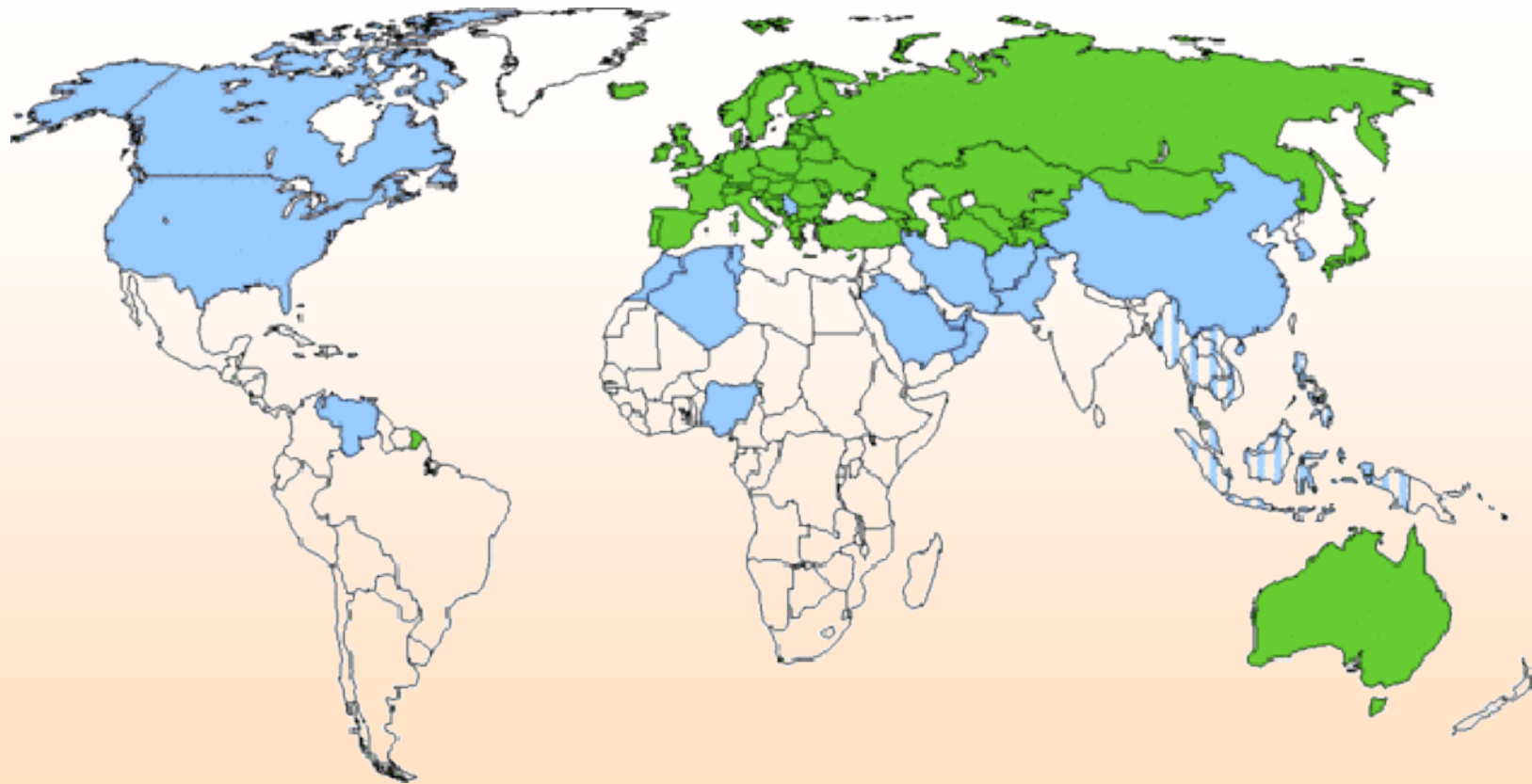


**Cogeneration, District Heating and Energy Efficiency:
Policies and Actors**

Dr. Tudor Constantinescu
The Energy Charter Secretariat

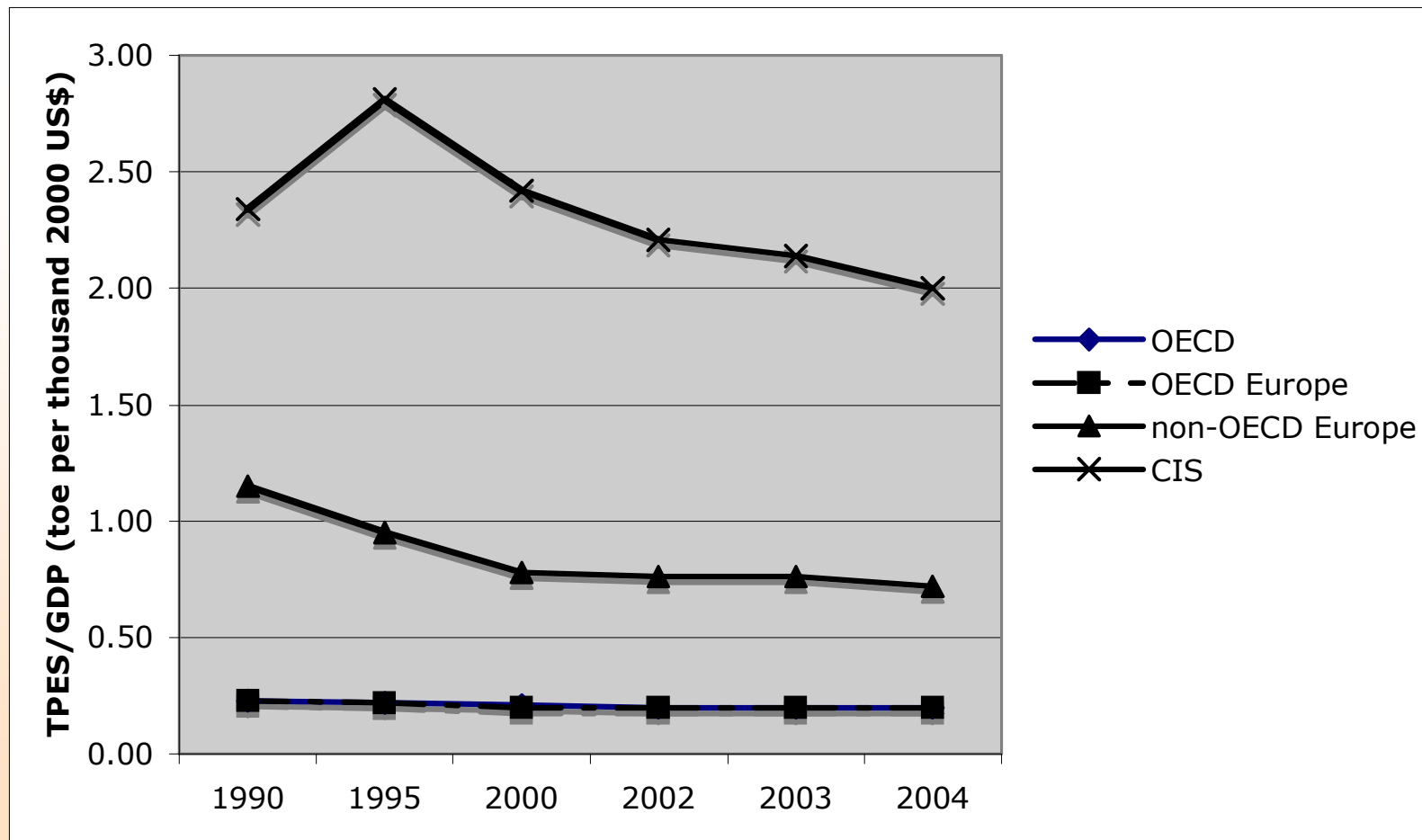
Euroheat&Power Congress
CHP/DHC: building our future
Copenhagen 18 - 19 June 2007

Energy Charter Constituency



www.encharter.org

Energy Intensity in various regions



Global developments I

- EU: European and Global Driver (20% RES, 20% EE, 20% CO₂, 10% biofuels by 2020);
 - Directives (on CHP, RES, ENDES, Buildings) and Action Plan;
 - Impact of Elargement
- EE & CIS
- Other OECD (US – 2205 Energy Policy Act)

Global developments II

- **INDIA*** -The power generation capacity must increase to nearly 800,000 megawatt (MW) by 2031-32, from the current capacity of 160,000 MW.
- **CHINA**** - Boom in power plant construction

- **101 GW added in 2006**
- **92 GW coal-fired**
- **589 million tons of CO₂/year**

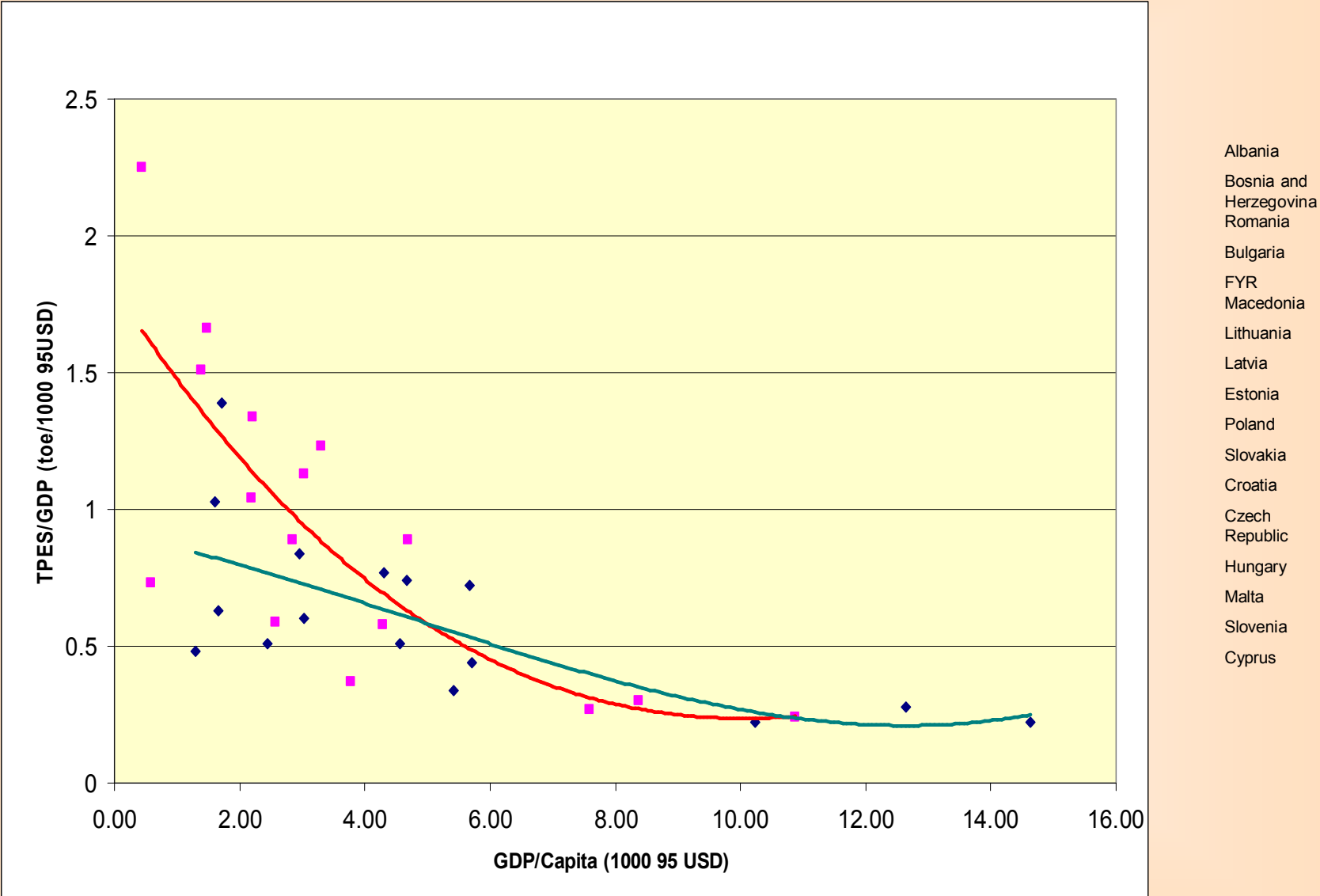
China's 11th Five-Year Plan

- GDP growth rate target, 7.5%
- Total pollution reduction, 10%
- EI reduction target, 20% which translates into
- About 1.5 billion tons of CO₂ reduction in five years

* Source: Dipankar Dey,ICFAI Business School, Kolkata, India

**Source: Jiang LIN, China Energy Group, Lawrence Berkeley National Lab

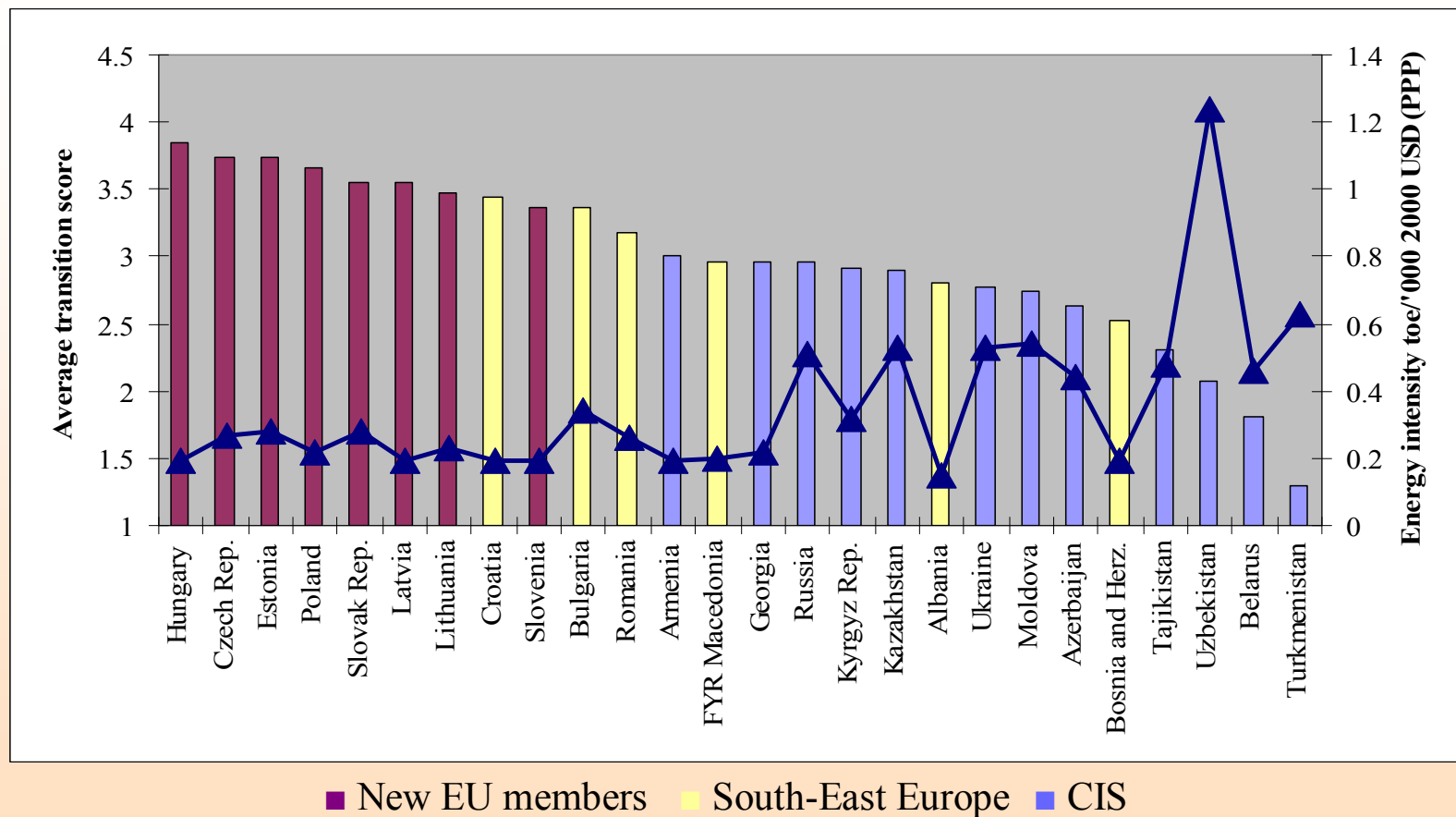
Energy Intensity and Economic Welfare in CEE 2002 vs 1992



Graphs based on IEA data

Energy efficiency – part of transition process in CEE/CIS

Average transition scores and energy intensity of ECT countries in transition

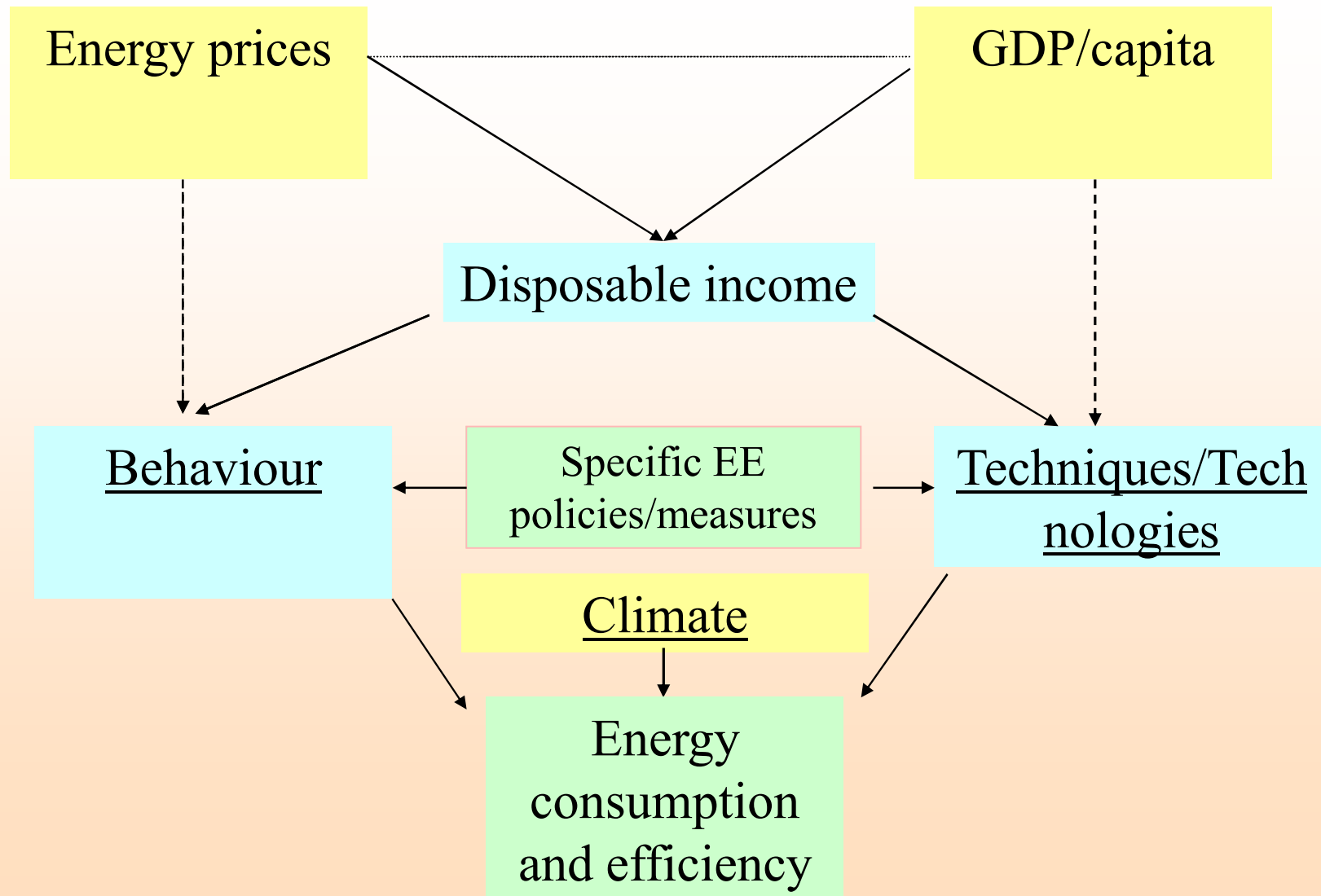


Sources: Based on data in the EBRD Transition report 2004 and the IEA Key Energy Statistics 2005

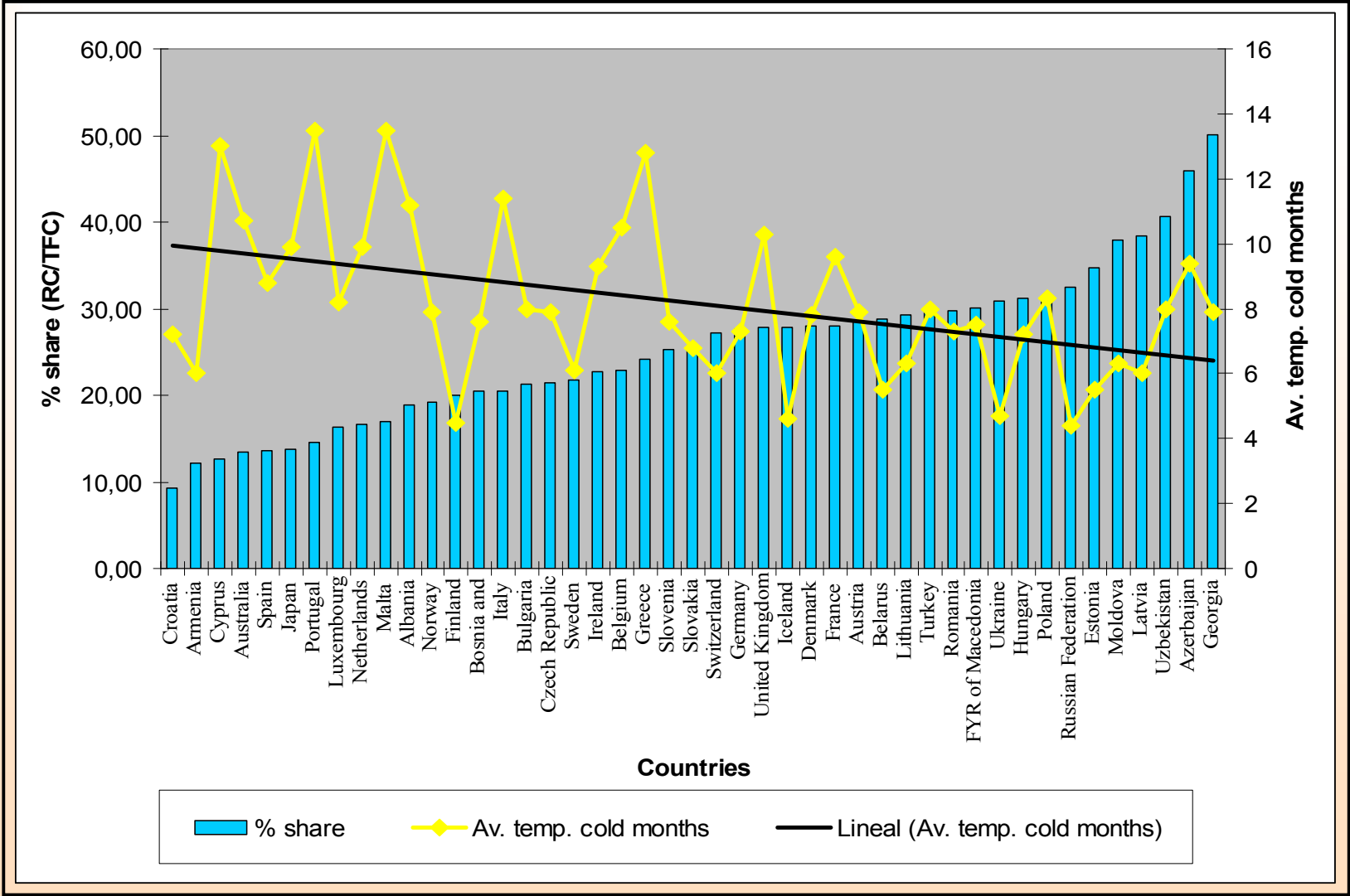
Interactions

Residential Energy Consumption

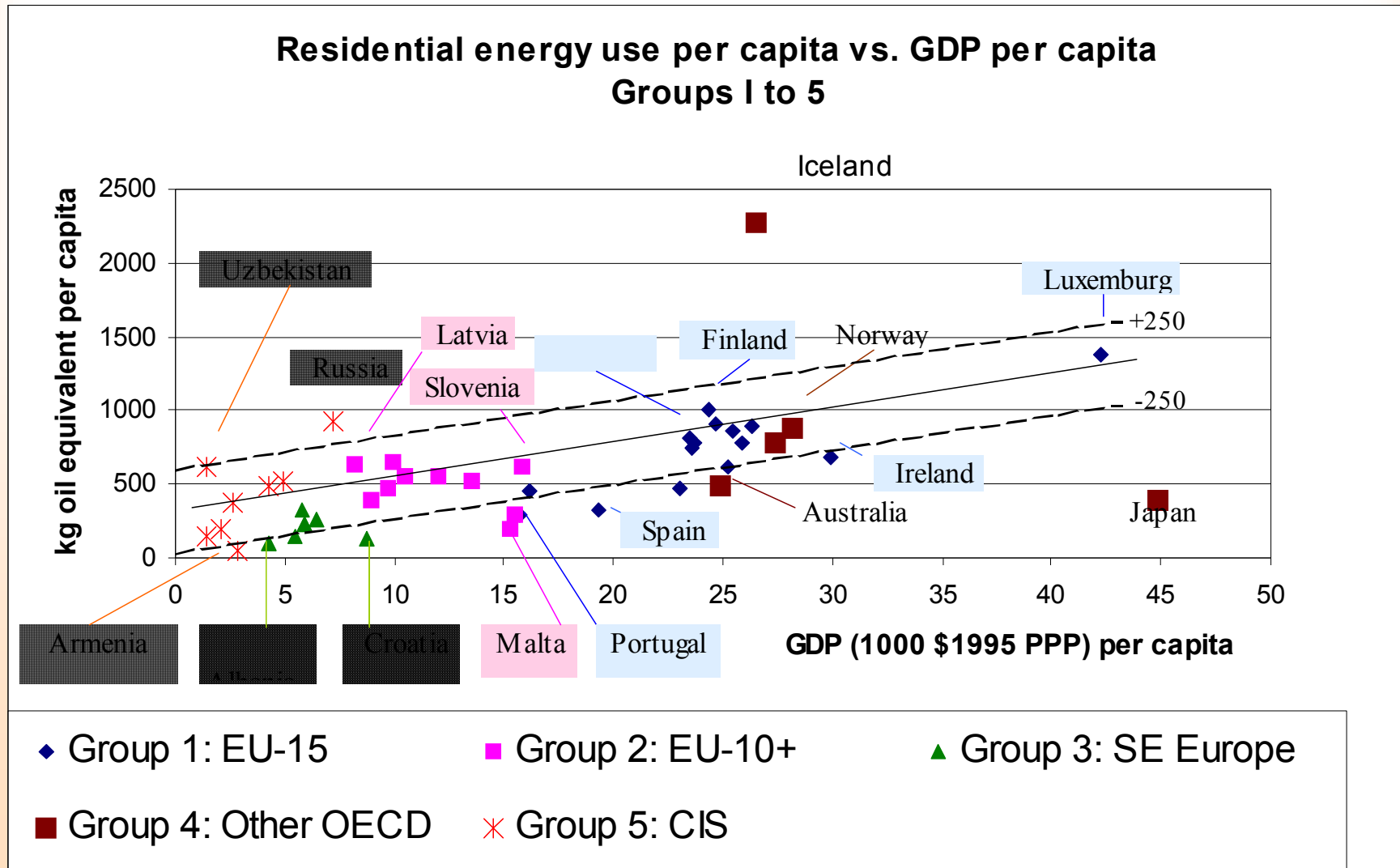
Heating, Lightening, Cooking, El Appliances



Residential consumption and average temperature during cold months



Residential consumption and GDP/capita



Role of Governments in EE

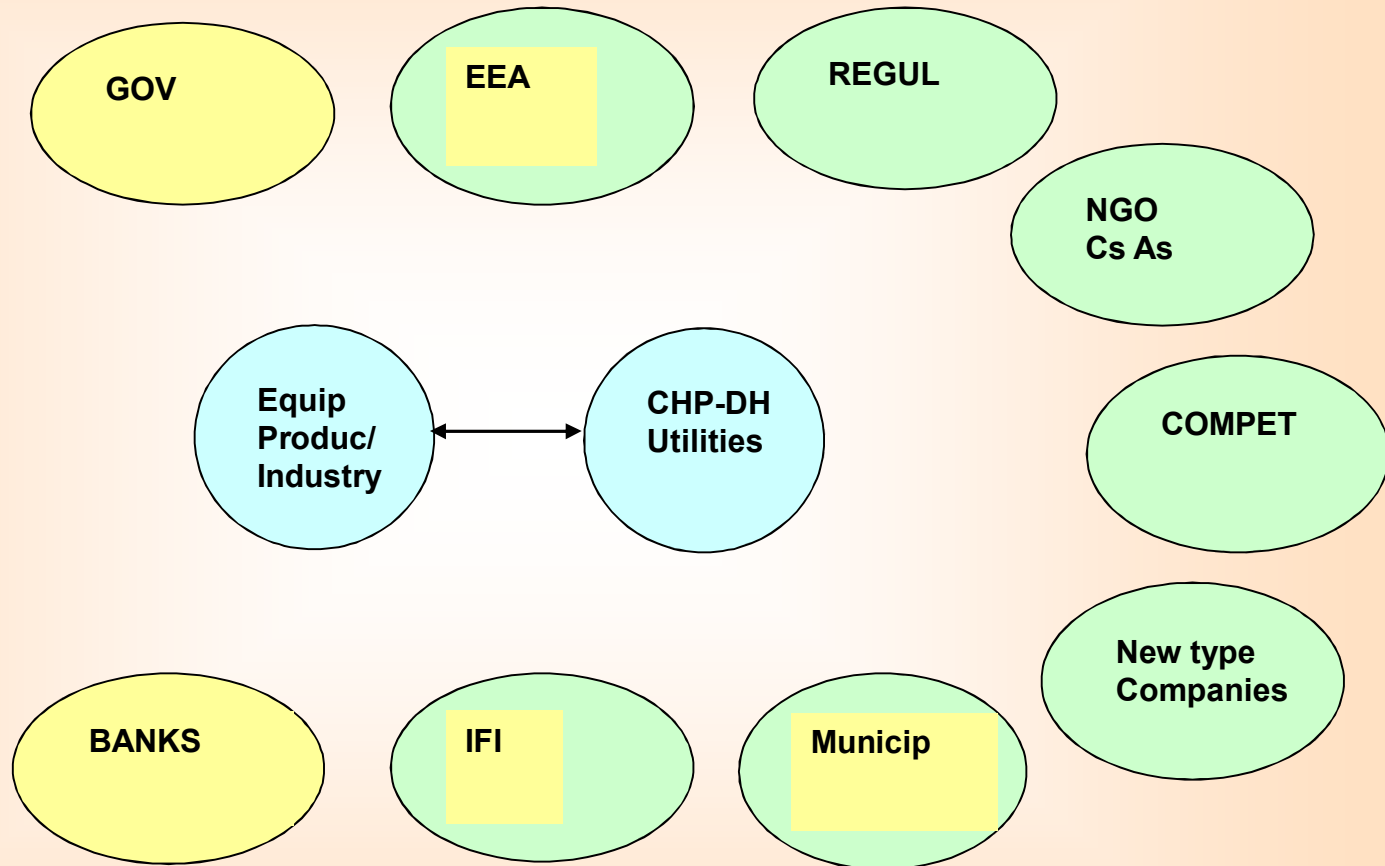
- Policy making (objectives, priorities, targets)
- Legislation and regulatory systems (EE laws, but also eg prices, DSM, Obligations on energy suppliers – e.g. UK EE Commitments)
- Institutions (policy making and implementation)
- EE and Env related taxation
- Specific measures directed to support Financing EE –

CHP/DH in Denmark (70% savings, 30% of resources allocated)

The CHP/DH Business

- Make profit = Stay in Business, Develop, Satisfy Stakeholders
- Keep customers happy = low prices
- Provide more than products - provide cost-effective and environmentally friendly solutions
- Interact with old and new actors
- Act in a global environment

An interlinked Energy world in which EE is a top priority



Progress in EE (EU,EE, CIS) Policy Developments

- EU policy communications on energy efficiency and related to energy efficiency (e.g. climate change) have been a major driver in policy development at the national and international levels
- EU initiatives have “pushed” member states who had given energy efficiency a lower priority.
- Energy Services Directive sets quantitative targets and requests Action Plans - an important step forward

Policy Developments 2

- Overall, policy developments in CIS countries have been less ambitious
- For many of them, climate change is of a lower priority while energy security gets higher on the agenda; still the contribution of energy efficiency not well defined
- Some do have quantitative targets for energy efficiency

The Institutional Situation

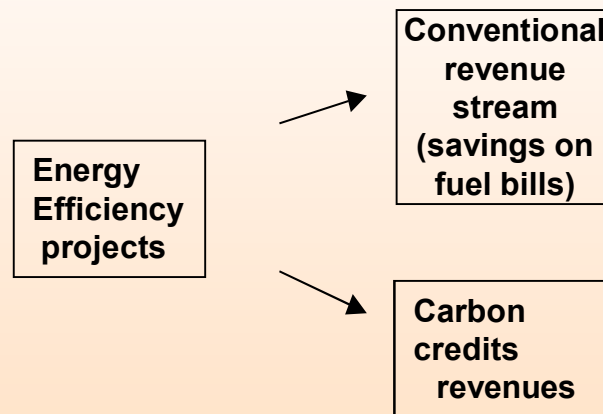
- There have been improvements in the institutional capability to implement policies and programmes, but it has been slower in transition countries; implementation bodies are to be addressed
- The question of adequate resources is vital, including resources for enforcement
- Many NGOs are playing a strong role

Policy Instruments

- Full range of policy instruments being used (information, training, financial incentives, fiscal measures, regulatory measures, RD&D)
- What is most effective is a judicious combination of mandatory measures combined with information or with financial incentives

Policy Instruments 2

- Financing energy efficiency remains a major concern, especially for transition countries
- JI and CDM under Kyoto Protocol opened opportunity, but has failed so far to support many projects



- Emissions trading could prove better

Sectoral Issues

- Buildings has received major focus, particularly in EU. Potential is very high for appliances, DH and building structures
- Also, great potential, for example, in lighting.
- Industrial sector largely handled by EU ETS
- Transport gaining priority, but it still remains difficult to tackle effectively. But, it has to gain in importance, due to its high dependency on fossil fuels

Main conclusions

- While there has been good progress, it is uneven and the gap between EU and non-EU countries is growing.
- The EU is a major driver in promoting energy efficiency and this extends well beyond its border of 27 countries; role for CHP/DH
- It is necessary to integrate energy efficiency into other policy areas (e.g. environment, industry, transport, health, etc.)

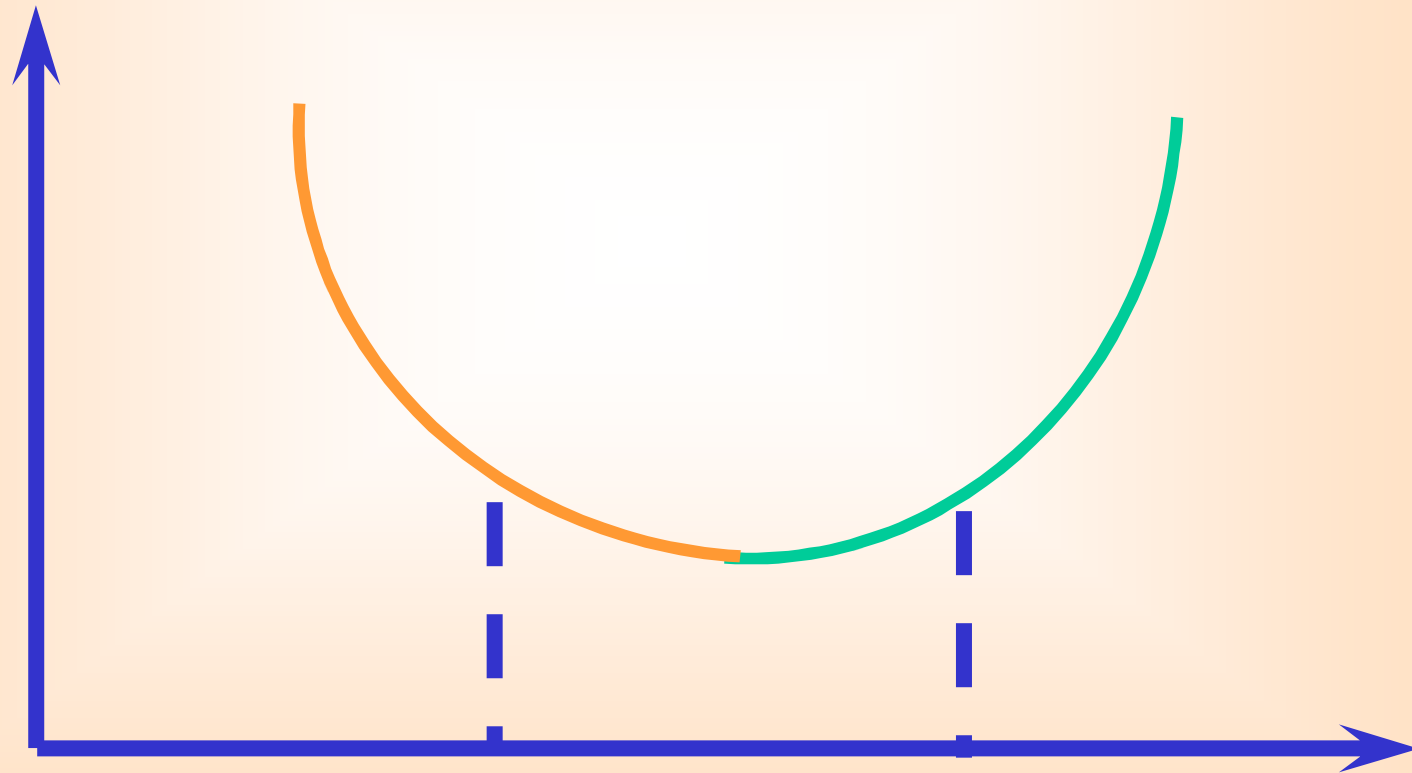
Main Conclusions 2

- The continuing reform of energy prices and the removal of environmentally harmful subsidies should be encouraged
- All countries need to ensure that they have good monitoring and evaluation systems in place
- No country can be complacent. There is considerable scope for more action.
- Priorities, policies and measures have to take into account national circumstances
- International co-operation is very important.

Main Conclusions 3

Market Forces - Governmental Interventions

Governmental
Policies



Market Forces