



# Proposed Activities on Environmental Issues

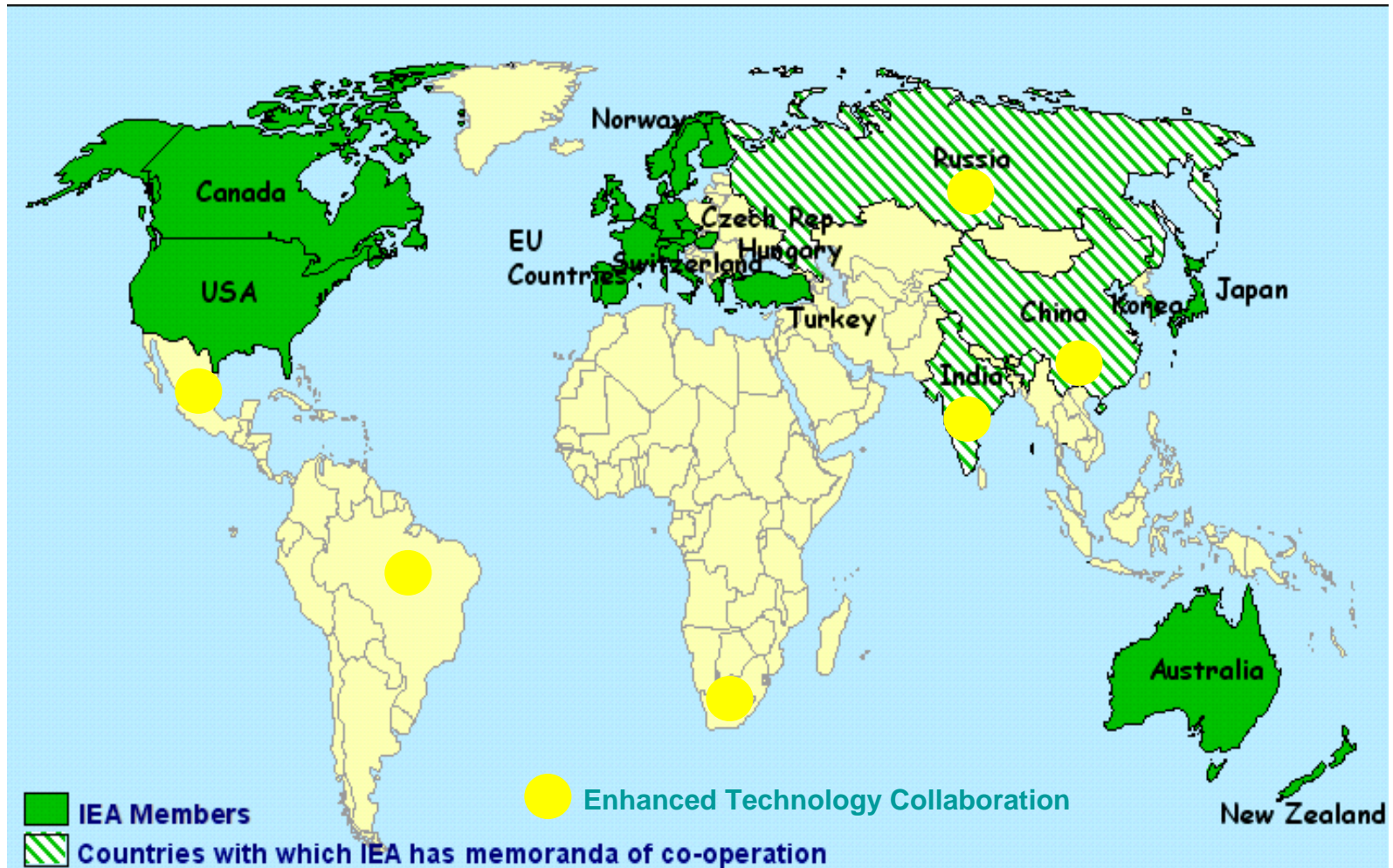
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Chair of the Executive Committee, IEA-OES, presenting on behalf of Ms. Melanie Nadeau, NRCan, Canadian Alternate Member, IEA-OES  
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# International Energy Agency (IEA)

- IEA, an Autonomous Agency linked with OECD, is the Energy Forum and Acts as Energy Policy Advisor to 26 Industrialized Countries
- Implementing Agreements Offer Framework of Collaboration using Pooled Resources & Shared Cost

# IEA Member Countries and Enhancing Technology Collaboration



# Participating Countries

Launch 2001	Denmark, Portugal, United Kingdom
2002	Ireland, Japan
2003	Canada, European Commission
2005	USA
2006	Belgium
2007	Germany, Norway, and Mexico
Observers	Italy, Korea, New Zealand, Brazil, Australia, China, Russia, Spain

# Environmental Impacts Associated with Ocean Renewable Energy Devices

- Ecological energy balances and flows
  - Hydraulic alterations
- Interactions with marine life and seabirds
  - Behaviourial changes in wildlife
  - Food web impacts
  - Diving birds and mammals, strike probability, cavitation and pressure changes
  - Creating or altering natural habitats, invasive species
  - Electromagnetic and electrical effects
- Atmospheric and oceanic emissions
  - Temperature variations
  - Water quality, low concentrations of DO
  - Bottom scour
  - Greenhouse gases used with fuels
  - Emissions of combusted or vented gases
  - Wastes



# Environmental Impacts (cont'd)

- Interactions with coastal sedimentary processes
  - Shoreline disturbances
  - Loss of natural habitats and conservation habitats
  - Erosion and sedimentation
  - Sediment contamination
- Visual appearance and noise
  - Underwater noise, light and other nuances
  - Above-water noise and visual/landscape impact
- Potential conflicts with other uses of sea space
  - Cultural and historical impacts
  - Recreational resources
  - Navigation interference



# International Regulatory Regimes

- Numerous jurisdictions have recognized the need for addressing the potential environmental impacts related to ocean energy projects
  - In the US, the Federal Energy Regulatory Commission (FERC) oversees the permitting process for all energy projects
  - Ocean renewable energy project permitting in the UK is being developed in coordination with a government funded demonstration scheme
  - Renewable energy projects in Denmark are handled by a single agency within the national government
  - The Canadian federal government has jurisdiction over activities from the low water mark seaward, including ocean renewable energy project development. The provinces have jurisdiction on land from the low water mark landward as well as most bays and estuaries, including the Bay of Fundy
  - Other member countries???

# The Strategic Objectives of IEA-OES Include:

- Supporting International Collaboration in Addressing Barriers and Opportunities
- Holding Expert Group Meetings on Various Identified Barriers
- Developing Technical Reports & Guidelines



# Present Mechanism of Collaboration

- Annex I on Review, Exchange & Dissemination of Information
- Annex II on Development of Recommended Practices for Testing and Evaluating OES
- Annex III on Integration of OE Plants into Distribution & Transmission Grids

# IEA-OES Task Group on Environmental Issues

- To hold expert group meetings
- Identify and formulate scope of a new Annex

# Potential Scope

- Long-term research on environmental effects and mitigation measures of ocean energy devices
  - Evaluation of resource potential
  - Identification of potential impacts
  - Well designed operational monitoring
  - Establishment of a baseline, develop a base of knowledge
  - Support for regulatory streamlining of EIAs
  - Development of environmental technology standards

## For Further Information on the Proposed IEA-OES Plan of Actions, Please Contact

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Thank you for your attention