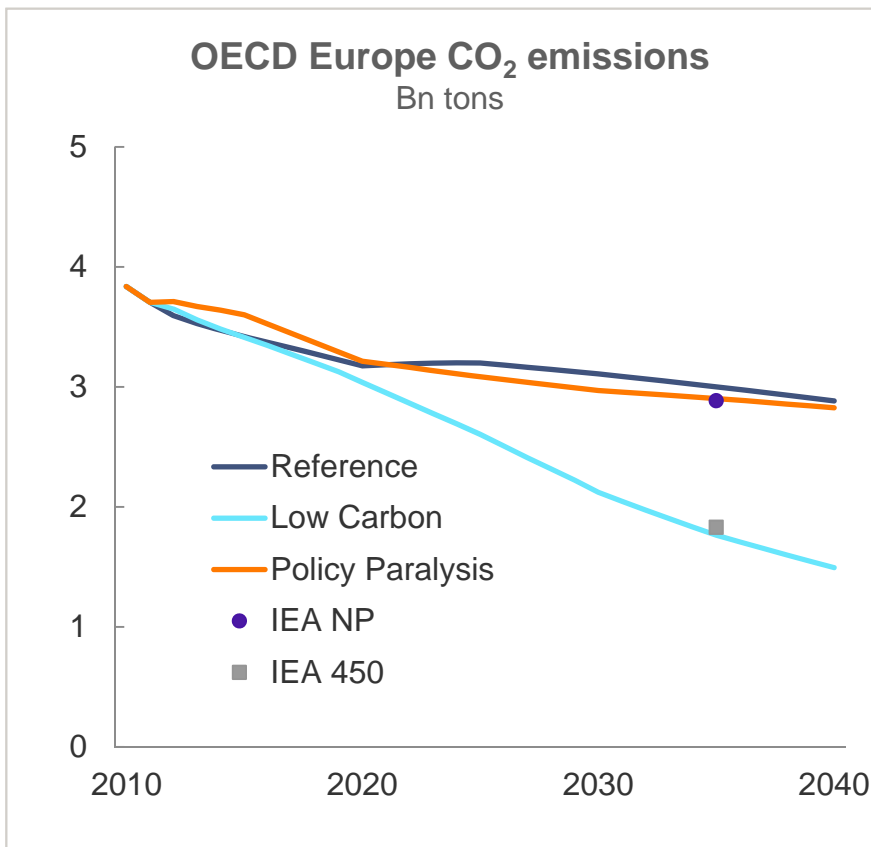
... driven by energy intensity, fuel mix and CCS



Source: Statoil, IEA WEO 2013

Energy related CO₂ emissions, cont.

Development in China and other emerging economies is key



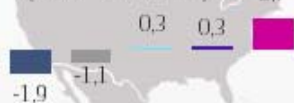
Source: Statoil, IEA WEO 2013

Regional growth in energy demand 2012-2040

CAGR, %

■ Coal ■ Oil ■ Gas ■ Nuclear ■ Renewables

North America
(incl. Mexico)



OECD Europe



Middle East



China



India



Rest of the world



World



There's never been a better
time for good ideas

Thank you!

Key messages

- Globalisation and integration continue
- Divergent growth and catch-up
 - OECD 1.9%, non-OECD 4.5%
 - Long-term moderation in China
- Energy intensity improves by 1.5%
- Energy demand (TPED) grows by 1.3%
- Gradual greening of energy mix
 - New renewables grow by 8%
 - Coal and oil grows by 1.1% and 0.6%, respectively
- Special chapters on different scenarios
- Global oil demand peaks around 2030
 - 0.6% average growth 2011-2040
 - Non-Opec production rising medium term, Opec regaining importance long term
 - Unconventional supply gaining importance
- Global gas demand grows 1.4% on average
 - Share of fuel mix up from 21% to about 23%
 - Demand increasing in several regions
 - LNG gaining importance
 - Unconventional gas supply key uncertainty

What if the world develops differently?

Two alternative states of the world have been established

Deviating assumptions	Low Carbon scenario	Policy Paralysis scenario
Preconditions	Pollution and mounting evidence of global warming	Geopolitical tensions
GDP growth	Higher, lower, higher	Lower
Wholesale oil, gas and coal prices	Lower	Volatile
Climate policies	Radical at all levels	Limited international cooperation
Efficiency improvement	Faster	Slower
Penetration of new renewables in the power sector	Faster, and more nuclear	Slower
Removal of fuel subsidies	Quicker	Slower
CO₂ prices	Higher	Lower in Europe, zero everywhere else
CCS	Takes off	Almost no progress
Other	Faster penetration of electricity, gas and biofuels in the transport sector	Emphasis on energy self-sufficiency favouring coal, in some places gas