

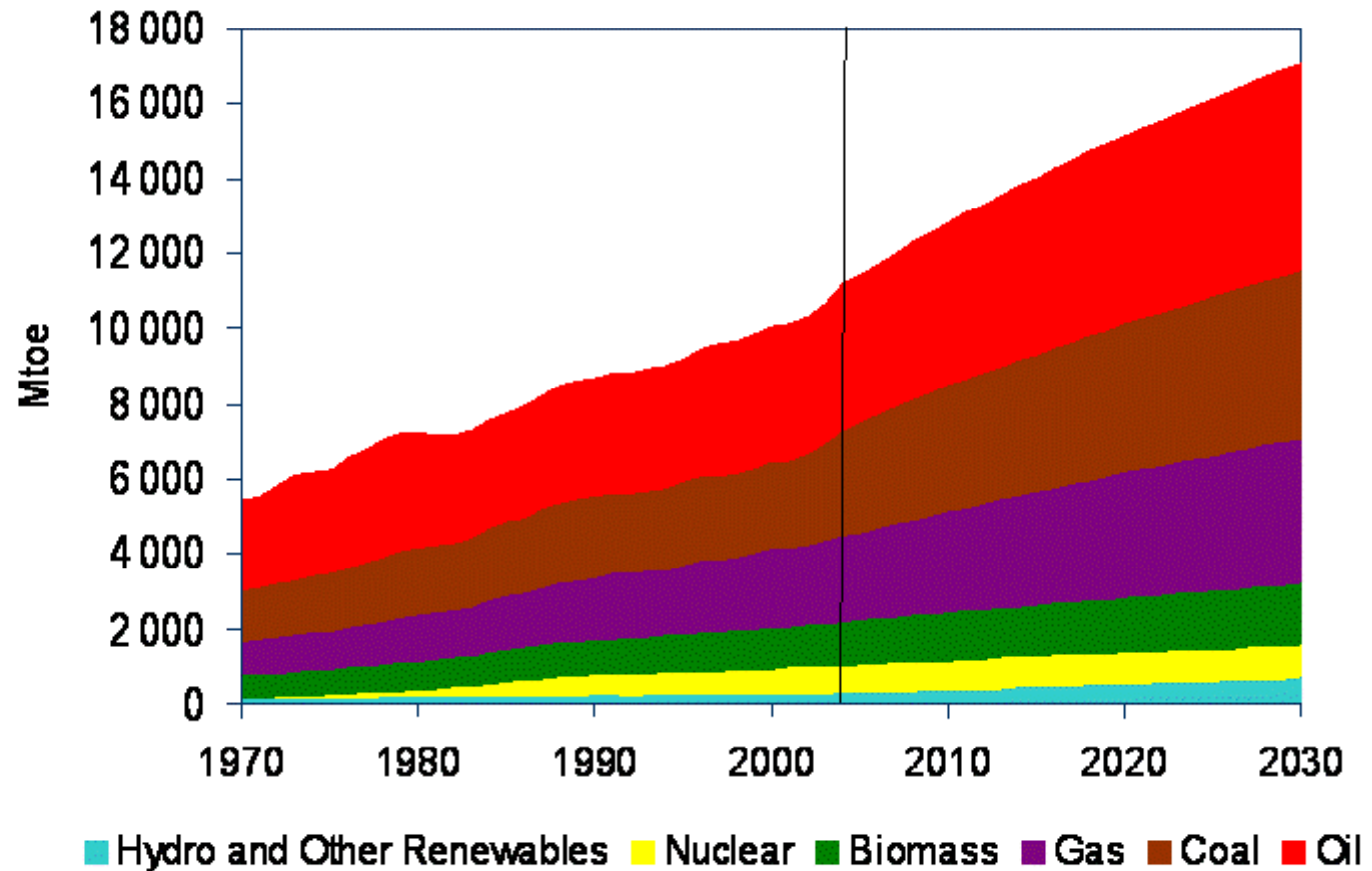
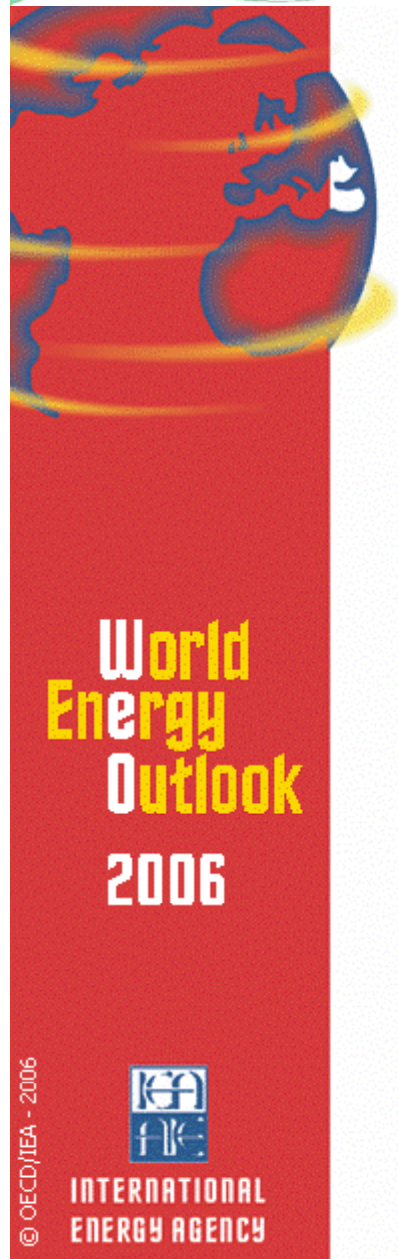
# Role and Impact of Low/Non-emitting Technology

**CARBON EXPO 2007**  
**Cologne, 4 May 2007**

## **Panellists**

- **Martin Berkenkamp, GE Energy**
- **Andrew Scanlon, Hydro Tasmania**
- **Sami Tulonen, FORATOM**
- **Paul Loeffelman, AEP**

## World Primary Energy Demand by Fuel in the Reference Scenario



# IPCC AR4, WGIII

<b>Key mitigation technologies and practices currently commercially available in energy supply</b>	<b>Key mitigation technologies and practices projected to be commercialized before 2030</b>
<ul style="list-style-type: none"><li>• Improved supply and distribution efficiency;</li><li>• fuel switching from coal to gas;</li><li>• nuclear power;</li><li>• renewable heat and power (hydropower, solar, wind, geothermal and bioenergy);</li><li>• combined heat and power;</li><li>• early applications of CCS (e.g. storage of removed CO<sub>2</sub> from natural gas)</li></ul>	<ul style="list-style-type: none"><li>• Carbon Capture and Storage (CCS) for gas, biomass and coal-fired electricity generating facilities; advanced nuclear power;</li><li>• advanced renewable energy (e.g. tidal and waves energy, concentrating solar, and solar PV)</li></ul>

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- Future energy infrastructure investments are expected to total over 20 trillion US\$ between now and 2030
- Initial estimates show that returning energy-related CO<sub>2</sub> emissions to 2005 levels by 2030 would require net additional investments in the range from negligible to 5-10%
- Renewable electricity, which accounted for 18% of the electricity supply in 2005, can have a 30-35% share of the total electricity supply in 2030 at carbon prices up to 50 US\$/tCO<sub>2</sub>-eq
- Nuclear power, which accounted for 16% of the electricity supply in 2005, can have an 18% share of the total electricity supply in 2030 at carbon prices up to 50 US\$/tCO<sub>2</sub>-eq, but safety, weapons proliferation and waste remain as constraints
- CCS in underground geological formations is a new technology with the potential to make an important contribution to mitigation by 2030

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