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ENERGY FORUM  
JAMES A. BAKER III  
INSTITUTE FOR  
PUBLIC POLICY  
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## **Energy Futures and Future Players**

Claire Lawrie

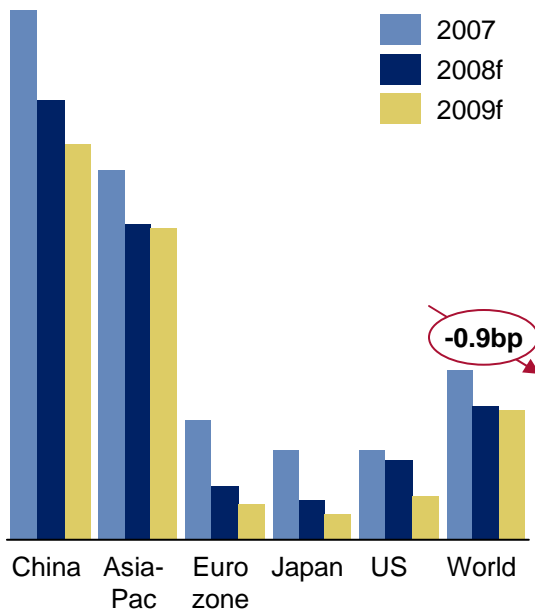
Partner, Accenture Energy Practice

October 27, 2008

# Uncertainty

## Slowing growth

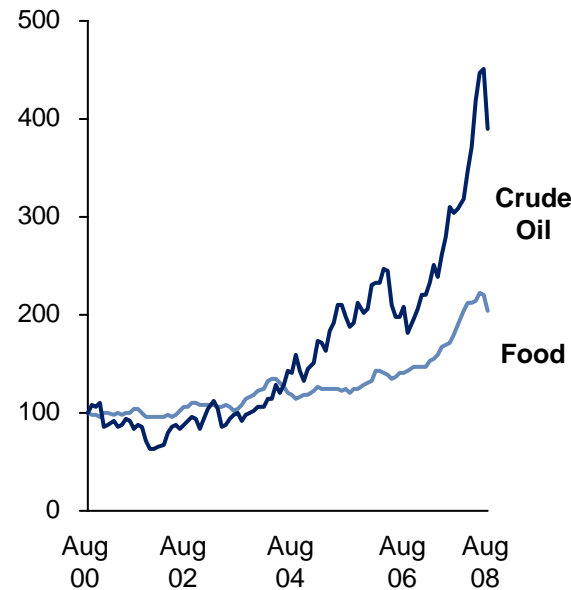
**GDP growth rates**  
(real annual percentage change)



Source: Accenture P&CA Analysis  
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## Volatile commodity prices

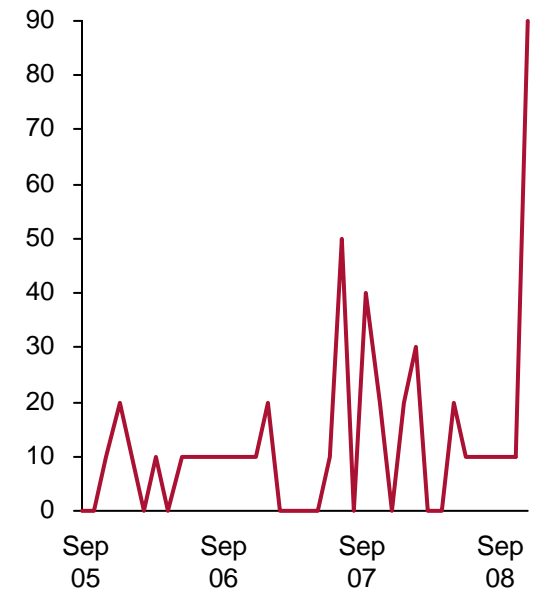
**Oil and food prices**  
(Indexed, August 2000 = 100)



Source: EIU, Accenture P&CA Analysis

## Tighter credit

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



Source: Bank of England, Accenture P&CA Analysis

# Oil price halves in four months

## Crude oil price plummets: Oil price has halved in four months

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



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

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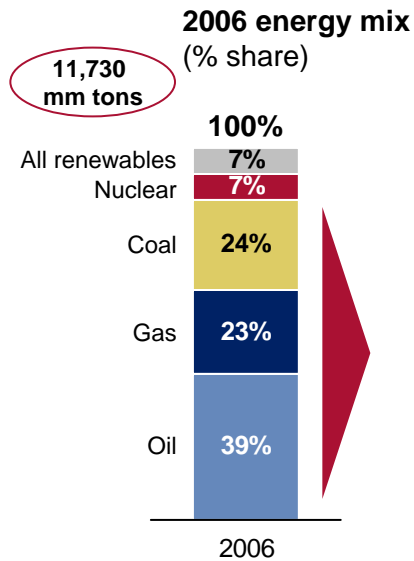
	Upstream	Midstream and downstream	Renewables
<b>Key drivers</b>	<ul style="list-style-type: none"> <li>• Demand continues to rise particularly from developing countries</li> <li>• Era of easy-oil is over, fields are increasingly more complex or difficult to access</li> <li>• A structural, upward cost shift and more areas open up and are economically feasible</li> <li>• Players battle to strengthen position</li> <li>• Increasing role of gas</li> </ul>	<ul style="list-style-type: none"> <li>• Demand shifting increasingly to emerging economies</li> <li>• Crude feedstock becoming heavier. Demand for light, medium and more complex petrochemical products increasing</li> <li>• Downstream has been squeezed in 2008 by high oil prices, though this will ease given a low</li> <li>• Current underinvestment in new refineries is likely to result in capacity constraints as demand outstrips supply between 2010-2015</li> </ul>	<ul style="list-style-type: none"> <li>• Growing policy support and consumer demand for action on climate change and switching energy source</li> <li>• Stricter government targets on carbon emissions</li> <li>• 1st generation biofuels are set to play a much larger role in meeting world road-transport fuel demand</li> <li>• Increasing importance of green business credentials and reduction of carbon footprint</li> </ul>
<b>Cross segment drivers</b>	<ul style="list-style-type: none"> <li>• Increasing M&amp;A and alliances</li> <li>• Internationalisation of NOCs and resource nationalism</li> </ul>	<ul style="list-style-type: none"> <li>• Technologies to convert heavy oil to lighter oil in great demand</li> <li>• Increasing skills shortage</li> </ul>	

# Oil, coal and gas dominate in 2030, but renewables are the fastest growing, and coal gains the biggest increase in share of energy mix

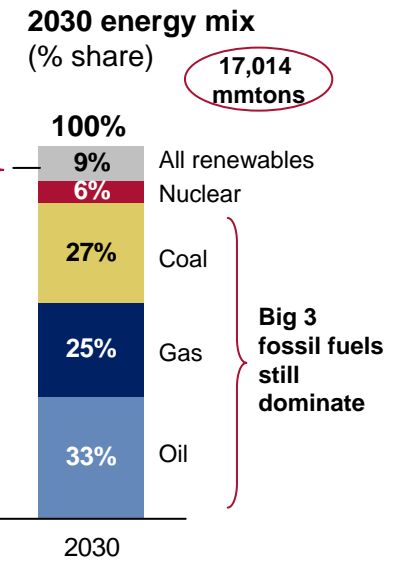
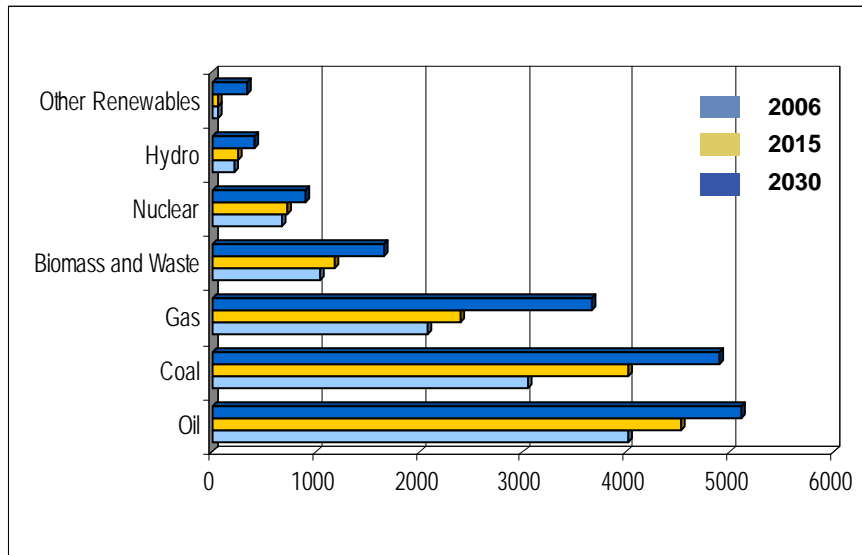
## Growth by energy type

Cumulative growth 2006-30	% annual growth
Other renewables	+ 7.2%
Coal	+ 2.0%
Hydro	+ 1.9%
Gas	+ 1.8%
Biomass and Waste	+ 1.4%
Nuclear	+ 0.9%
Oil	+ 1.0%

Fastest growing, but absolute value remains small



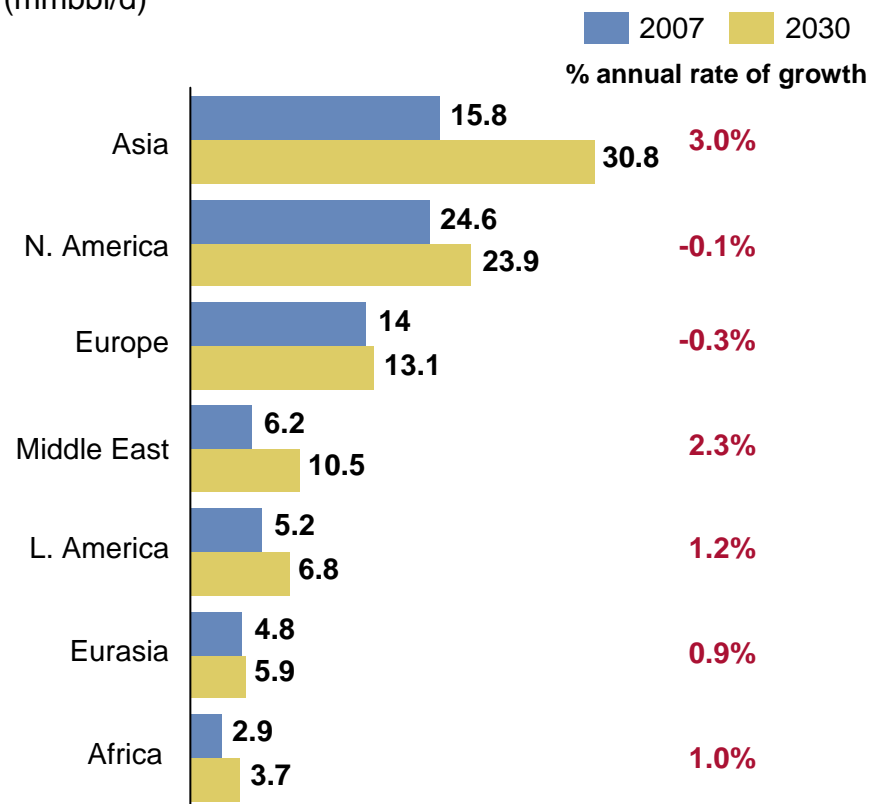
Projected primary energy demand 2006 – 2030 (Million toe)



# Asia drives 50 percent of demand growth to 2030, the Middle East will dominate supply, but in the short term, demand dampens and supply is restricted

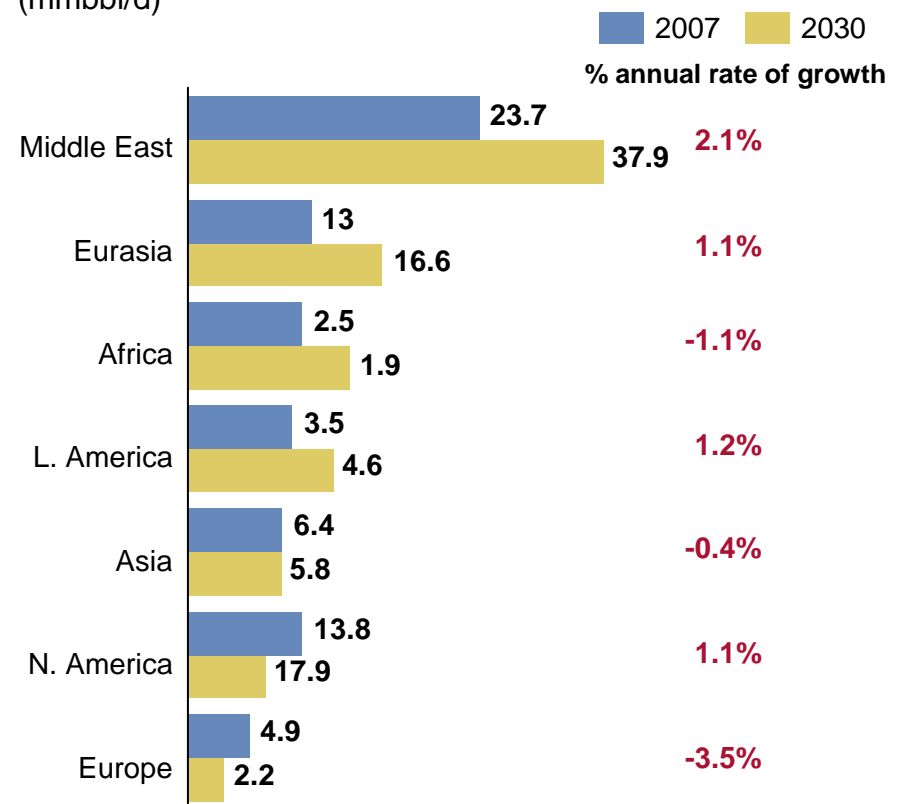
## Demand side

Projected oil demand, by region (mmbbl/d)



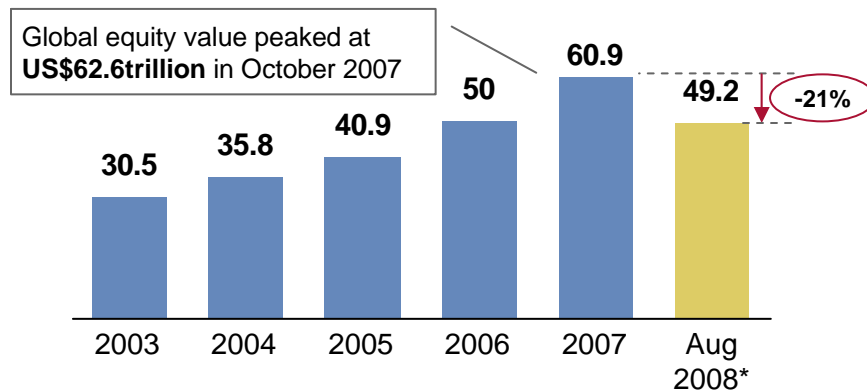
## Supply side

Projected oil supply growth, by region (mmbbl/d)

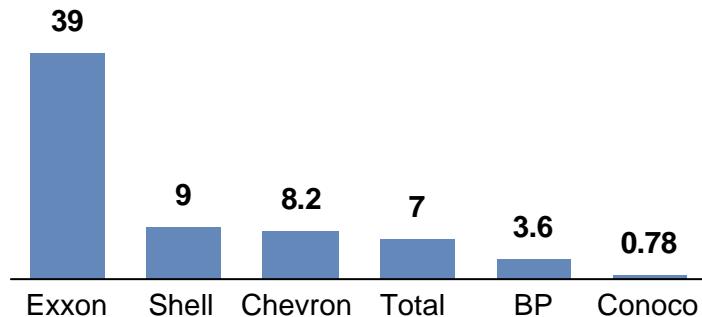


# Impact on players – the short run

## Global equity market capitalisation (US\$trillion)



## Supermajor “cash pile” (US\$billion at June 2008)



\*Current value likely to be larger given the continued fall in equity value  
Source: Bloomberg, Capital Markets Report, Accenture Analysis  
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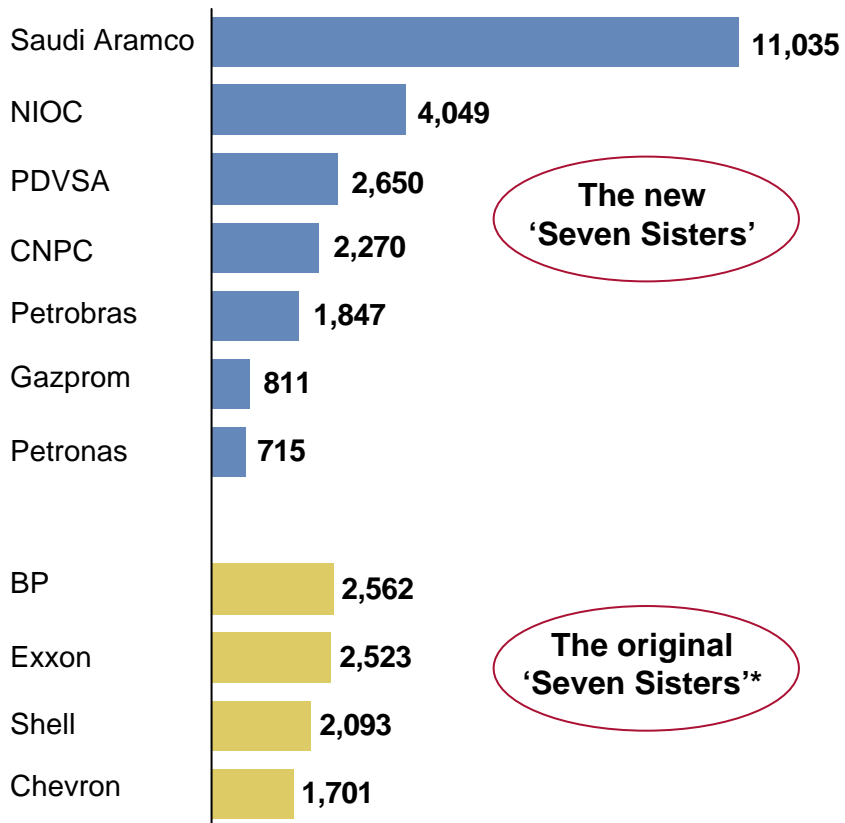
## Impact of the credit crunch

- 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

# Impact on players – the longer run

## Oil production

(mboe/d)



\*After mergers

Source: Financial Times, March 12, 2007

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- Major inflexion point in the distribution of power between NOCs, IOCs and oil service companies
  - NOCs are internationalising
  - NOC deal activity is increasing, particularly with each other
  - NOCs benefit from strong balance sheets and use of sovereign funds
  - NOCs are better now at leveraging governmental relationships
  - Oil service companies have invested heavily in their capabilities and trying to position themselves as partners to NOCs
- But, the primary energy demand curve, required investment and needs capabilities means that no group can do it alone

# Success in the long run

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## Key trends

Return to market fundamentals

Relationships

Capability

Technology

Diversification

## 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