



International  
Energy Agency

# Accelerating Energy Innovation: Successful Strategies for RD&D

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# IEA programme of work

## Where are we today?

- Global Gaps analysis of low-carbon energy RD&D spending
- In-depth country reviews

## Where do we need to be in 2030? 2050?

- 2030: World Energy Outlook
- 2050: Energy Technology Perspectives

## How do we get there?

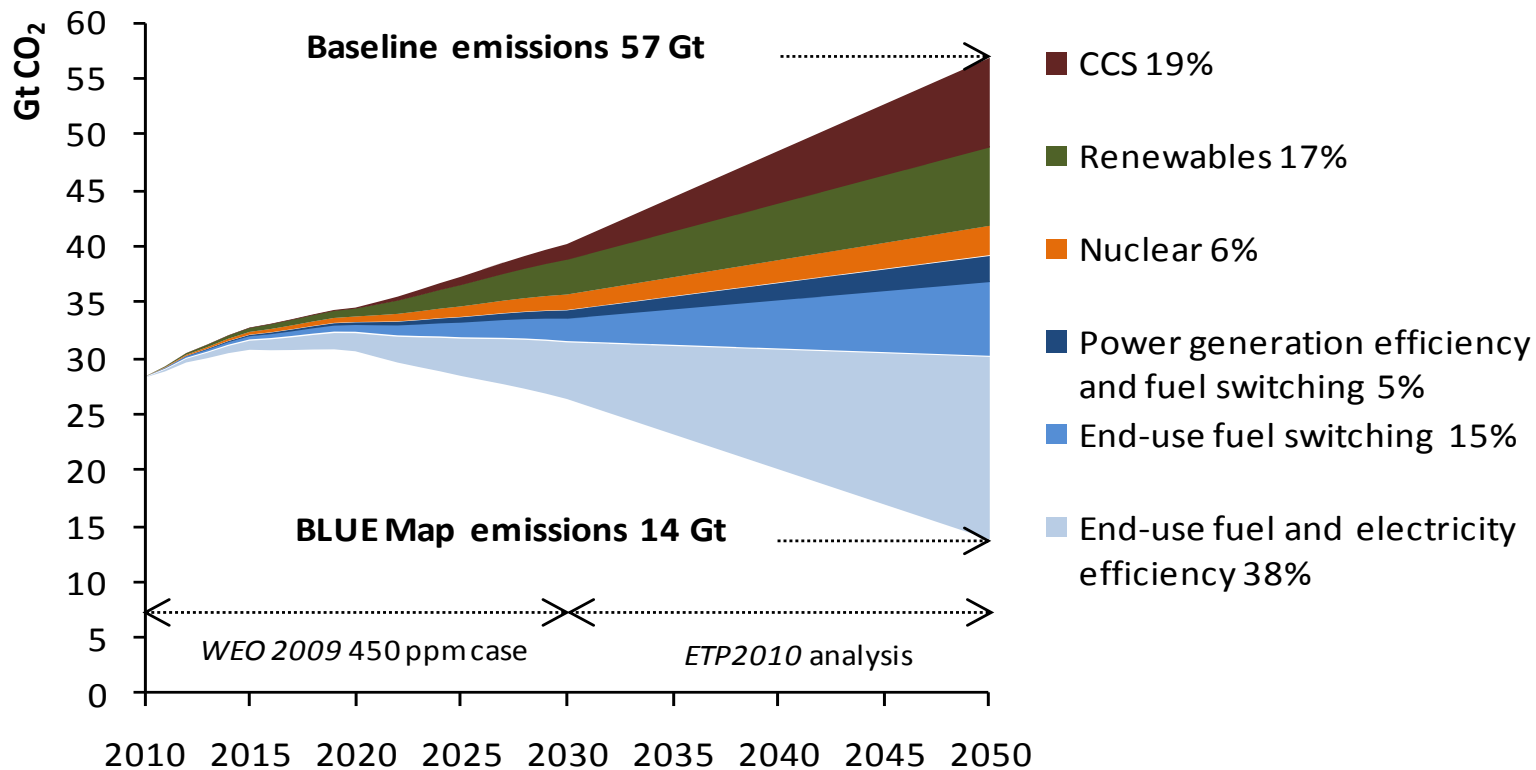
- Global Energy Technology Network (Implementing Agreements, CERT, Working Parties and Experts' Groups)
- Energy technology roadmaps
- Low-carbon energy technology platform
- **Accelerating energy innovation project on technology RD&D**

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Scenarios &  
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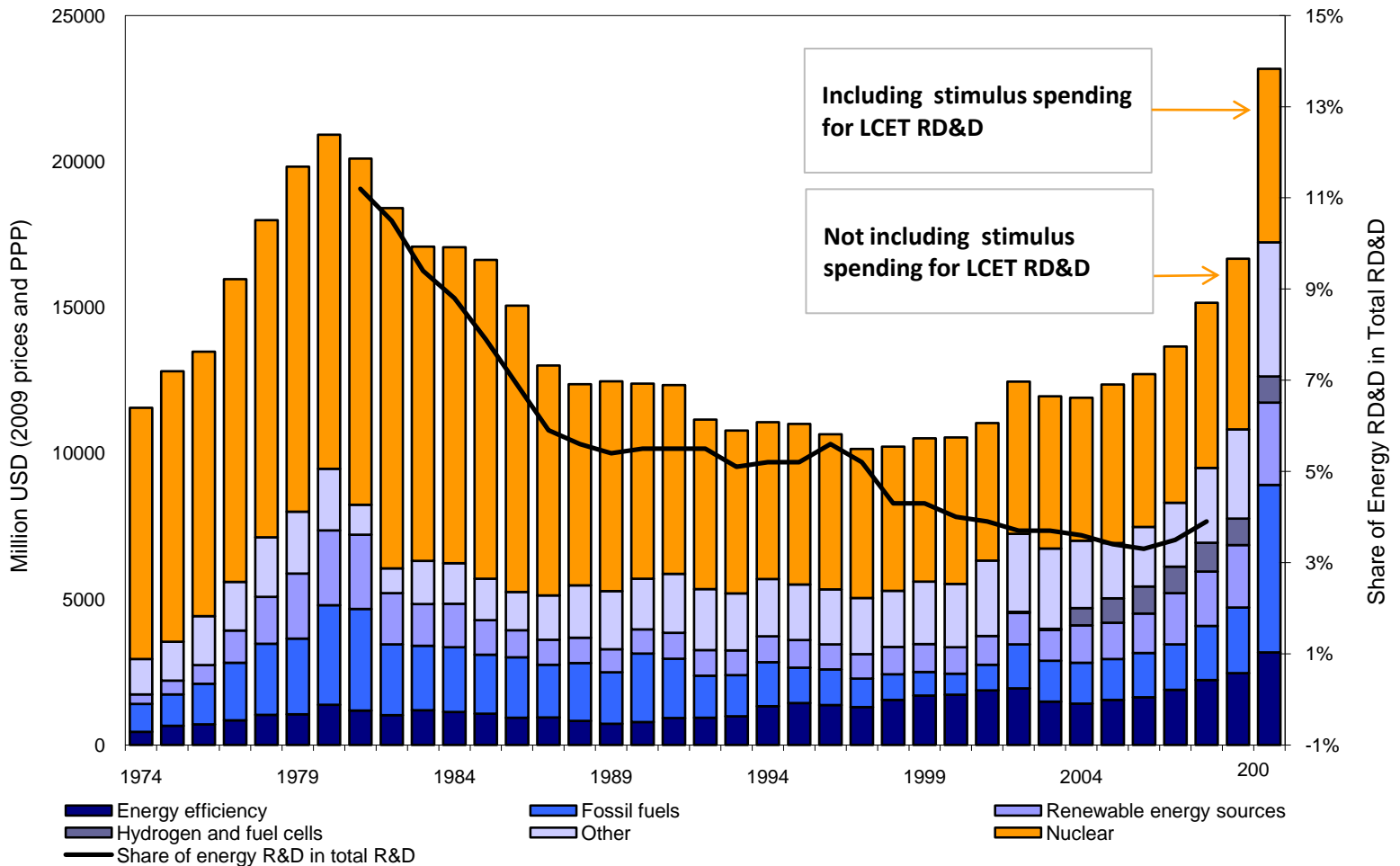


# A portfolio of technologies is needed



*Energy efficiency is the first priority*

# Government spending on clean energy RD&D: technology push

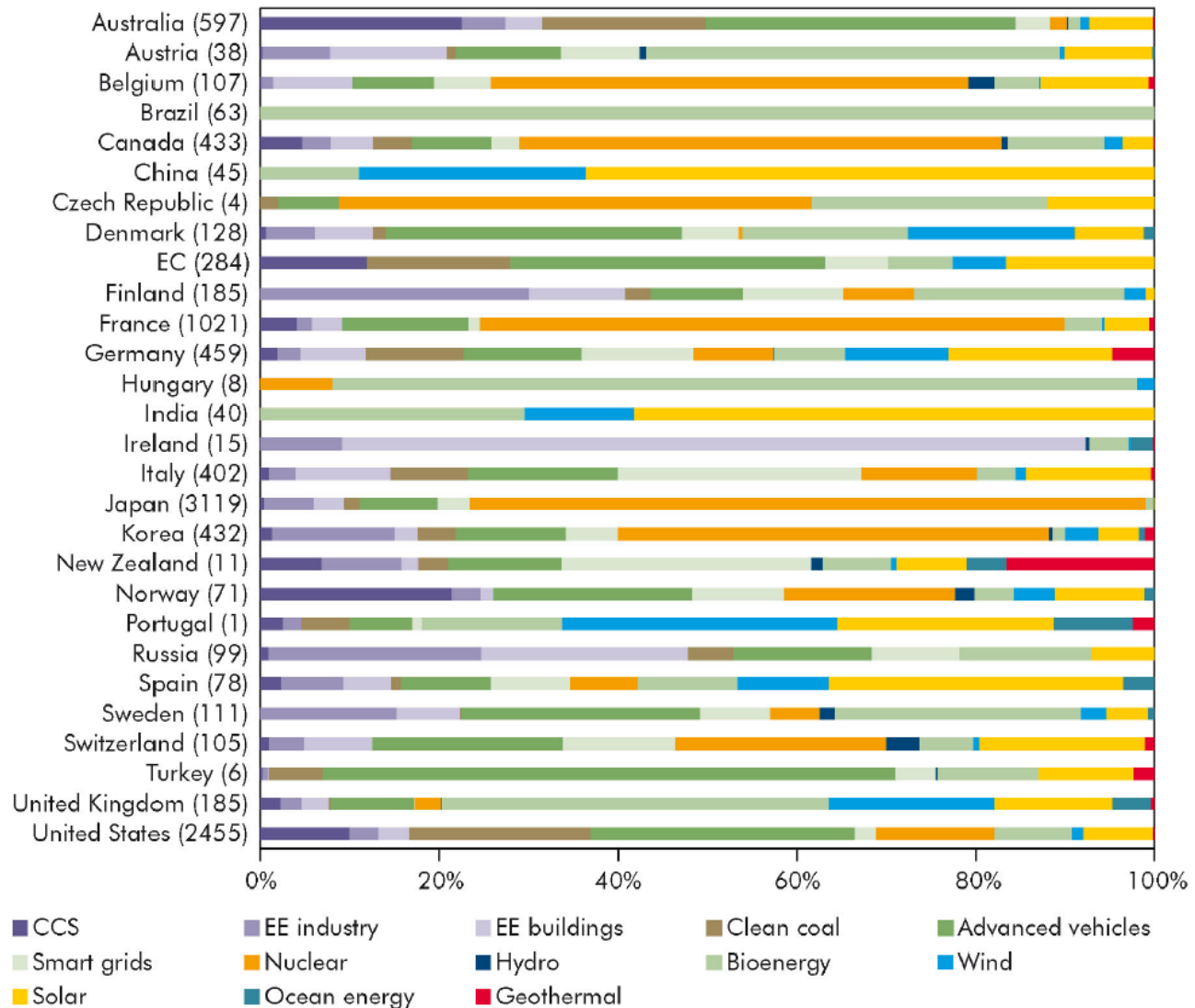


*Stimulus packages are a one-time funding increase; how to achieve sustained higher levels of investment?*



# Countries investing in a wide variety of technologies

Clean energy RD&D by country (million 2008 USD)

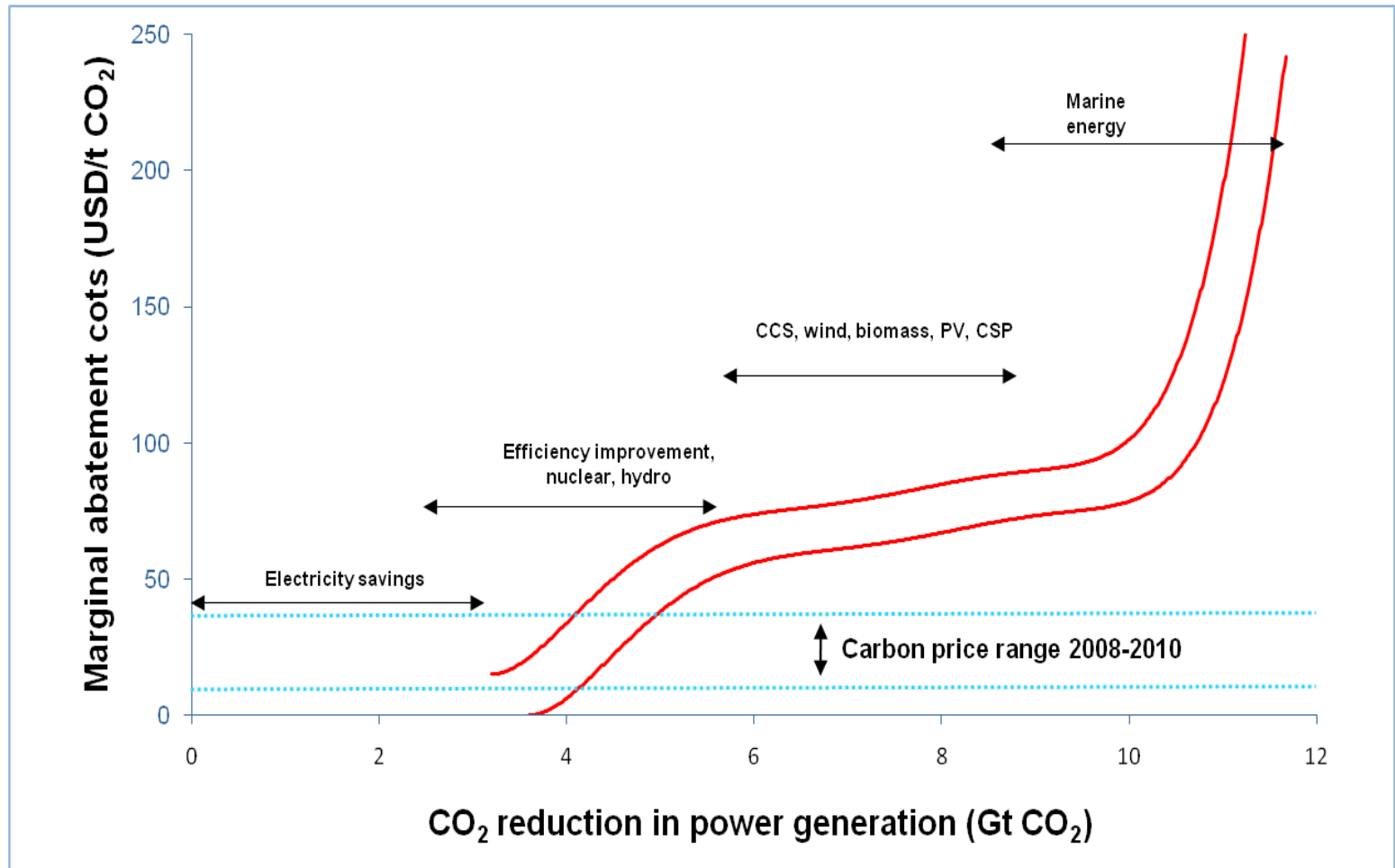


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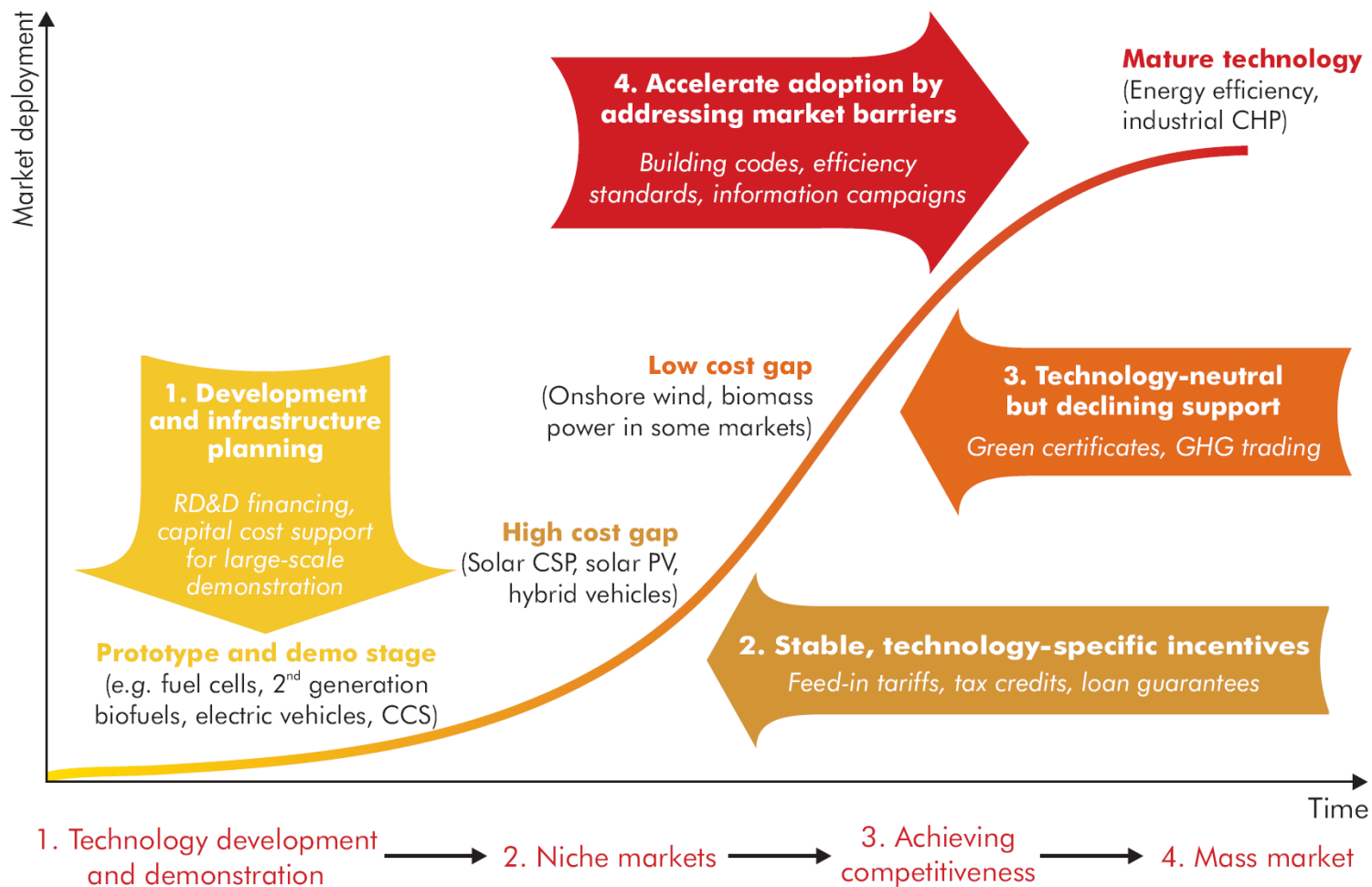


# The importance of technology policy



*Many low carbon technologies will not be competitive in the next decade, even with a price on carbon*

# Smart policies can accelerate clean energy uptake today



*A strategic approach is needed*

# Steps to successful energy RD&D

## ■ Develop a comprehensive national energy technology strategy

- Establish a baseline - where is the country today?
- Forecast future growth pathways
- Prioritise energy technology investments through resource mapping, technology assessments, roadmaps
- Engage private sector in planning
- Ensure flexibility through portfolio approach

## ■ Implementation

- Technology push: government spending on RD&D
- Market pull: mandates or incentives to drive private investment
- Fiscal and other measures, combined approaches
- Develop institutions and coordination mechanisms

## ■ Monitor and evaluate impacts

- Develop indicators and assessment tools
- Collect data and report regularly
- Modify/terminate programmes to incorporate lessons learned



# Project timeline

- April – December 2010
  - Create an informal group of advisors; host expert workshops
    - ◆ First workshop 29-30 June at IEA
    - ◆ Next workshop early 2011 to share preliminary findings
  - Review IEA *In-Depth Reviews*, identify tools to assess 'return on investment' in energy RD&D spending, identify energy RD&D evaluation methods
  - Select countries for further analysis, follow with site visit, roundtables and meetings
    - ◆ Site visits conducted: Norway, Sweden, Denmark, Finland
    - ◆ Planned visits: Netherlands, US, EU, Brazil, UK, France, China, India, Korea, Japan...
- Publish study in June 2011
- Include updates in ETP 2012

# Outcomes

- Identify **successful approaches** to energy technology RD&D planning, including tools, strategies and approaches
- Provide **case studies of successful programmes/institutions/policies** that optimise technology support
- Identify **indicators/evaluation tools** that measure the impacts of energy RD&D investment
- Disseminate information on **lessons learned** from deployment programs and policies in different countries

[www.iea.org/about/best\\_practices.asp](http://www.iea.org/about/best_practices.asp)

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# Questions for country visit

## Development of a National Energy Strategy

- What policy drivers have affected the evolution of your energy technology RD&D policies and strategies?
- What approaches have been used to set RD&D priorities?
- Have industry and other stakeholders been involved in the setting of priorities? How have they engaged?
- How are targets and goals of RD&D programs and criteria for individual project selection formulated?

## Implementation

- What mechanisms/policy approaches are used to accelerate the introduction of new energy technologies to the market?
- Were there any new institutions created to achieve energy technology RD&D goals in the last 5/10 years?
- Are there examples of successful international technology collaboration? How does the country decide which types of international collaboration offer value?

## Monitoring & evaluation

- Does the country assess the “cost effectiveness” or “return on investment” of energy RD&D measures? What methodology is used?
- What types of evaluation methodologies do you use to monitor progress of RD&D programs? Which criteria or indicators are used?
- Do the results of the measurements feed back into planning and energy RD&D decision making?