

Universal access to electricity

some EU initiatives

Jacques de Jong

**Senior fellow Clingendael International
Programme**

**Madrid SESSA Conference “Investment for
sustainability”**

19-20 May 2005

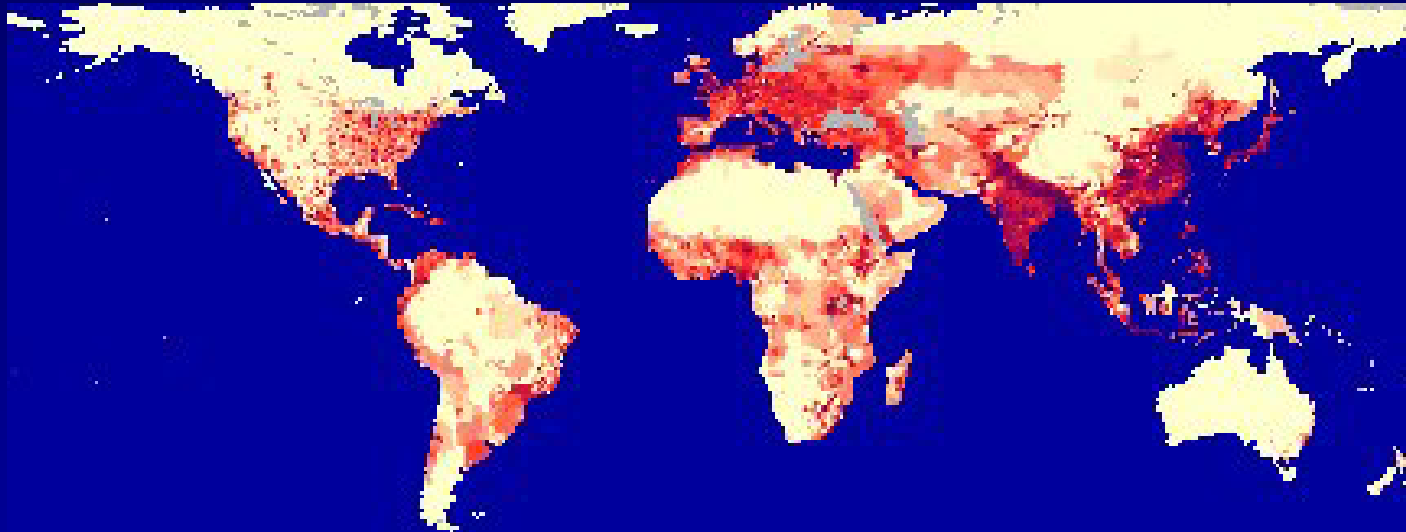


Content

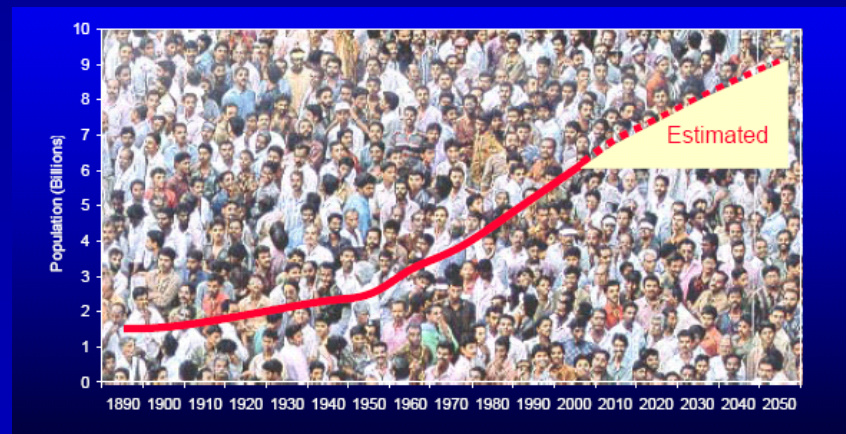
- **The global issue**
- **Universal Energy Access**
- **Transition to sustainable energy systems**



Population growth



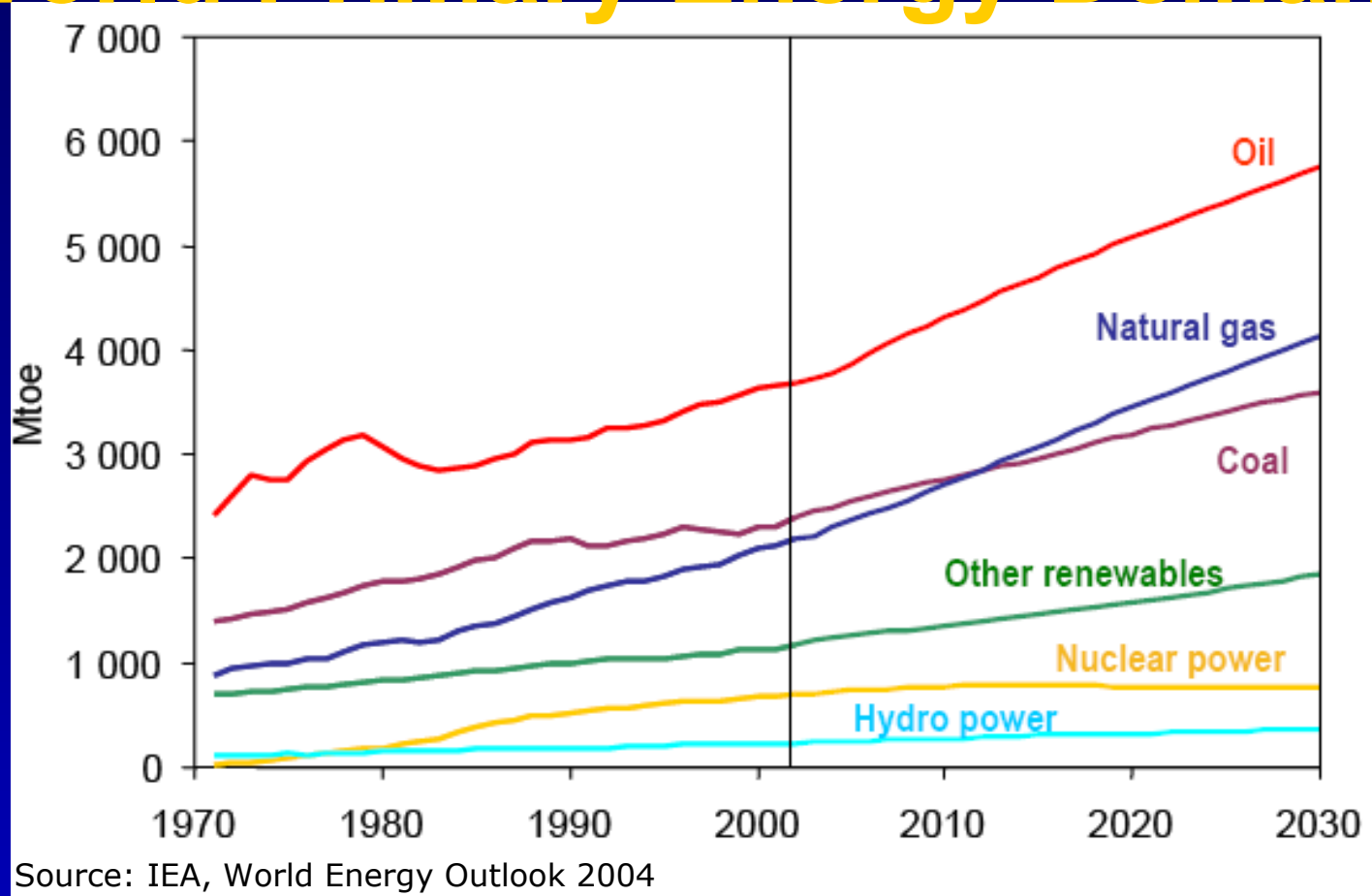
1804	1 billion
1927	2 billion
1959	3 billion
1974	4 billion
1986	5 billion
1999	6 billion
2004	6.3 billion
2020	8 billion ?



The annual growth rate was approx. 0.5% until 1900, rose to 1 % in 1925, and peaked at 2.1 % in 1964. Today's rate is 1.2% and dropping.



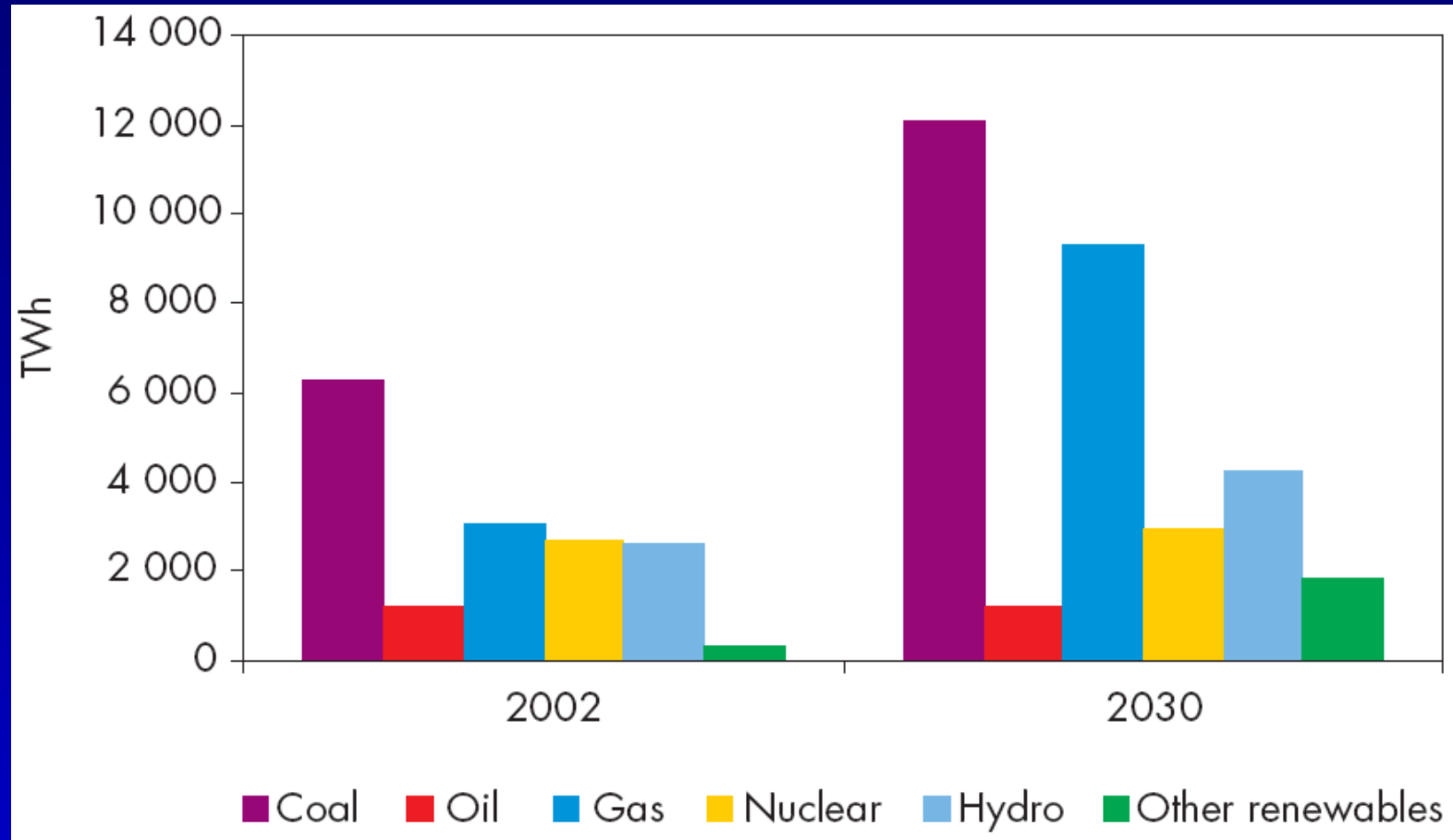
World Primary Energy Demand



Fossil fuels account for 90% of growth in energy demand between now and 2030



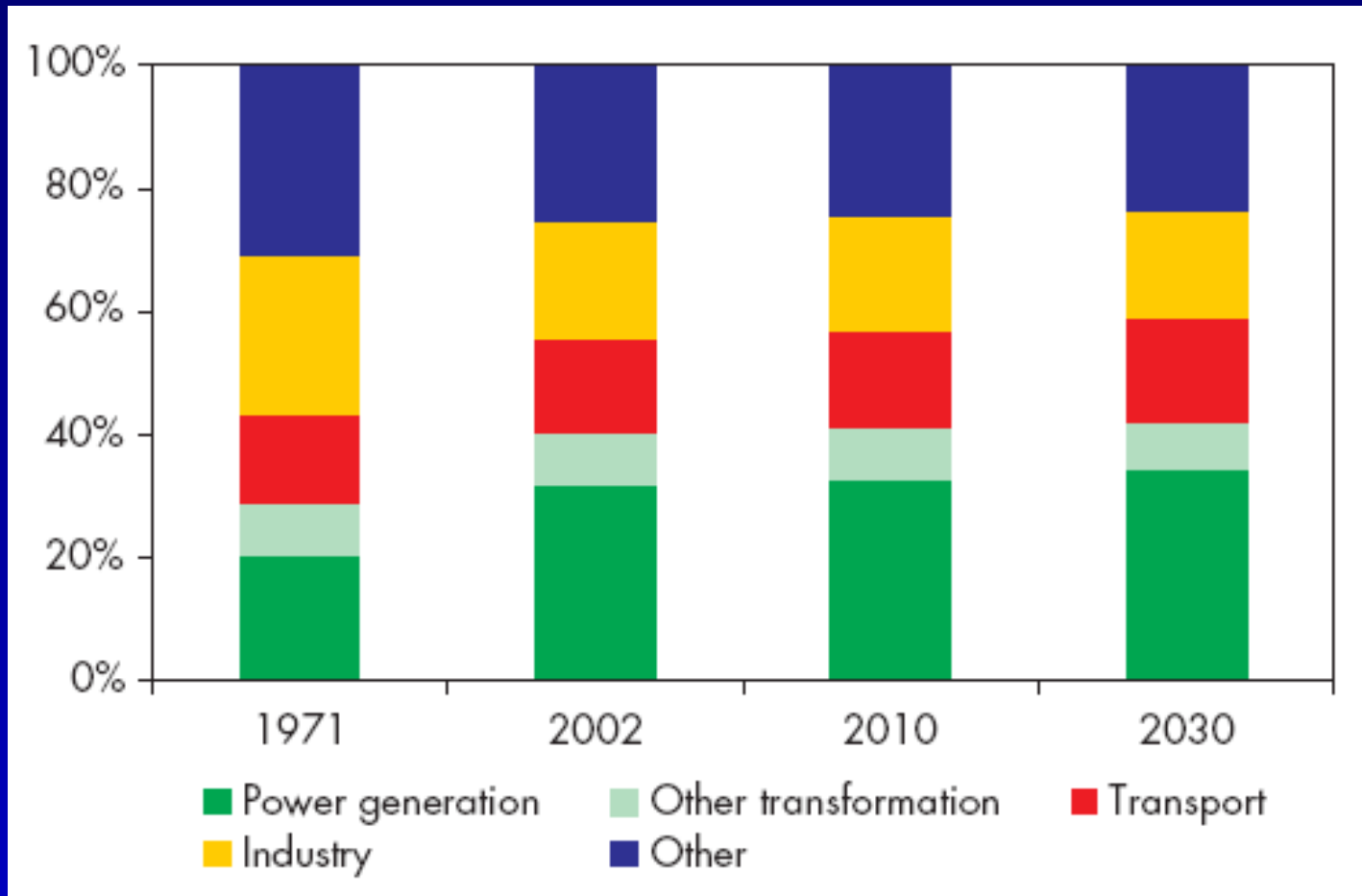
World Electricity Generation, 2002 and 2030



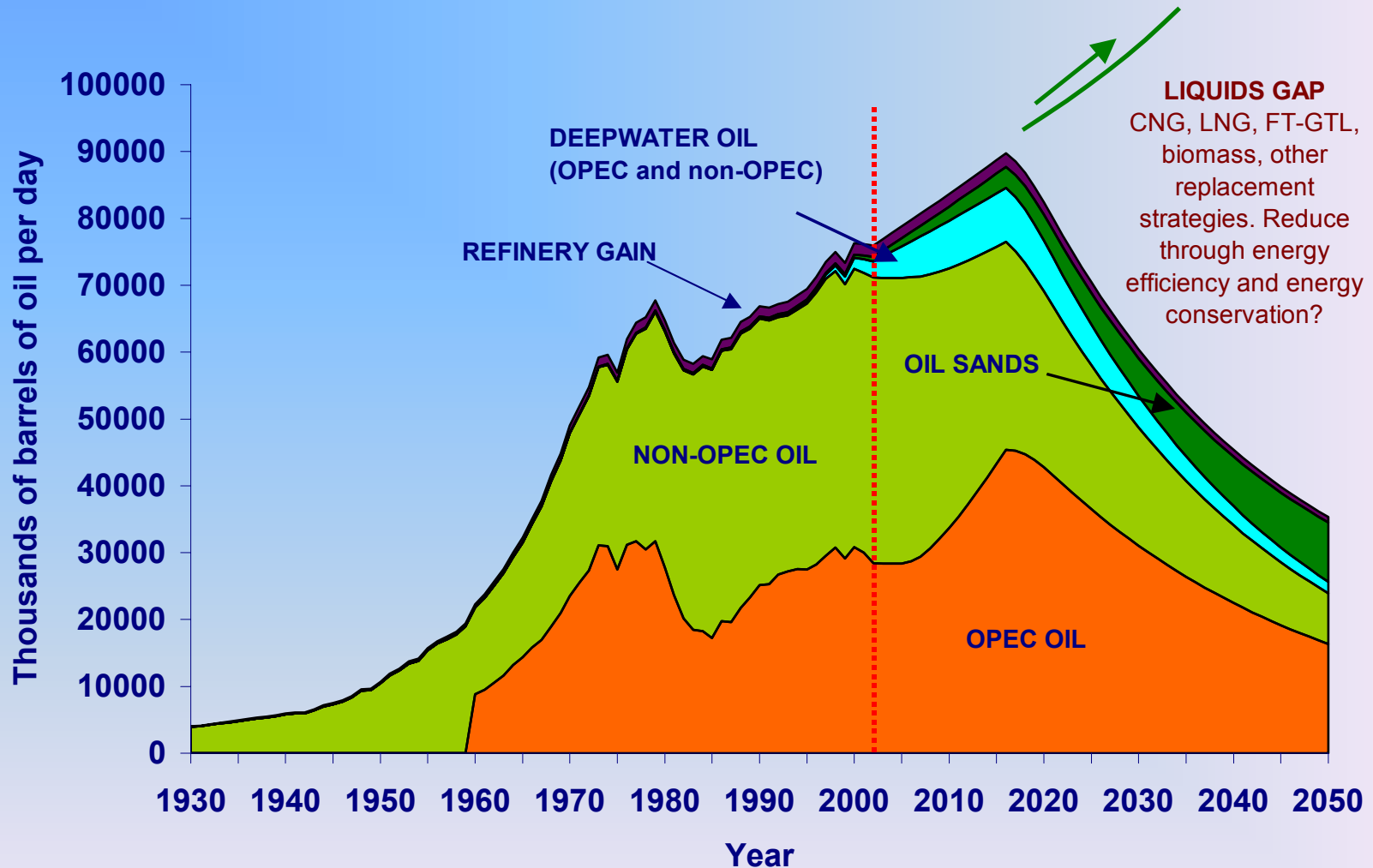
Source: IEA, WEO 2004



Sectoral Shares in World Primary Energy Demand



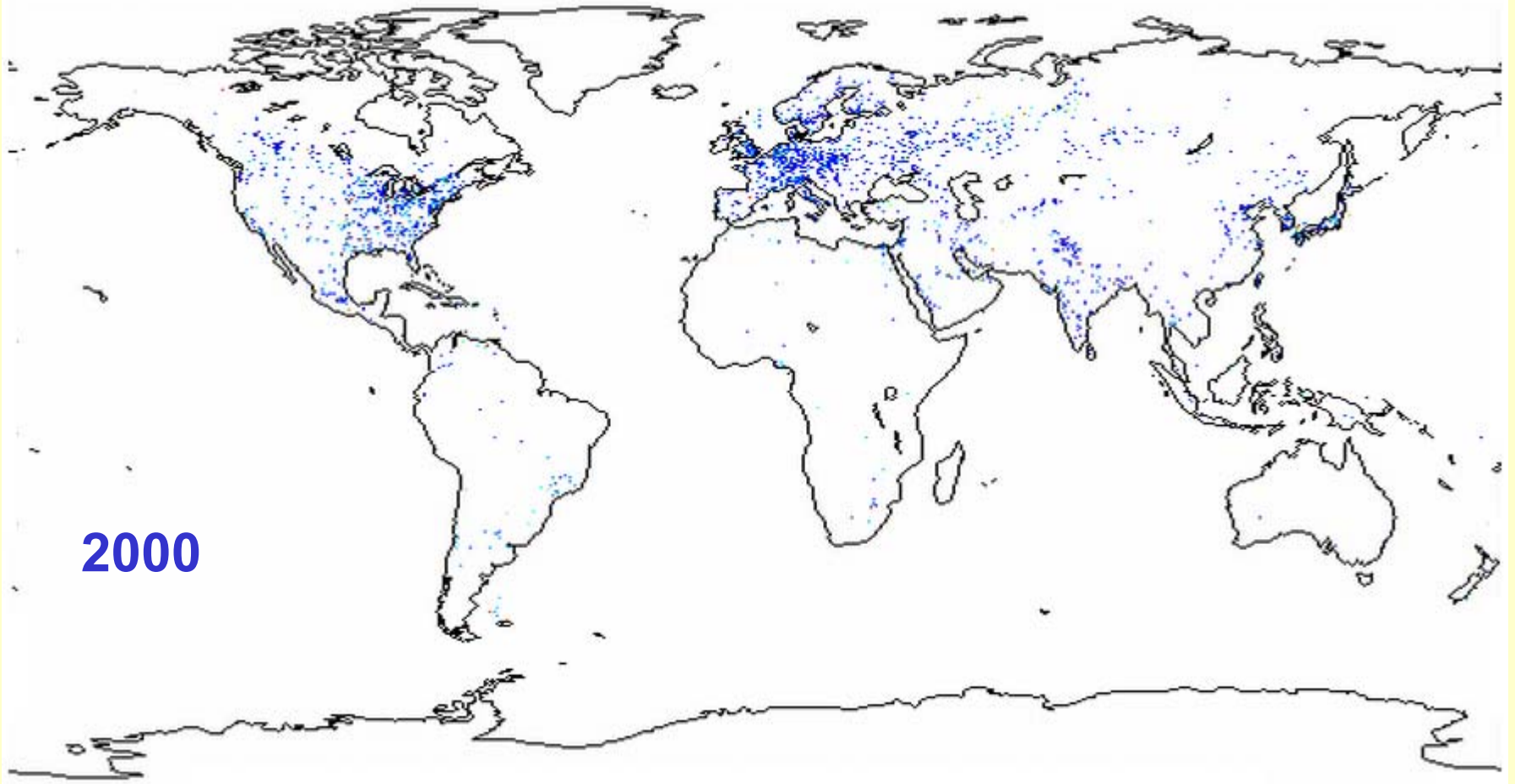
Global oil; all supplies 1930-2050



Exxon: by 2015 we find 0.8 of every 10 barrel we consume today

'Plan now for a world without oil' (FT 01/2004)

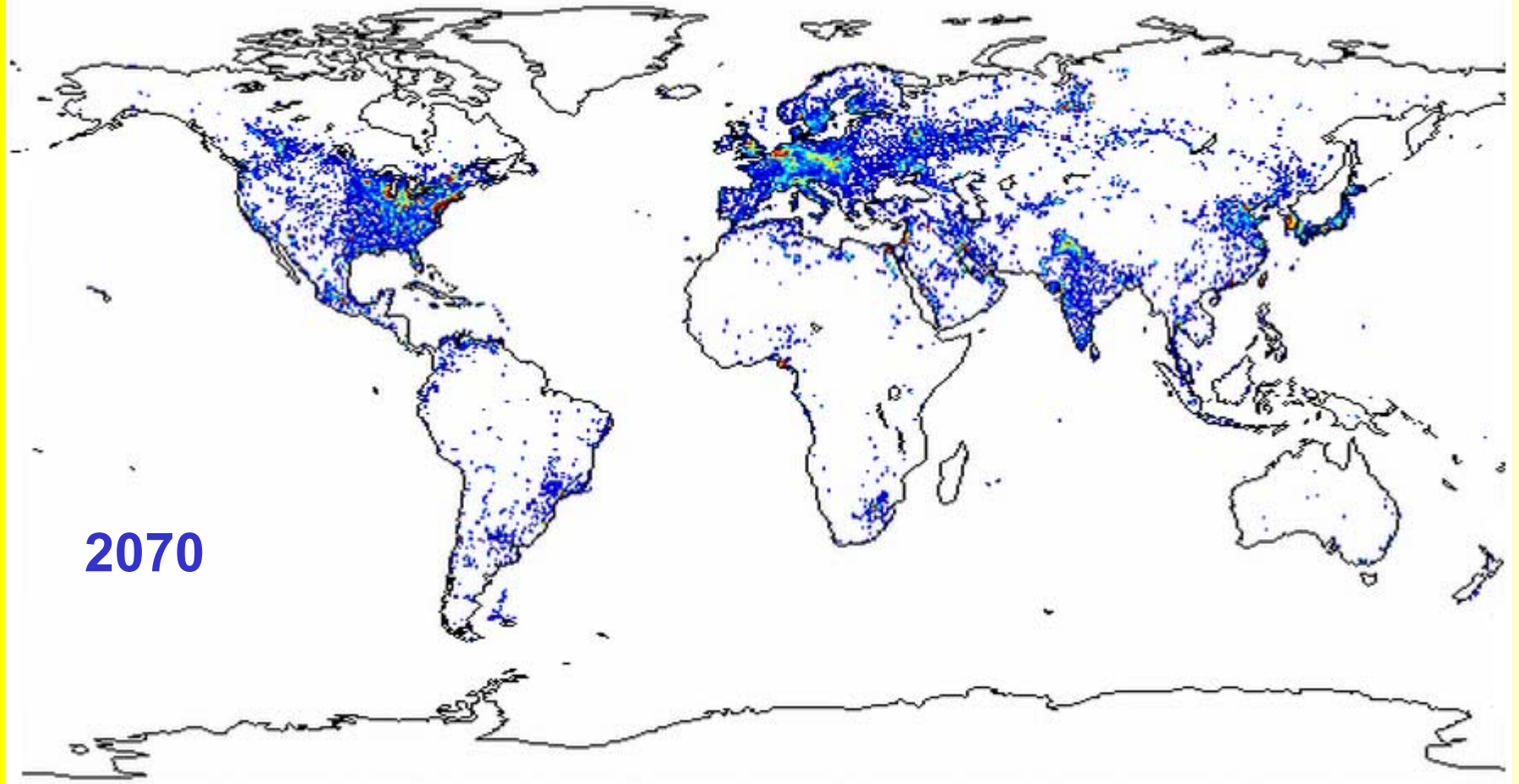
Night Lights



2000



Night Lights



2070

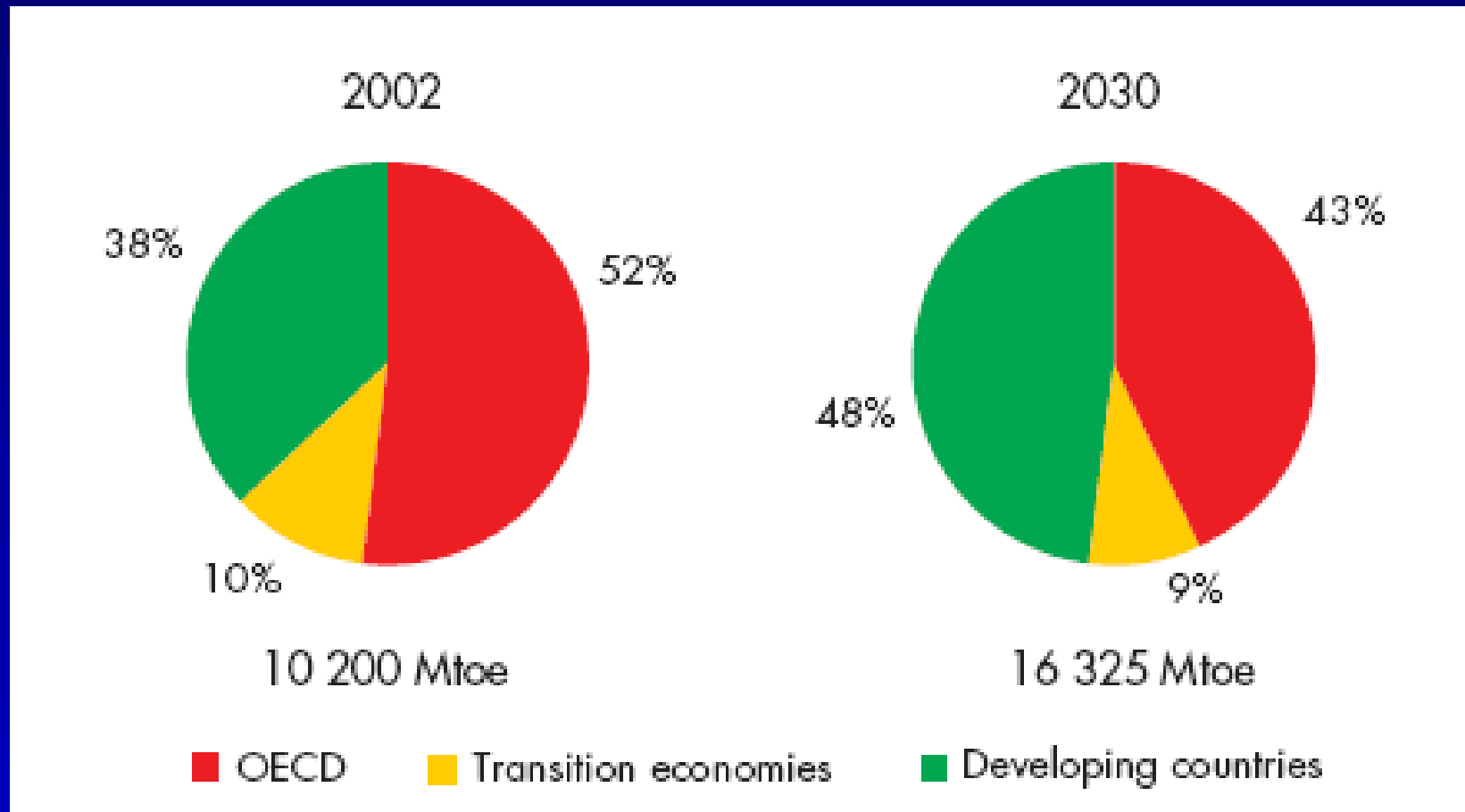


2001–2004:

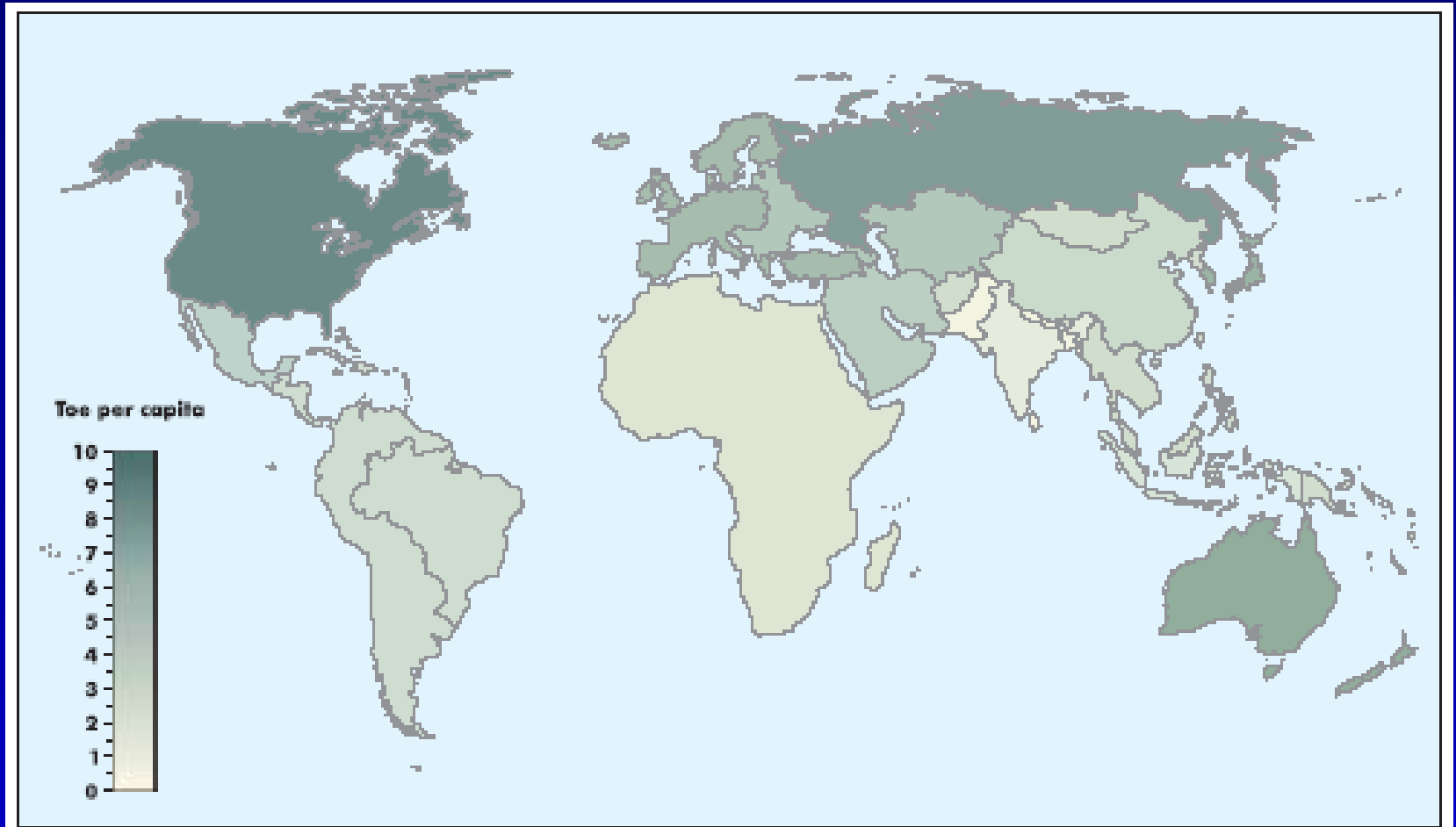
The dual crisis of 'security' and 'market trust'



Regional Shares in World Energy Demand



Primary Energy Consumption Per Capita, 2030

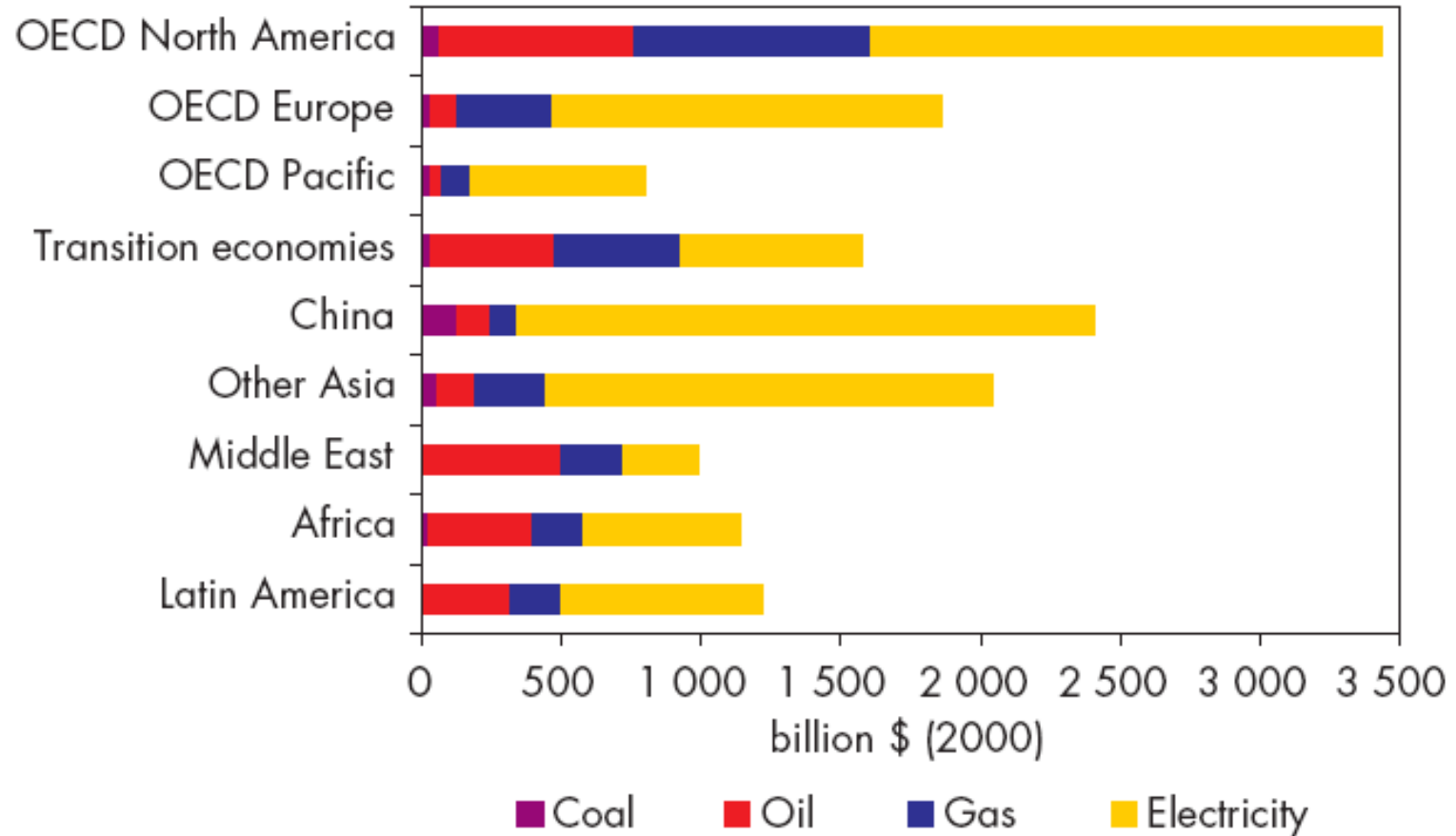


Investment Implications

- Increase in global energy supply calls for cumulative infrastructure investment of \$16 trillion over the period 2003 – 2030
- Electricity sector will absorb almost \$10 trillion
- Oil and gas sectors will each amount to almost \$ 3 trillion
- Developing countries will require almost \$8 trillion
- China alone will need to invest \$2.4 trillion
- Africa needs \$1,1 trillion
- Middle East needs \$1 trillion



Cumulative Investment by Region, 2003-2030



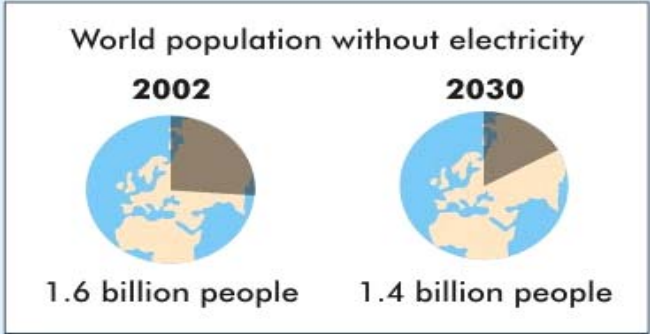
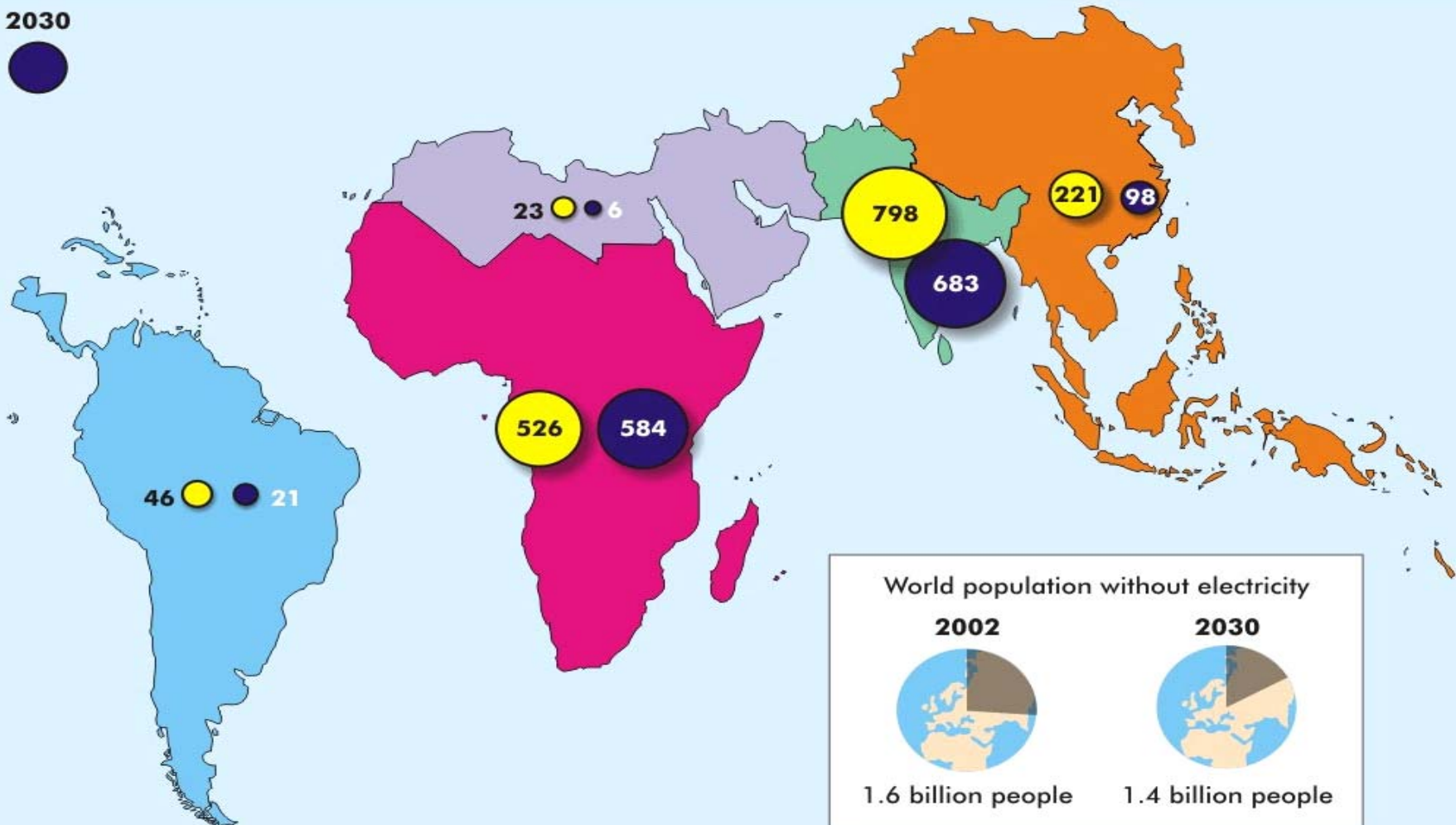
Universal energy access

- **Access & development, MDG**
- **E4D, EUEI**

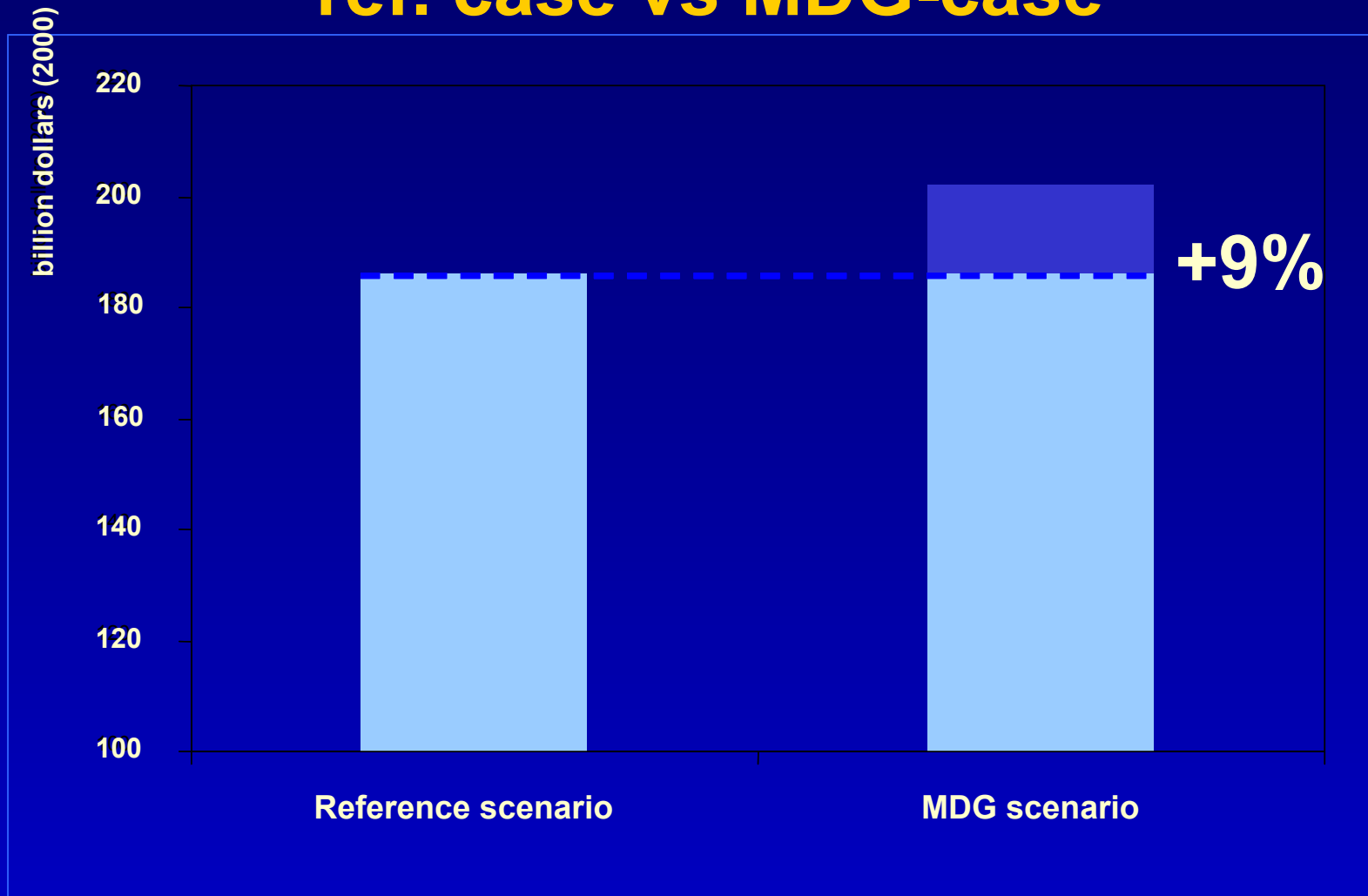


Electricity deprivation; ref. case IEA WEO 2004

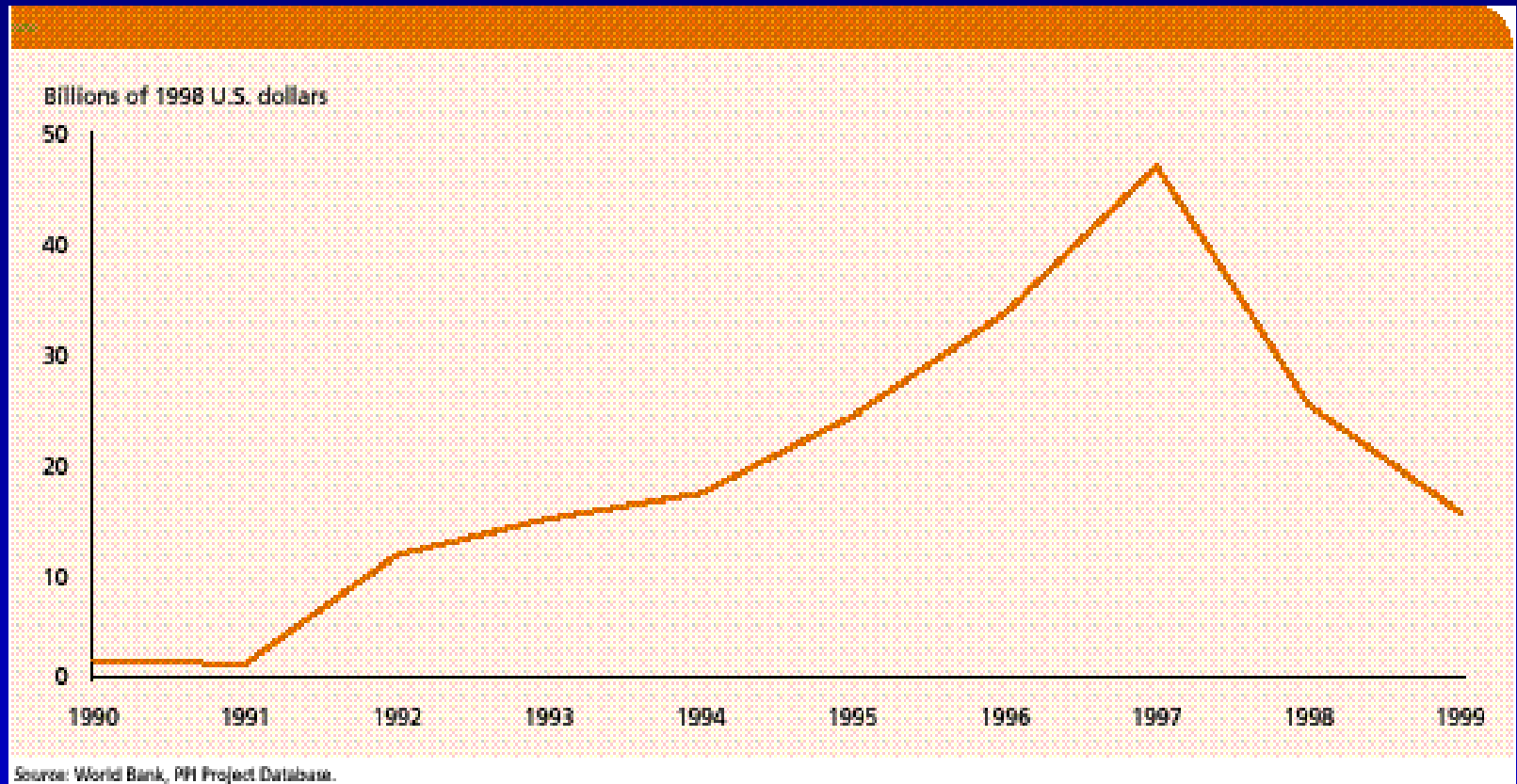
2002 2030



Average electricity investment needs ref. case vs MDG-case



Total Investment in Energy Projects with Private Participation in Developing Countries, 1990 – 1999



E₄D



Energy for Development 2004:

- Major conference (dec. 2004, NL) with govt's, WB/UNDP/WBCSD, financial institutions, private sector (energy, financing), NGO's
- Major challenge:
 - Governance & energy sector management
 - Access for the poor
 - Environmental issues
 - Finance, risk & investment climate



E4D-outcome



- Energy essential for growth, high priority
- Assure access for the poor to modern energy
- Environment & health, basic issues
- Good governance, market reform and stable investment climate are essential
- Stop downward trend in ODA energy investments



E4D-outcomes: do's and don'ts

- Set the rules & keep them
- Short procedures
- Transparant bidding
- Involve WB
- Build confidence
- Subsidies are needed
- Rehablitate existing infra before building new
- Universal acces= local issue
- Use prepaid systems
- Electricity needed anyhow, don't prioritize between water, schools, hospitals
- No technological experiments in rural areas
- Don't tell locals how to use energy
- Discourage non-payment habits



E4D-outcomes: private investment

- Write the rules-of-the-game and they will come.
- Don't change them and they will stay



EU Energy Initiative



- **Increase political awareness energy in poverty reduction.**
- **Make apparent need for energy services in national/regional development strategies.**
- **Encourage coherence and synergy of energy-related activities.**
- **Stimulate new resources from private sector, financial institutions, civil society and end-users.**

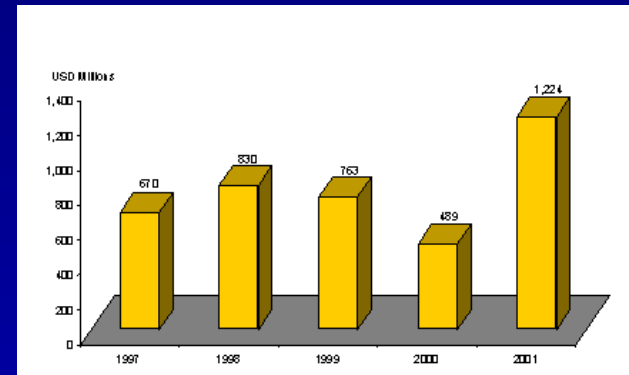


EUEI funds & projects

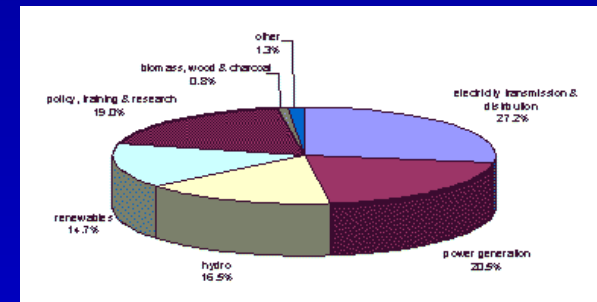


- rural electrification
- enhanced energy efficiency
- decentralised energy systems
- increased use of renewable energy
- institutional capacity building and restructuring
- policy, planning and transfer of knowledge and skills.

- 1997-2001: \$800 mill./a



- Electricity: 50%

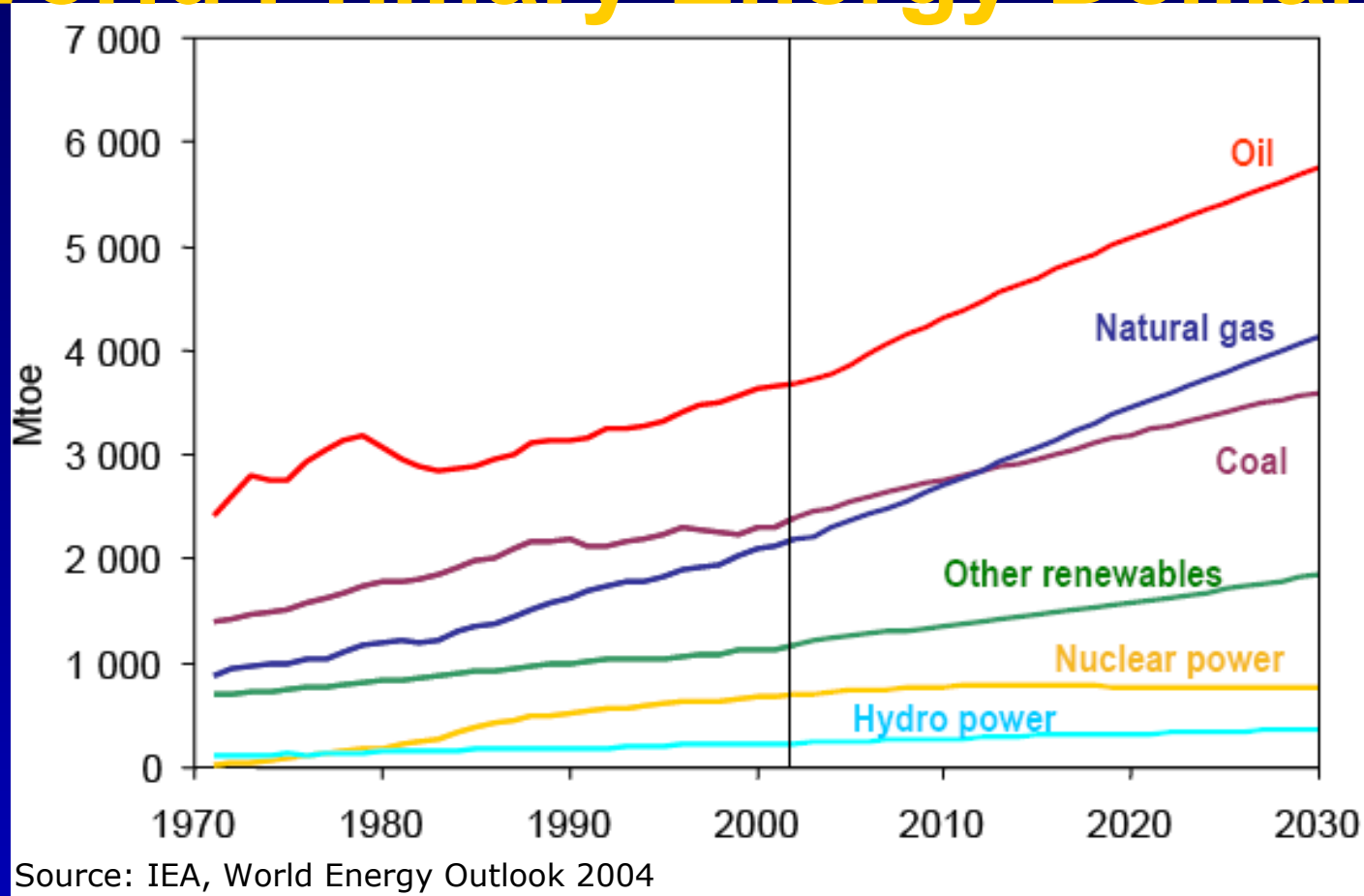


Transition to sustainability

- **Carbon-exit strategy**
- **Regional issues (EU)**
- **New policy approaches**



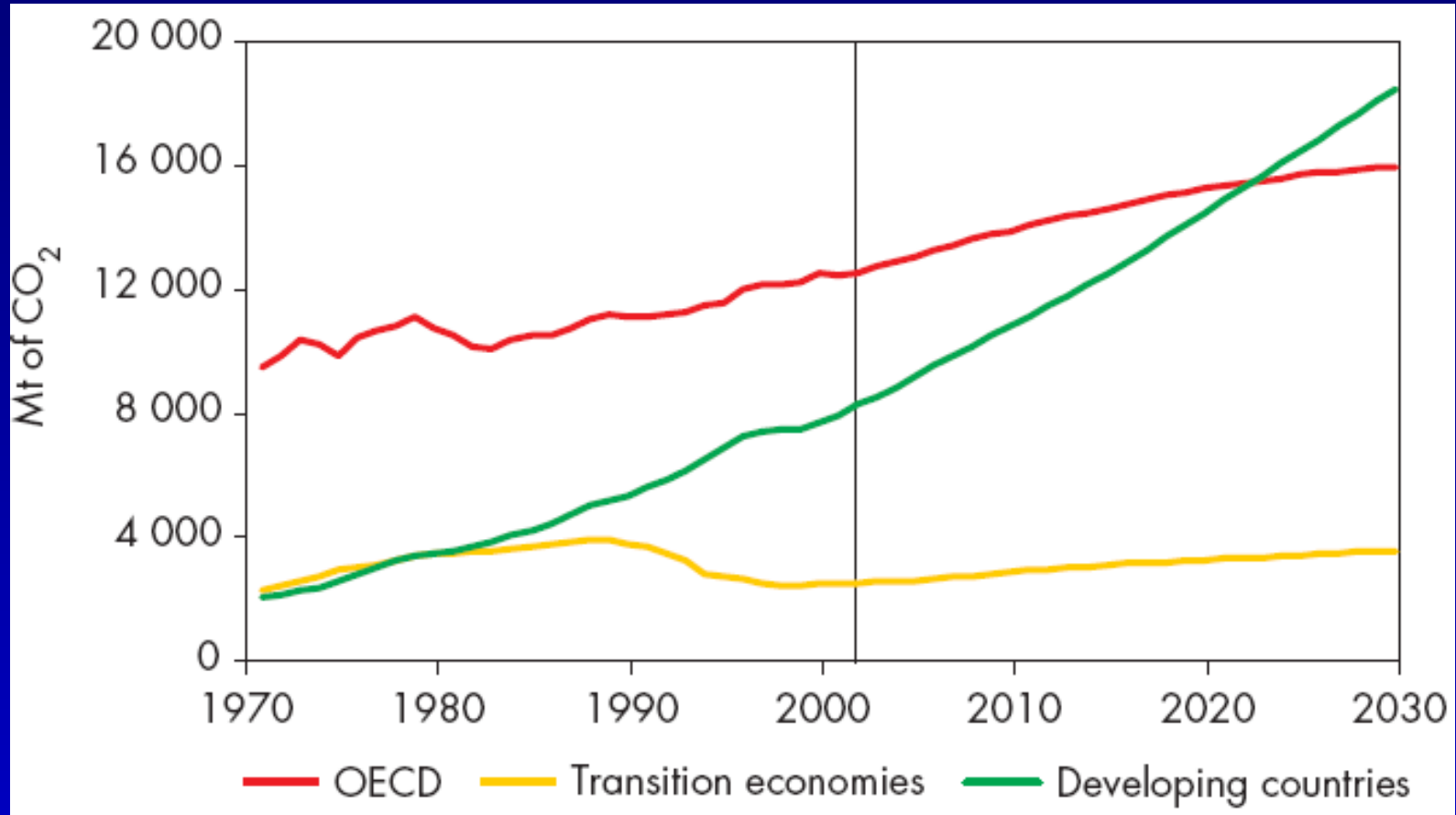
World Primary Energy Demand



Fossil fuels account for 90% of growth in energy demand between now and 2030



Regional Distribution of Energy-Related CO₂ Emissions

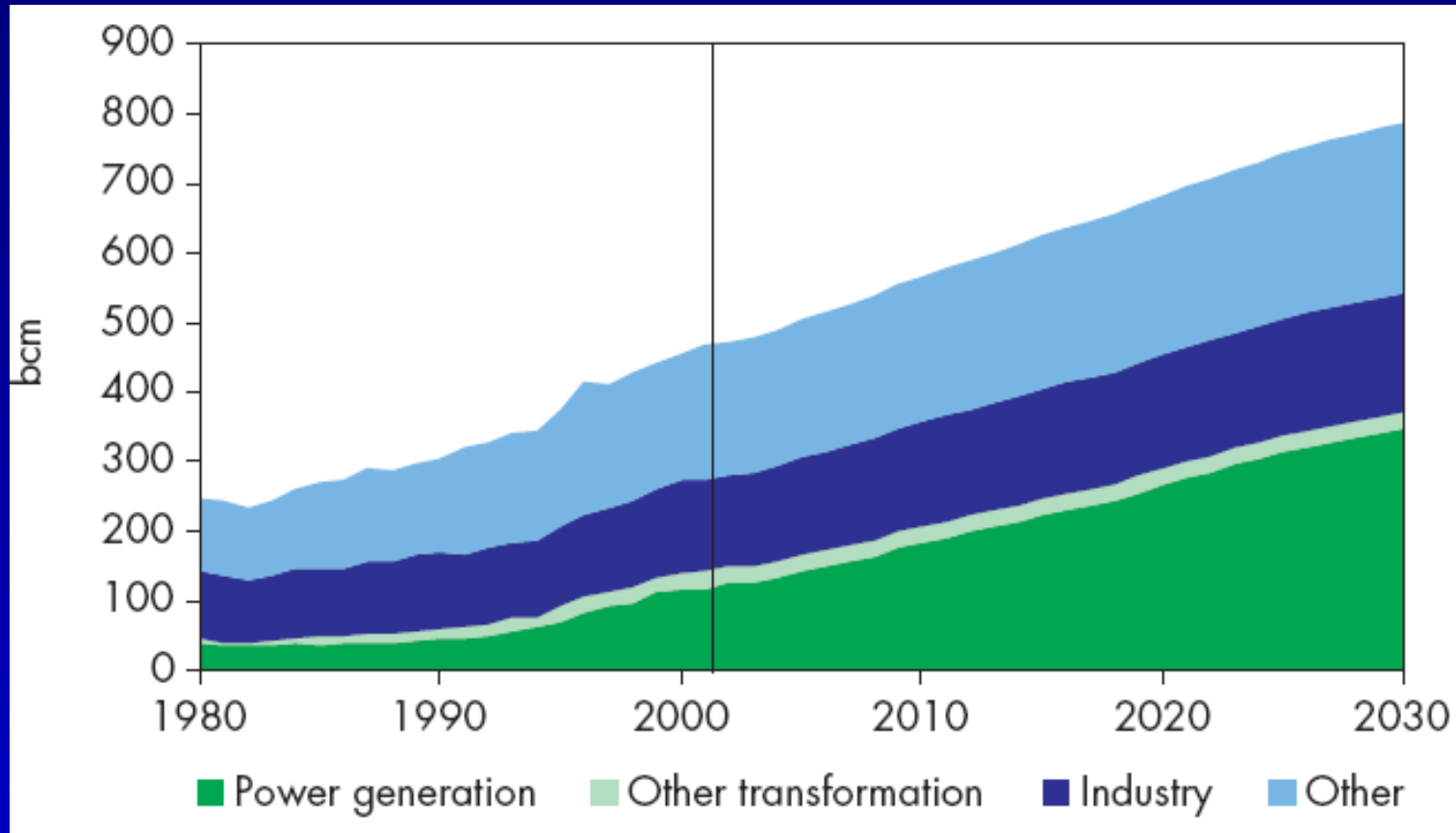


Source: IEA, WEO 2004

27



Natural Gas Demand in the EU

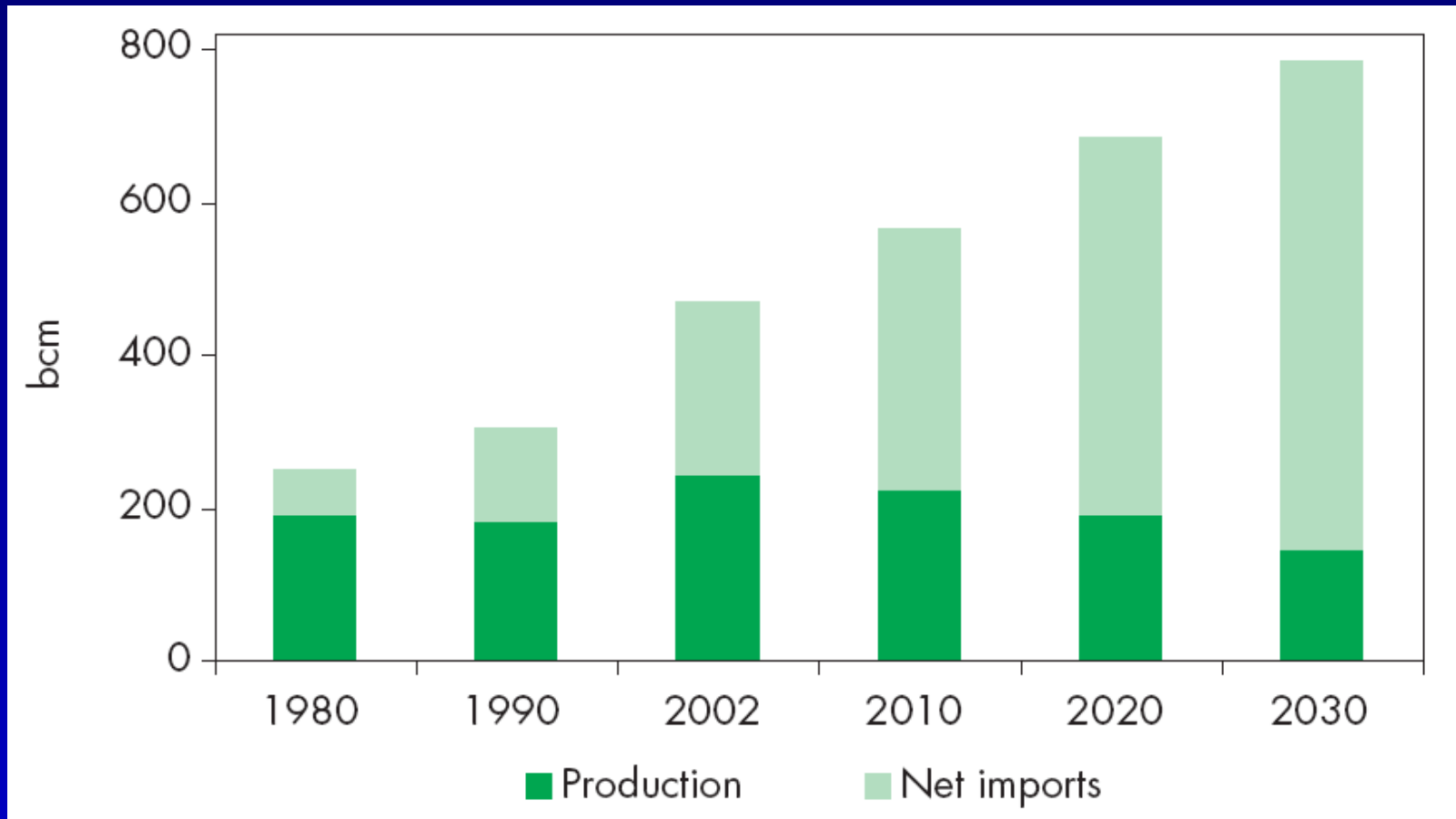


Source: IEA, WEO 2004

28



Gas Supply Balance in the EU



Transition policy

- **Transition process, EU, m-s:**
 - EU & government roles
 - Stakeholders; platform process?
- **Policy frameworks:**
 - Transition paths
 - Targets & approaches
- **Energy issues, global issues:**
 - Supply
 - Environment
 - Markets
- **Need for global discussions, but no global framework**



EU carbon exit ?

- **EU-RES target: 12% TPE in 2010**
- **Energy efficiency strategy?**
- **Carbon exit strategy (fuel mix power generation)**
- **Post Kyoto strategy ?**
- **Security of supply strategy ?**





Clingendael International
Energy Programme

CIEP

www.clingendael.nl/ciep

Thank you !

