Some long-held tenets of the energy sector are being rewritten

- Countries are switching roles: importers are becoming exporters...
- ... and exporters are among the major sources of growing demand
- New supply options reshape ideas about distribution of resources

But long-term solutions to global challenges remain scarce

- Renewed focus on energy efficiency, but CO₂ emissions continue to rise
- Fossil-fuel subsidies increased to $544 billion in 2012
- 1.3 billion people lack electricity, 2.6 billion lack clean cooking facilities

Energy prices add to the pressure on policymakers

- Sustained period of high oil prices without parallel in market history
- Large, persistent regional price differences for gas & electricity
The engine of energy demand growth moves to South Asia

China is the main driver of increasing energy demand in the current decade, but India takes over in the 2020s as the principal source of growth
A mix that is slow to change

Growth in total primary energy demand

Today's share of fossil fuels in the global mix, at 82%, is the same as it was 25 years ago; the strong rise of renewables only reduces this to around 75% in 2035
Non-OECD countries account for a rising share of emissions, although 2035 per capita levels are only half of OECD; the 2 °C ‘carbon budget’ is being spent much too quickly.
China becomes the largest consumer of oil by 2030, as OECD oil use drops; demand is concentrated in transport, where diesel use surges by 5.5 mb/d, & petrochemicals.
More oil bypassing the refining system and new capacity in growing non-OECD markets piles pressure on existing refiners, especially in Europe.
Two chapters to the oil production story

Contributions to global oil production growth

Conventional:
- Middle East
- Brazil
- Rest of the world

Unconventional:
- Light tight oil
- Oil sands, extra-heavy oil, coal/gas-to-liquids, & other

The United States (light tight oil) & Brazil (deepwater) step up until the mid-2020s, but the Middle East is critical to the longer-term oil outlook.
Complex deepwater projects see Brazil joining the top ranks of global oil producers, while the domestic power mix remains one of the least carbon-intensive in the world.
Capacity to change?

Power generation capacity additions and retirements, 2013-2035

China & India together build almost 40% of the world’s new capacity; 60% of capacity additions in the OECD replace retired plants
The expansion of non-hydro renewables depends on subsidies that more than double to 2035; additions of wind & solar have implications for power market design & costs.
Regional differences in natural gas prices narrow from today’s very high levels but remain large through to 2035; electricity price differentials also persist.
An energy boost to the economy?

Share of global export market for energy-intensive goods

The US, together with key emerging economies, increases its export market share for energy-intensive goods, while the EU and Japan see a sharp decline.
Indicative economics of LNG export from the US Gulf Coast (at current prices)

<table>
<thead>
<tr>
<th></th>
<th>To Asia</th>
<th>To Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average import price</td>
<td>3 6 9 12 15 18</td>
<td>3 6 9 12</td>
</tr>
<tr>
<td>Liquefaction, shipping &amp; regasification</td>
<td>3 6 9 12 15 18</td>
<td>3 6 9 12</td>
</tr>
<tr>
<td>United States price</td>
<td>3 6 9 12 15 18</td>
<td>3 6 9 12</td>
</tr>
</tbody>
</table>

New LNG supplies accelerate movement towards a more interconnected global market, but high costs of transport between regions mean no single global gas price
Orientation for a fast-changing energy world

- China, then India, drive the growing dominance of Asia in global energy demand & trade

- Technology is opening up new oil resources, but the Middle East remains central to the longer-term outlook

- Regional price gaps & concerns over competitiveness are here to stay, but there are ways to react – with efficiency first in line

- The transition to a more efficient, low-carbon energy sector is more difficult in tough economic times, but no less urgent