

CEPS

Global Sectoral Approaches as Part of a Post-2012 Framework

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**A road map
towards
decarbonisation
of the Power
sector**

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1. New challenges for the Power sector : mitigate CO₂ emissions and keep electricity affordable

Energy is facing a new context, much different from the 90's

- **Climate Change** : Power is part of the problem as well as part of the solution : **Electricity accounts for 40% of energy related global emissions, ahead of transport (20%).**
- **The investment boom is both a challenge and an opportunity**
More than 5000 GW (a doubling of current capacity) to be built over the next decades (in developing countries to meet accelerating demand, and in the OECD to replace ageing plants)
- **Mitigating technologies are already available at zero or low overcost, on both the demand (efficient lighting, insulation, heat-pumps...) and the supply side (CO₂ free generation : hydro, nuclear and wind, low emitting technologies like CCGTs and supercritical coal fired plants)**
- **Between 2025 and 2050, future promising technologies should have been deployed (Carbon Capture and Storage, Photovoltaic, Nuclear generation 4, electric vehicles...)**

Decarbonising the mix could make the difference and allow to substitute electricity to fossil-fuels at the end use (heating, plug-in hybrid vehicles...).

2. To achieve this road map, national energy policies are key

Electricity markets are essentially local

Governments play a significant role

National energy Policies are key to reducing CO₂ emissions at an affordable cost

- **Stable policies based on a shared and clear long term vision**
in the power sector, the investment process takes 6 to 15 years and plants life-spans are between 30 and 70 years
- **Policies adapted to the maturity of the technologies**
 - ✓ now to enable massive deployment of available and competitive least emitting technologies on both the demand (labels, norms, standards, prices reflecting total costs including a CO₂ value) and the supply sides (enabling control and command regulation, prices reflecting the total costs of investment and CO₂ value)
 - ✓ beyond the next 15/20 years, to promote RD&D (public private partnership) for next generation technologies (CCS, nuclear Generation 4, Photovoltaic, electric vehicles...)
 - ✓ with a good quality design, for effectiveness.

3. Foster International cooperation on technologies is required

- **To shape a common long term sector vision : for existing technologies (maturity, best practices, most effective regulatory environment, ...) and for those of the future as well**
- **To foster the sharing and transfer of technologies, as existing competitive mitigating technologies are not available in all countries**
 - **For mature technologies**
 - Economic instruments: CDM for large hydro, coal and nuclear projects, energy efficiency programmes...(sectoral or programmatic CDM's?)
 - Regulatory instruments: remove barriers to technology flows, facilitate foreign investment through joint ventures, reduce tariffs on imported and exported goods for mitigating technologies...(SDPAM's?)
 - **For future technologies**
 - Collaborative research at international level
- **Specific approaches for less developed countries : i.e. deployment of existing and competitive low CO₂ technologies backed by international financial support**

4. Preliminary conclusions for the power sector

- **A transnational sectoral agreement will be difficult to achieve**
 - Large spectrum of technologies, no easy « focal » benchmarks
 - Company activities and the energy mix of countries are shaped by national energy policies.
 - The power sector is more fragmented than other sectors.
- **A specific sectoral approach could be explored (sectoral or programmatic CDM's/SDPAM's)**
 - Knowledge sharing on technologies and on energy policies
 - Design of specific economic instruments (sectoral CDMs), and of policy measures to promote sharing of the available technologies
 - For future technologies, promote international collaborative research with developing countries.

The power business (WEC, WBCSD, e8) is involved in many initiatives alongside with governments and NGOs on the road to Copenhagen 2009