Energy Futures & Future Players
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Uncertainty

**Slowing growth**

GDP Growth Rates
(real annual percentage change)

- China 2007
- Asia-Pac 2007
- Euro zone 2007
- Japan 2007
- US 2007
- World 2007

Source: Accenture P&CA Analysis

**Volatile commodity prices**

Oil & Food prices
(Indexed, August 2000 = 100)

- Crude Oil
- Food

Source: EIU, Accenture P&CA Analysis

**Tighter credit**

Cost of borrowing in wholesale money markets
(Basis point spread of 1-week LIBOR against BoE)

Source: Bank of England, Accenture P&CA Analysis
Oil price halves in 4 months

Crude oil price plummets:
Oil price has halved in 4 months

Weekly US spot crude price*
(US$/bbl)

Record oil price **US$147/bbl** in July 2007

*Weekly US spot price FOB weighted by Estimated Import Volume
Source: Energy Information Administration, Accenture Analysis
The fundamental long-term drivers remain the same

<table>
<thead>
<tr>
<th>Key Drivers</th>
<th>Upstream</th>
<th>Midstream &amp; Downstream</th>
<th>Renewables</th>
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<tbody>
<tr>
<td>Demand continues to rise particularly from developing countries</td>
<td>• Demand shifting increasingly to emerging economies</td>
<td>• Growing policy support and consumer demand for action on climate change and switching energy source</td>
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<td>Era of easy-oil is over, fields are increasingly more complex or difficult to access</td>
<td>• Crude feedstock becoming heavier. Demand for light, medium and more complex petrochemical products increasing</td>
<td>• Stricter government targets on carbon emissions</td>
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<tr>
<td>A structural, upward cost shift and more areas open up and are economically feasible</td>
<td>• Downstream has been squeezed in 2008 by high oil prices, though this will ease given a low</td>
<td>• 1st generation biofuels are set to play a much larger role in meeting world road-transport fuel demand</td>
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<td>Players battle to strengthen position</td>
<td>• Current underinvestment in new refineries is likely to result in capacity constraints as demand outstrips supply between 2010-2015</td>
<td>• Increasing importance of green business credentials and reduction of carbon footprint</td>
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<td>Increasing role of gas</td>
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<th>Cross Segment Drivers</th>
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<td>Increasing M&amp;A and alliances</td>
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<td>• Technologies to convert heavy oil to lighter oil in great demand</td>
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<td>Internationalisation of NOCs and resource nationalism</td>
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<td>• Increasing skills shortage</td>
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Oil, coal and gas dominate in 2030, but renewables are the fastest growing, and coal gains the biggest increase in share of energy mix.

Source: CERA, Accenture analysis
* Includes all renewables (Hydro, Biomass & Waste and Other)
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Asia drives 50% of demand growth to 2030, the Middle East will dominate supply, but in the short term, demand dampens and supply is restricted.
Impact on players - the short run

Impact of the credit crunch

- Supermajors largely unaffected from a cash perspective
- M&A activity likely to increase
- Independents, Mid Caps and Oil Services first to feel the pinch
- Unconventionals at risk, renewables temporarily marginalised
- Refining future remains uncertain
- Lower capex budgets, and large projects on hold

*Current value likely to be larger given the continued fall in equity value
Source: Bloomberg, Capital Markets Report, Accenture Analysis
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## Impact on players – the longer run

**Oil production (mboe/d)**

<table>
<thead>
<tr>
<th>Company</th>
<th>Production</th>
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<tbody>
<tr>
<td>Saudi Aramco</td>
<td>11,035</td>
</tr>
<tr>
<td>NIOC</td>
<td>4,049</td>
</tr>
<tr>
<td>PDVSA</td>
<td>2,650</td>
</tr>
<tr>
<td>CNPC</td>
<td>2,270</td>
</tr>
<tr>
<td>Petrobras</td>
<td>1,847</td>
</tr>
<tr>
<td>Gazprom</td>
<td>811</td>
</tr>
<tr>
<td>Petronas</td>
<td>715</td>
</tr>
<tr>
<td>BP</td>
<td>2,562</td>
</tr>
<tr>
<td>Exxon</td>
<td>2,523</td>
</tr>
<tr>
<td>Shell</td>
<td>2,093</td>
</tr>
<tr>
<td>Chevron</td>
<td>1,701</td>
</tr>
</tbody>
</table>

* *After mergers*  
Source: Financial Times, March 12, 2007

- Major inflexion point in the distribution of power between NOC’s, IOC’s and oil service companies
  - NOC’s are internationalising
  - NOC deal activity is increasing, particularly with each other
  - NOC’s benefit from strong balance sheets and use of sovereign funds
  - NOC’s are better now at leveraging governmental relationships
  - Oil service companies have invested heavily in their capabilities and trying to position themselves as partners to NOC’s

- But, the primary energy demand curve, required investment and needs capabilities means that no group can go it alone
Success in the long run

What will be the recipe for success?

- Robust balance sheets
- Taking advantage of market dynamics e.g. low asset prices

- NOCs and IOC partnerships
- Exploit a new wave of M&A
- IOCs that develop differentiated value propositions

- Attract and retain the best talent

- Invest heavily in efficient technology in the short term such as refining efficiency, and enhanced oil recovery

- Build economically viable renewable projects
- Secure government subsidies in alternative energy
- Reputation for security of supply