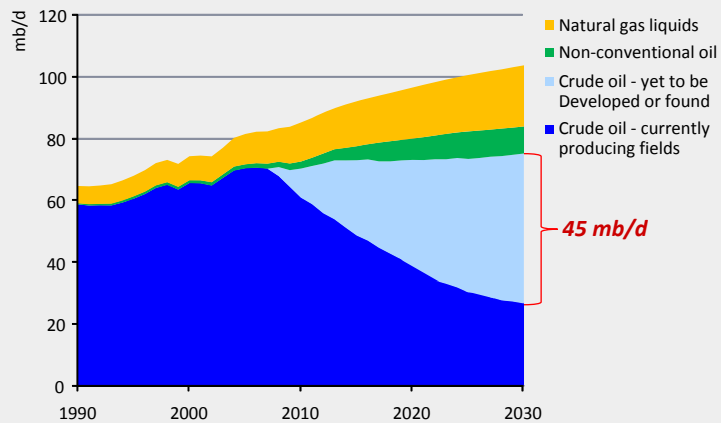


# The Impact of the Financial and Economic Crisis on Global Energy Investments

## World oil production by source in the Reference Scenario

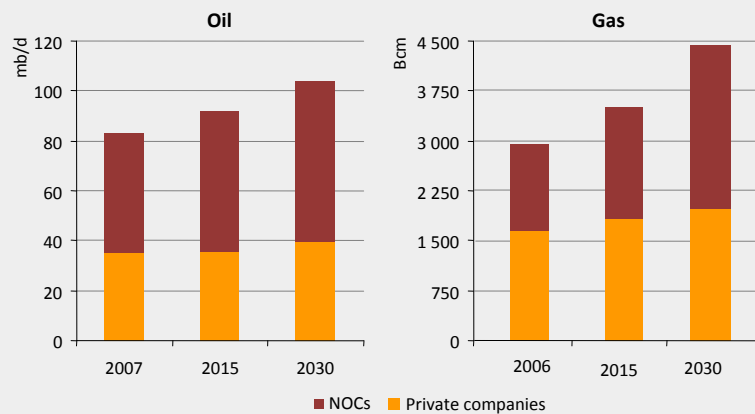
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*Even if oil demand was to remain flat to 2030, 45 mb/d of gross capacity – roughly four times the capacity of Saudi Arabia – would be needed just to offset decline from existing fields.*

## A sea change: world oil & gas production by company type in the Reference Scenario

Office of the Chief Economist

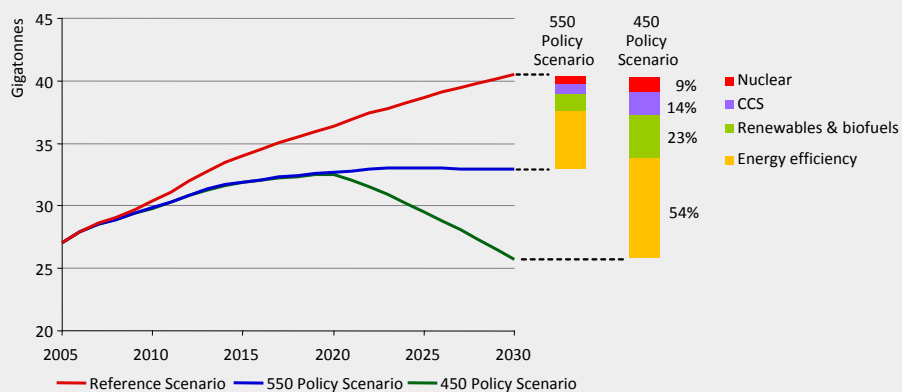


*Almost 80% of the projected increase in output of both oil & gas comes from national companies – on the assumption that investment is forthcoming*

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## Reductions in energy-related CO<sub>2</sub> emissions in the climate-policy scenarios

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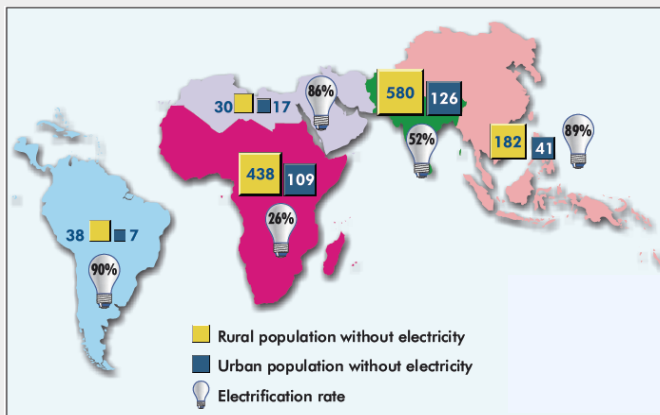


*While technological progress is needed to achieve some emissions reductions, efficiency gains and deployment of existing low-carbon energy account for most of the savings*

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## Population without electricity

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*Today 1.6 billion people have no access to electricity and in 2030, if no major new policies are implemented, there will still be 1.4 billion people without electricity.*

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INTERNATIONAL ENERGY AGENCY 

## Impact of the financial and economic crisis on energy investment

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## How is the financial & economic crisis affecting energy investment?

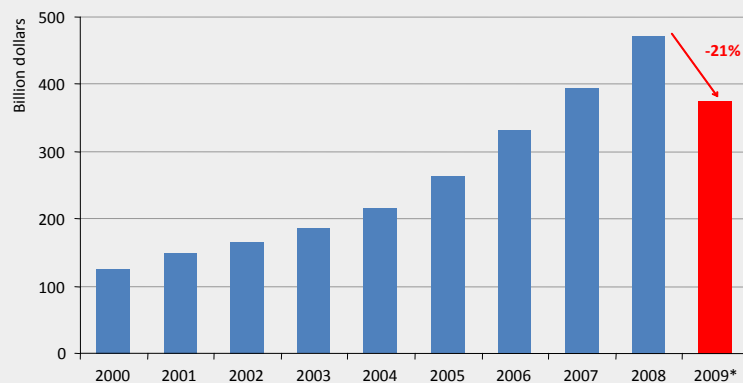
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- Difficulties in obtaining credit & higher cost of capital
  - > *Increased aversion to risk*
  - > *Paralysed credit markets*
  - > *Plunging share values have increased debt-equity ratios*
- Lower prices & cash flows have made new investments less attractive
- Falling demand caused by economic recession has reduced urgency & appetite for suppliers to invest

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## Worldwide oil & gas upstream capital expenditures

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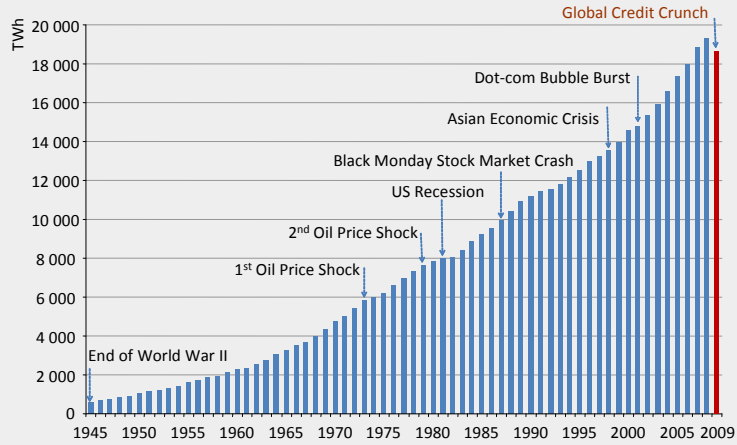


*Budgeted spending on exploration & production worldwide for 2009 currently totals \$375 billion, down about \$100 billion – or 21% – on 2008*

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## Historical global electricity consumption

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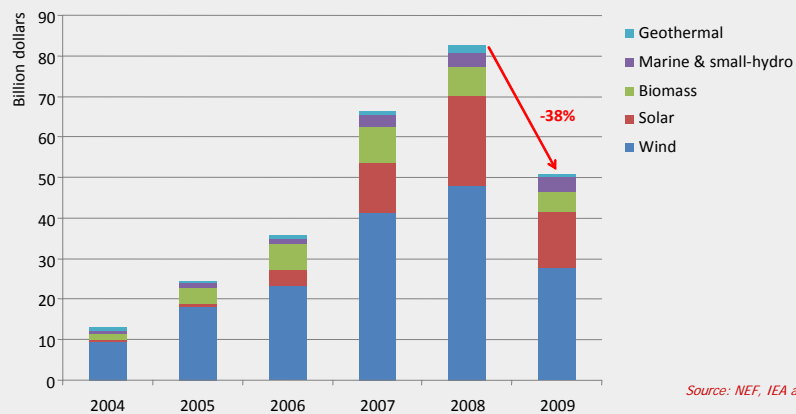


**Global electricity consumption could drop by as much as 3.5% in 2009 – the first annual contraction since the end of the Second World War**

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## Asset financing for new build renewable assets

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Source: NEF, IEA analysis

**Renewable energy investment has collapsed due to lower fossil-fuel prices and the financial crisis – which has dried up sources of project finance**

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## Implications for energy industry structure & ownership

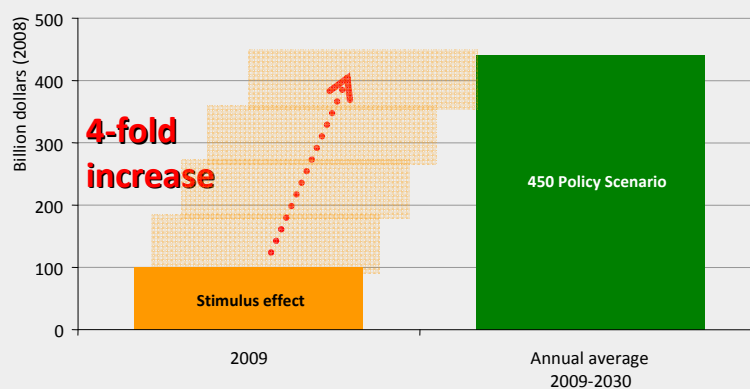
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- All energy sectors likely to see consolidation as large firms with robust balance sheets take over or buy assets from smaller firms
- New wave of oil & gas deals in offing?
  - > Majors, strongest independents & some national companies well placed to acquire assets from distressed operators
  - > Chinese national oil companies remain active in investing abroad, including recent deals in Venezuela, Brazil, Iran & Africa
- Dominance of traditional power companies, with stable grid businesses, could rise as independents struggle to secure finance

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## Incremental investment in the low-carbon sector

World  
Energy  
Outlook  
2008



To achieve the 450 Policy Scenario, governments would need to increase funds committed to the low-carbon energy sector 4-fold relative to their recent stimulus package

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## Conclusions

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- ❑ The **economic & financial crisis** has sharply reduced investment all the way down the energy supply chain, from production to end use
- ❑ This will have far-reaching effects on **energy security, climate change and energy poverty**
- ❑ The current crisis is an **opportunity** to place a *Clean Energy New Deal* at the heart of stimulus packages everywhere
- ❑ The **WEO-2009** will include an update of this analysis and insights into the implications for the medium and longer-term