OECD/IEA Case Study on Innovation in Energy Technology: Introduction and Overview

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What is the OECD (Organisation for Economic Co-operation and Development)?

- 30 Member countries; active relationships with some 70 other countries.
- Shared commitment to democratic government & market economy
- Outputs include policy analysis, statistics, peer reviews, international agreements
- 2300 staff in Paris
- Science, technology and industry one of 14 directorates
- Committee for Scientific and technological policy (CSTP) and its working party on Innovation and Technology Policy (TIP)

www.oecd.org/sti
Innovation in Energy Technology: Context

- National innovation systems—long history of work within OECD on NIS approach and policy implications (macro-economic level).
- Sectoral innovation systems—recognition that NIS and resulting policy needs vary across technological fields and sectors (cross-cutting vs. specific policies).
- TIP Case studies on Innovation (launched June 2002)
  - Pharmaceutical biotechnology
  - Knowledge-intensive service activities (KISA)
  - Energy (in collaboration with the IEA Committee on Energy Research and Technology).
Study Objectives

● Examine energy innovation system
  – Drivers of innovation (market demand, regulation, etc.)
  – Knowledge creation, diffusion exploitation
    • Roles of public and private sectors
    • Multinationals, SMEs, technology-based startups
  – Public-private partnerships, IPR
  – Globalisation
  – Systemic influences (lock-ins, regulation)

● Evaluate its effectiveness
  – Economic benefits
  – Environmental benefits
  – Security benefits

● Delineate policy implications for OECD governments
Methodology

- **Technology focus**
  - Emerging technology + historical case study
  - Desire to inform policy, but need to draw lessons
  - Fuel cells as common technology
  - Other technologies to complement

- **Country studies**
  - Prepared by national experts
  - Examine national innovation system related to fuel cells (and other field of choice)

- **Enhance international comparability**
  - Bibliometric study—provide international comparison and basis for further investigation
  - Overview of energy supply, demand & R&D patterns, drawing on OECD and IEA statistics and analysis
## Participants and Technologies

<table>
<thead>
<tr>
<th>Country</th>
<th>Team Leader(s)</th>
<th>Technologies</th>
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<tbody>
<tr>
<td>US</td>
<td>Inja Paik (chair): John Nail, Patrick Davis, Mike Curtis</td>
<td>Fuel cells, Advanced turbine</td>
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<td>Canada</td>
<td>A. Desgagne &amp; G. MacDonell</td>
<td>Fuel cells</td>
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<tr>
<td>France</td>
<td>Bernard Bourgeois</td>
<td>Fuel cells, Oil &amp; gas</td>
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<tr>
<td>Germany</td>
<td>Jürgen Wengel</td>
<td>Fuel cells</td>
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<tr>
<td>Italy</td>
<td>Oronzo Tampone</td>
<td>Fuel cells</td>
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<td>Japan</td>
<td>Akira Maeda</td>
<td>Fuel cells</td>
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<td>Korea</td>
<td>Sung-Chul Shin</td>
<td>Fuel cells, Renewables</td>
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<tr>
<td>Norway</td>
<td>Helge Godø, A. Mikkelsen, Jon Moxnes Steineke</td>
<td>Fuel cells, Oil &amp; gas</td>
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<td>UK</td>
<td>Roy Williamson, Barbara Hammond</td>
<td>Fuel cells, Renewables</td>
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<tr>
<td>OECD &amp; IEA</td>
<td>J. Sheehan, Y. Fukasaku, E Hassan, M. Woodruff</td>
<td>Bibliometrics, Industry overview</td>
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## Timetable

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Date</th>
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<tr>
<td><strong>1st meeting of energy group:</strong></td>
<td>Preliminary discussion of country interests, technologies, methodology.</td>
<td>June 2002</td>
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<td><strong>2nd meeting:</strong></td>
<td>Agree on scope, approach; review statistics; select technologies.</td>
<td>October 2002</td>
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<td><strong>3rd meeting:</strong></td>
<td>Progress reports, new members, agreement on next steps</td>
<td>March 2003</td>
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<td>Washington Conference</td>
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<td>September 2003</td>
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<td><strong>4th meeting:</strong></td>
<td>Discuss results of conference, plan final report.</td>
<td>October 2003</td>
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<td><strong>Draft final report</strong> on energy case study</td>
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<td>December 2003</td>
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<td><strong>Synthesis report</strong> on 3 case studies</td>
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<td>Mid 2004</td>
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Remainder of afternoon session

- Presentations of OECD & IEA contributions
  - Madeline Woodruff & Yukiko Fukasaku, Trends in energy supply, demand, R&D and innovation
  - Emmanuel Hassan, Bibliometric study

- Energy innovation in the US
  - Mike Curtis, Advanced turbine system
  - John Nail, Stationary fuel cell applications
  - Patrick Davis, Automotive fuel cell applications

- First international comparisons
  - Jürgen Wengel, Germany
  - Glenn MacDonell, Canada
  - Akira Maeda, Japan