Global Energy Investment Challenges

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World Energy Outlook 2002: Key Strategic Challenges

- security of energy supplies
- threat of environmental damage caused by energy use
- uneven access of the world’s population to modern energy
- investment in energy infrastructure
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Oil
World Oil Production Capacity Outlook

Decline rates are a key long-term determinant of upstream capacity investment requirements.
Gas
World Gas Upstream Investment Outlook

- Current production capacity: 2800 bcm
- Projected capacity 2030: 5300 bcm
- Additional capacity requirement between today and 2030: 10 000 bcm (ca. 350 bcm/year)
- Substantial new capacity needed to compensate the declines in existing fields—especially in US
The Middle East overtakes the transition economies as the world’s biggest gas-exporting region.
World Gas Investment Outlook

- Global gas trade will increase by more than three times. LNG trade is set to quintuple.

- The share of LNG in trade will grow from 30% now to 50% in 2030 assuming further cost reductions.

- The shipping fleet will increase from 128 tankers today to over 450 in 2030 - some w/o long-term contracts.

- The length of gas transmission and distribution pipelines will double.
Electricity
World electricity demand is set to increase rapidly.
Massive investment will be required in the power sector to meet demand growth and to replace/maintain existing infrastructure.
Nearly 5,000 GW of capacity needs to be built in 2000-2030, almost half in developing countries.
Cumulative worldwide investment in new power plants amounts to $4.2 trillion, more than half in developing countries.
Financial markets in non-OECD regions are smaller, less active and less efficient.
Sound macroeconomic management and legal/regulatory framework are needed to secure the availability of foreign capital to energy projects.
Installed Capacity in EU-15

Capacity additions over the next 30 years will be larger than today's installed capacity.
Age of Installed Capacity in EU 15

Europe's power plants are ageing: half current capacity - mostly coal-fired - could be retired by 2030
Capacity in EU
7 Major Utilities (2002)

GW

EdF
E.ON
RWE
ENEL
Vattenfall
Endesa
Electrabel

Rest of Europe
Home Country

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2003
INSIGHTS
Concluding Remarks-1

- Electricity is overwhelmingly the largest sector - and most of rest is oil and gas
- Bulk of energy investments will shift to developing countries and transition economies
- Capital is available globally but issue is cost and balance of risk/return
- FDI and international capital markets need to play growing role in financing non-OECD investments
Concluding Remarks - 2

- **Oil/Gas**: Decline rates - key long-term uncertainty for upstream investment requirements

- **Gas**: Unit production/transportation costs still falling, but longer supply chains will drive up overall cost to key markets, and thereby boost investment needs

- **Gas/Electricity**: questions on overall impacts of liberalisation on investments

- **Electricity in DCs**: inadequate local capital markets - limited access to international capital