

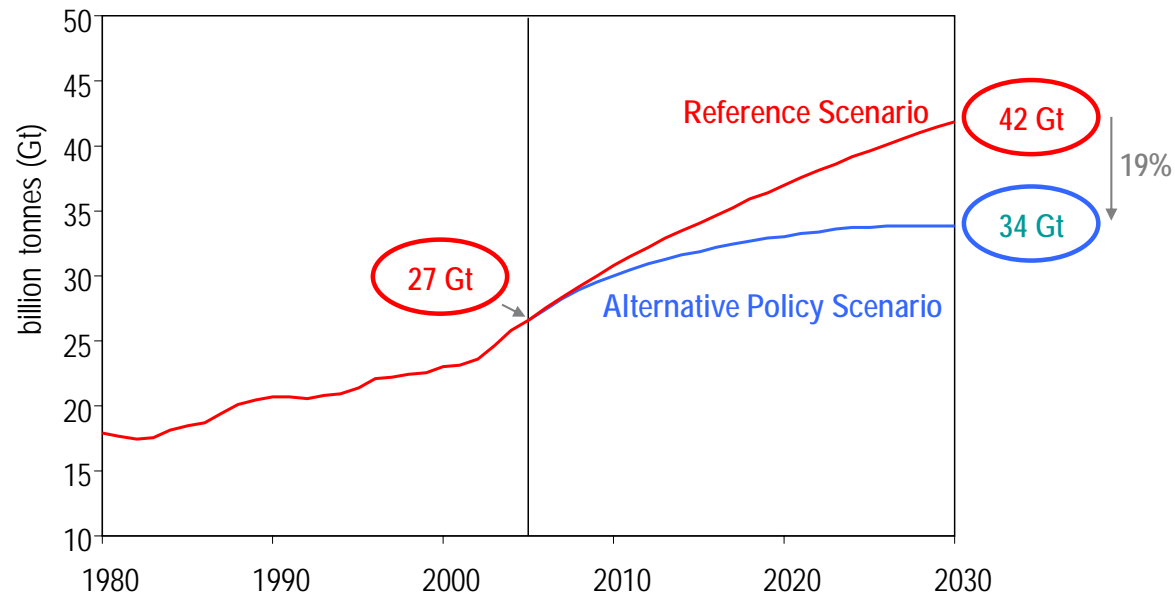
Clean Energy Group
Climate Technology Innovation

Overview of International Climate Process
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Washington, D.C., 28 May 2008

Urgency of reductions

Global CO₂ Emissions from Energy – Reference and Alternative Policy Scenarios





Options to achieve 3+ billion tonnes of CO₂ reduction per year (total need in 2030 is 8 bn t C = 27 bn t of CO₂)

| Technology action | Required for 3.3 billion tonnes per year |
|---|---|
| Option 1. Coal-fired power plant with CO ₂ capture/ storage | 800 x 1 GW plants |
| Option 2. Efficiency of large coal-fired power plants | Raise efficiency of 1,600 plants from 40% to 60% |
| Option 3. Displacing coal by | Nuclear: = 2 x current Wind: = 40 x current Solar: = 700 x current |
| Option 4. Deforestation | Stop all deforestation |
| Option 5. Hydrogen fuel | 1 billion H ₂ cars (CO ₂ -free H ₂) displacing 1 billion conventional 30 mpg (7.84 litres per 100 kms) cars |
| Option 6. Geological storage of CO ₂ | Inject 100 mb/d fluid at reservoir conditions |
| Option 7. Biomass fuels from plantations | 100 x 5x10 ⁶ ha (half of US agricultural area) |
| Option 8. Measures related to energy consumption in existing building stock (heat installation, insulation, appliances, etc.) | 9 times the EPB Directive* if extended to all houses (hypothetical global application) |

* EU buildings (insulation) Directive

Sources:

ExxonMobil

Pacala & Socolow 2004



Technology agenda

- Accelerate the deployment of *existing* low-carbon technologies
- Development and deploying new breakthrough technologies
- Avoiding lock-in of high-carbon technologies in developing countries

Technology and the UNFCCC

- Expert Group on Technology Transfer (EGTT)
- Global Environmental Facility (GEF)
- Clean Development Mechanism (CDM)

Non-UNFCCC climate change processes

- G8+5 process
- Asia-Pacific Partnership on Clean Development and Climate (APP)
- Major Economies Process
- Sectoral approaches (notably Global sectoral industry approaches)

Other options

- Technology-oriented Agreements (TOA)
- Trade and investment

Bali Action Plan

Art. 1 (b) ii

Developing country mitigation “*actions* by *developing countries* supported by *technology*, financing and capacity building in a measurable, reportable and verifiable manner”.

Bali Action Plan (cont'd)

Art. 1(b) iv

Cooperative sectoral approaches and sector-specific actions, in order to enhance implementation of Article 4, paragraph 1(c), of the Convention.

UNFCCC 4 (1) c: Promote and cooperate in the development, application and diffusion, including transfer, of technologies ...

Bali Action Plan (cont'd)

- Art. 1(d) Enhanced action on technology development and transfer to support action on mitigation (and adaptation) including
- iii) cooperation on research and development of current, new and innovative technology, including win-win solutions;
 - iv) the effectiveness of mechanisms and tools for technology cooperation in specific sectors

Bali Action Plan (cont'd)

- Art. 1(e) Enhanced action on the provision of *financial resources* and investment to support action on *technology cooperation*, including :
- i) Improved access to ... financial resources ... and the provision of new and additional resources, including official and concessional funding for developing countries;
 - (v) Mobilization of public- and private-sector funding and investment, including facilitation of carbon-friendly investment choices;

Issue - Developing countries want access to technology

- Emergent funds and mandates
- Limitations through commercial and “competitiveness” concerns;
- R&D cooperation in basic science
- How to prioritise?
 - costs factors, IPR, technology risks, raw material and human resource constraints, transaction costs
 - technologies with major reduction potentials (“picking winners”)? How many technologies can be advanced at the same

Real issue is missing

Trade and investment context; how
multinational companies “transfer”
technology; global nature of business

Low-Carbon Technologies in the Post-Bali Period: Accelerating their Development and Deployment

ECP Report No 4

http://shop.ceps.eu/BookDetail.php?item_id=1565