

Background, Objectives and Expected Outcome

**Neil Hirst, Director
Energy Technology Office
International Energy Agency**

Outline

- **Motivation for workshop**
 - ◆ IEA might take ETP08 roadmaps forward as part of the G8 process
- **Objectives and agenda**
 - ◆ Objective, sessions, participants
- **Expected outcome**
 - ◆ Improved overview of existing work - inventory
 - ◆ Better understanding on effective use and key elements to further develop roadmaps
 - ◆ Report to CERT and Member Countries



Background and motivation

A need to accelerate effort!

- **Energy Technology Perspectives 2008:**
 - ◆ A pressing need to accelerate the development of advanced energy technologies
 - ◆ Closer collaboration among countries necessary on energy RD&D.
 - ◆ Roadmaps for 17 key technologies developed

- **IEA asked to further develop technology roadmaps as a mean to identify where international collaboration can accelerate energy technology development**

IEA invited to take a lead

- In Davos, Japanese Prime Minister Fukuda proposed *“to formulate an international framework through which we can collaborate closely with international agencies such as the IEA to accelerate technology development and share the fruits of such efforts”*.
- Proposal to have technology roadmaps as part of this initiative was further discussed in Chiba.
- Proposal supported by G8 countries – including US, Japan, Australia, Canada, EU.

Chiba recommendations

- *” It was recognized by several participants that sharing technology roadmaps for major energy technologies formulated by the IEA and several countries is useful, but it was also pointed out that not all technologies being considered in existing roadmaps will be applicable to all national economic or energy circumstances.*
- *There was general support for the proposal made by some participants that the work being done by IEA could be carried forward to take inventories of current national technology RD&D, promote them, and identify potential areas for international cooperation, although the need to further clarify the contents of roadmaps was also pointed out by several participants.”*

Taking forward the roadmaps

- Objective is to use the analytical and convening power of the IEA
- To assist in promoting a global strategic coordination effort on global energy technology RD&D
- And results in a coherent and consistent long-term RD&D investment strategy across energy technologies.



Working closely with existing networks

IEA would:

- ◆ draw on expertise of its own extensive international technology network
 - ◆ work closely with other leading collaborations such as APP, CSLF, Biofuels Partnership, IPHE, GNEP
 - ◆ obtain the guidance of national experts of all participating countries.
 - ◆ work closely with industry e.g. with our CTO group.
-
- The project is envisioned to report to participating Governments at senior official or Ministerial level



Workshop objective

Workshop objective

- The term technology roadmap has several meanings
- The overall objective is to improve insight and understanding of how best to use energy technology roadmaps
- As a tool to advance international technology collaboration on clean energy technology development.

- **This workshop is a first step to discuss with national experts, industry and academia**
 - ◆ **the different approaches**
 - ◆ **the lessons learned, and**
 - ◆ **which could be most appropriate for the IEA.**

Four sessions

- **Workshop structured around four sessions.**
 1. Key technology portfolio roadmaps
 2. Sectoral and technology roadmaps
 3. International roadmaps
 4. Implementation of roadmaps

- **Round up discussion**

Session 1:

Key Technology Portfolio Roadmaps

- What main similarities/differences can be observed in these roadmaps regarding objectives, approaches and findings?
- What main objectives should be included in technology roadmaps - aside from substantial GHG reductions?
- What can be gained from the development and implementation of technology roadmaps?
- What is the proper balance between a diverse technology RD&D portfolio and a focus on key technologies with high potential to achieve substantial reduction of GHG emissions?

Session 2:

Sectoral and Technology Roadmaps

- What benefits can industry/sector gain from developing technology roadmaps?
- Who should roadmaps target (e.g. government, academia, industry or joint efforts) and what types of measures and actions could be recommended?
- How can roadmaps address the role and concerns of industry and finance in particular in light of the need to accelerate private investments?

Session 3: International Roadmaps

- What are the special challenges in developing and implementing *international* roadmaps?
- How can *international* roadmaps best accelerate technology development while keeping the balance of competition and cooperation?
- Which technology development phases could be targeted (science, R&D, demonstration, commercialization, diffusion, technology transfer)?
- What actors are particularly important to engage in an international roadmap making process, e.g. government agencies, industry experts, academia?

Session 4:

Implementation of Roadmaps

- How are roadmaps used? What are their strengths/limitations?
- How is implementation and progress review best carried out? Who should be involved and which main challenges can be identified?
- What role should the industry and financial community play in developing and implementing roadmaps and when should they become involved?

Round Table Discussion

- **Can formulating long-term technology roadmaps help foster technology development globally for technologies in key sectors? If so, how? If not, why not?**
- **Can international cooperation and collaboration amongst countries be useful in developing and implementing these? If so, how? If not, why not?**
- **In which focus areas (phases and technologies) can technology roadmaps and further international collaboration enhance the overall global effort?**

Round Table Discussion

- **How can technology roadmaps be developed, used and coordinated internationally and how could IEA play a constructive role?**
- **Who are key players to involve in international technology roadmaps, and how can the IEA most effectively build on existing efforts and interact with existing international efforts?**
- **How should developing countries be engaged? How should technology transfer be addressed?**

Expected outcome and next steps

Output

- **Inventory to provide better overview:**
 - ◆ Existing key technology roadmaps
 - ◆ Plans to expand with ongoing roadmap exercises
- **Better understanding of roadmaps**
 - ◆ closer to consensus on effective use and key elements to be included
 - ◆ better understanding of IEA's possible role
- **Summary paper for your input and review**
- **Report to CERT and Member Countries**