Clean Energy Technology Investments and the Role of Emerging Economies

Mr. Peter Cunz

Swiss Federal Office of Energy

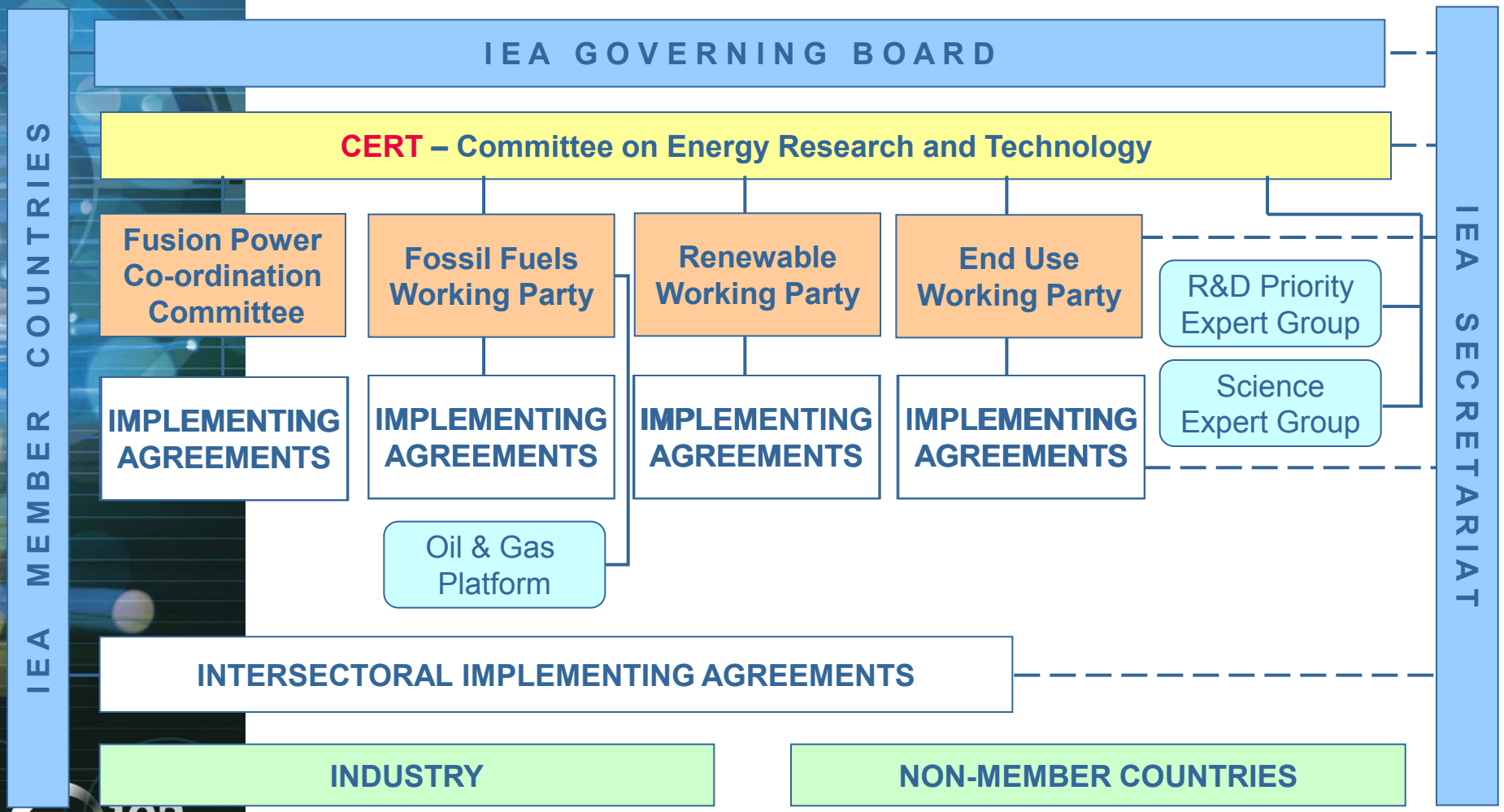
Chair, Committee on Energy Research and Technology (CERT)

iea Energy Technology Network

CERT Work Programme

- Energy Technology Network
  - 4 Working Parties, 3 expert groups, 42 Implementing Agreements
- Energy Technology Collaboration/Outreach (with SGD)
  - Network of Expertise in Energy Technologies (NEET)
  - International Low-Carbon Energy Technology Platform
- RD&D Policies and Assessment
  - In-depth country reviews
  - RD&D policy innovations
- Quantitative and Qualitative Analysis of Priority Energy Technologies and Policies. Examples:
  - CCS, smart grids, transportation, buildings
  - Technology Roadmaps
- Energy Trends, Indicators and Scenarios
  - *Energy Technology Perspectives 2012*
  - Modeling and indicators

The IEA Technology Network



The IEA is needed!

- The IEA has a worldwide recognized position as reference. It serves as hub for collaboration.
- However, the energy consumption has shifted more and more to non-IEA areas. 90% of the world increase of energy consumption happens in non-IEA countries.
- Within the IEA Technology Network the collaboration beyond OECD has been strongly enforced. Scientists are used to this due to their common ground of interest with no relevance to country borders.

iea Energy Technology Network

Business as usual: some facts 1

- **Residential and commercial buildings** account for 1/3 of global final energy use, and in a similar range are the energy-related CO_2 emissions.
  This will more than double by 2050, mainly due to rising population.
- **Transport** accounts for 20% of world's primary energy use and 25% of global emissions.
  This will more than double by 2050.

Business as usual: some facts 2

- **Industry** accounts for 1/3 of global final energy use and almost 40% of energy-related CO_2 emissions.
- OECD represents now 1/3 of current global industrial CO_2 emissions.
  By 2050 it has dropped to only 20%,
  and the non-OECD countries will account for 80% of global industrial CO_2 emissions.

Business as usual: some facts 3

- Today 50% of the world's population lives in urban environments. In 2030 it will be 60%.
- They consume 2/3 of total primary energy, of which 60% in buildings.
- In OECD cities the CO_2 emissions remain constant until 2030 but will double in non-OECD cities.
- China is the world's largest energy consumer. It's responsibility to participate in activities for the world's well-being is obvious.

Need for investment

- US$ 19 trillion will be invested until 2020. This is the 6° Celsius scenario (6DS) or business as usual.
- In order to reach the 2DS an additional investment of US$ 5 trillion is needed, but the resulting fuel savings create financial savings of about the same amount.
- Alone for China the investment requirements are higher than for all OECD member countries combined.

Investment facts 1

- Large investments have to be attracted. However, the main purpose of investments is to make a profit.
- Rules for Green Business are the same as for other business.
- We have to create “bankable” opportunities where institutional and private Investors see a possible benefit.

Investment facts 2

- Investors tend not to invest in early stage technologies nor in small projects because of the inherent risks and high transaction costs.
- There is a pressing need for more clarity and predictability over support schemes life cycle and mechanisms. There is great uncertainty over financial support schemes.
- To impose higher costs for CO_2 emissions in some regions and not in others goes against competitiveness.

Conclusions for policy

- The biggest challenge to a low-carbon future is agreement on how to share the uneven costs and benefits of clean technology across generations and countries.
- Governments must address these distributional issues. An international harmonisation in policy is required.
- The OECD and large non-OECD Economies should hold hands in the attempt to safeguard the environment of next generations.

Conclusions for technology

- The view of Industry and the requirements of Finance have to be understood and communicated; the collaboration between Industry, Finance and Policy has to be improved.
- Collaborative RD&D and technology know-how have to be enforced in large non-OECD economies in order to share the dominance and responsibilities with the OECD.

Invitation

- The CERT invites China to enforce its RD&D collaboration with the IEA Technology Network.
- The CERT looks forward to a time where China and other large non-OECD countries take a leading role in programmes of international technology collaboration.

➢ www.iea.org/techno/index.asp