



Energy Technology Perspectives 2008

Translating the ETP 2006 scenarios into technology R&D recommendations

Jeppe Bjerg

Analyst

International Energy Agency

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Content

- **ETP 2008 - framework and content**
- **Workshop – objective and expected outcomes**
- **Next steps**



The Framework

- Response to G8 request for advice on alternative energy scenarios & strategies
- Complements the *World Energy Outlook* – close cooperation with LTO
- Guided by CERT and in close cooperation with the IEA Working Parties and Implementing Agreements
- Building on the Energy Technology Perspectives project
- Supported by many member countries



Energy Technology Perspectives Publication 2008

- **Part of G8-deliverables – Due February 2008**
- **Use the ETP 2006 scenarios (no new scenarios)**
- **How to get there:**
 - ◆ **Energy RD&D policies**
 - ◆ **Technology learning**
 - ◆ **Technology transitions (2015 and 2030 results)**
 - ◆ **Investment needs and policy cost**
 - ◆ **Energy and CO₂ emission indicators**
- **Regional analysis**
- **Coordinator: Dolf Gielen**



Energy Technology Perspectives Publication 2008 (contd.)

- **Special technology topic chapters (proposal):**
 - ◆ **Wind energy**
 - ◆ **Bioenergy**
 - ◆ **CCS**
 - ◆ **Hydrogen**
 - ◆ **Transport**
 - ◆ **Buildings/Appliances**
 - ◆ **Industry**
 - ◆ **Methane emissions**
 - ◆ **Oil sands ?**



Regional Analysis

- **Dolf Gielen is leading this task**
- **More regional granularity**
- **Special focus on G8 + 5**
- **Special attention for China**



Energy RD&D Policy

- **Jeppé Bjerg is leading this task**
- **1st workshop 15 & 16 February**
- **Backcasting & projections**
- **Focus on:**
 - ◆ **Right portofolio**
 - ◆ **Right funding level**
 - ◆ **Role of government and private sector**



Technology Learning and deployment policies

- Cecilia Tam is leading this task
- 1st workshop in May
- Match learning extrapolations and bottom-up engineering projections
- Consider external effects
- Focus on:
 - ◆ Role government
 - ◆ Financial support needs coming decades
 - ◆ Benefits of international cooperation



Technology Transitions

- Roadmaps: what technology targets should be met by 2015 and 2030
 - ◆ Efficiencies
 - ◆ Costs
 - ◆ Installed capacity
- What determines the rate of introduction of new technology
- What is the appropriate role for governments and companies in technology development (R&D, infrastructure development etc.)
- What international cooperation is needed



Investment Needs and Policy Cost

- Michael Taylor is leading this task
- Add more detail to the ETP2006 cost discussion
- Focus on:
 - ◆ What are the cost by region/country?
 - ◆ Who has the cost, who has the benefits?
 - ◆ Weigh short-term cost, long-term benefits



Technology Chapters

- **Wind (Debra Justus)**
 - ◆ Intermittency/matching of supply and demand: how much wind is feasible in the electricity system
 - ◆ Long-range electricity transportation feasible?

- **Bioenergy (Michael Taylor and Ralph Sims)**
 - ◆ Update technology outlook & biomass potentials
 - ◆ ETP modeling study of competing biomass use for power generation, heat, transportation fuels and materials
 - ◆ Special attention for second generation biofuels



Technology Chapters (contd.)

- **CO₂ Capture and Storage: A Key Abatement Option (Kamel Bennaceur)**
 - ◆ Technology update and lessons from pilot/demonstration projects
 - ◆ Focus on retrofit and capture-ready plants
 - ◆ Industry & transformation sector CCS opportunities
- **Hydrogen Infrastructure (Bob Dixon and Peter Schniering)**
 - ◆ Hydrogen infrastructure issues deserve more attention
 - ◆ Competition with plug-in hybrids and biofuels deserves more attention
 - ◆ 1st workshop Detroit April 2-4
 - ◆ Further workshops in Beijing and Paris



Workshop

**– objective and expected
outcomes**



Workshop objective

- ETP2006 provided long term global scenarios.
- ETP 2008 will provide more detailed analysis of the need for near term policies
- A special chapter will focus on energy RD&D policies needed
- This workshop is an important first input and guidance to this analysis.
- Insights and experience from experts in government, industry, academia and international organisations



What we hope to learn more about?

- **Tools applied:**
 - ◆ Which tools and approaches are used to get from long term scenarios to concrete energy technology RD&D priorities?

- **Technology findings:**
 - ◆ What are the main findings from using scenarios for R&D priority setting?
 - ◆ Which are the key technologies?
 - ◆ Which technology development targets should be met to meet the scenario outcomes (time-wise, cost-wise, capacity-wise)?

- **Policy findings:**
 - ◆ Which are the investments needed in R&D, demonstration and deployment?
 - ◆ Which are the technology policies recommended?
 - ◆ What is the role of Government and industry?



Thursday

Scenarios and R&D priority setting

- **Session 1**
Global energy technology scenarios – key technologies and policies
- **Session 2**
Approaches to R&D priority setting
- **Session 3**
R&D priorities and technology policies



Friday

RD&D priorities and investment needs

- **Session 4 and 5: Key electricity technologies**
 - ◆ **CCS**
 - ◆ **Nuclear**
 - ◆ **Biomass**
 - ◆ **Grid integration**
 - ◆ **Wind turbines**
 - ◆ **Solar PV**

- **Session 6: Roundtable discussion**



Next Steps



- **A workshop report and CD-Rom**
- **Drafting of chapter on RD&D priorities and policies**
- **Group invited to participate in review**
- **Analysis and chapter finished December 2007**
- **Workshops on RD&D priorities and needs for transport and buildings**
- **More work on trends in RD&D in IEA countries**



Thank You

Jeppe.Bjerg@iea.org