

# The IEA Ocean Energy Systems Implementing Agreement: Status and Future Prospects

**Katrina Polaski**  
Chair of the IEA-OES

## Contents:

1. **IEA Implementing Agreements**
2. Objectives
3. Members
4. Work Programme
5. Annex I
6. Annex II
7. Future Tasks
8. Recent Findings

- ❑ International collaboration
- ❑ IEA provides legal mechanism and management structure
- ❑ Contracting Parties sign agreement: government organizations, formal designees of government
- ❑ May include Sponsors – industry associations, commercial entities, other government agencies
- ❑ Annexes
  - ❑ Task-share – ExCo Members or nominees
  - ❑ Cost-share – Co-funded

## Canada and the World

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- ❑ **Promote development & utilisation of technologies for enhanced sustainable energy production from the ocean.**
- ❑ **Encourage & support development of networks of participants in R&D, prototype testing and deployment for collaboration and information exchange.**
- ❑ **Promote the involvement of industry and utilities in the IEA Ocean Energy Systems programme.**
- ❑ **Promote interactions with other global, multilateral and national energy implementation programmes.**

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- Networking**
- Information dissemination**
- Collaboration**
- Harmonisation**

# Member countries

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## 2001

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- Denmark
- United Kingdom
- Portugal

## 2002

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- Japan
- Ireland

## 2003

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- European Commission
- Canada

## 2005

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- USA

## Observers

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- Belgium, Italy, France, New Zealand, Norway, Brazil, Mexico, China, Germany, Korea

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## **Annex I**

### **Review, Exchange and Dissemination of Information on OES**

**Operating Agent**

INETI acting through ADENE ( Portuguese Energy Agency) .

## **Annex II**

### **Development of Recommended Practices for Testing and Evaluating OES**

**Operating Agent**

Ministry of Economic and Business Affairs, Danish Energy Authority acting through RAMBOLL, Denmark

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## Annual Reports

- 2002  2004
- 2003  2005

## Annex I Report 2003

### Wave and Marine Current Energy: Status and R&D Priorities

## Newsletters

- Semi-annual
- 6<sup>th</sup> Edition available

## Workshops/expert meetings

- Bristol, October 2002
- Lisbon, February 2004
- Copenhagen, November 2004
- Amsterdam, March 2006

## Participation in Conferences and Events

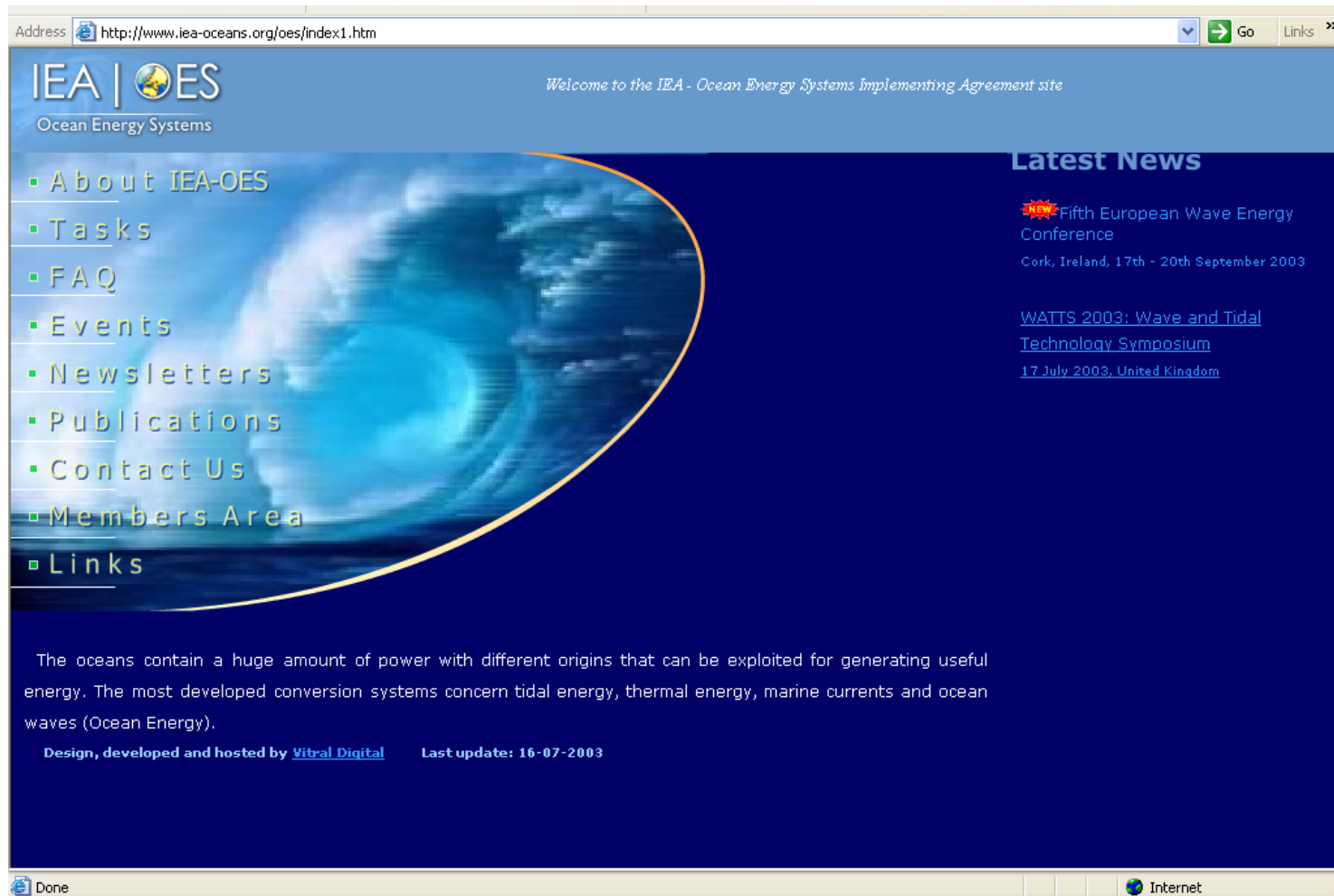


# Task I – Review, Exchange and Dissemination of Information on OES

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The screenshot shows the homepage of the IEA-Ocean Energy Systems (OES) website. The browser address bar displays <http://www.iea-oceans.org/oes/index1.htm>. The page features the IEA-OES logo and a navigation menu with the following items: About IEA-OES, Tasks, FAQ, Events, Newsletters, Publications, Contact Us, Members Area, and Links. A large image of a blue wave is visible in the background. On the right side, there is a 'Latest News' section with a 'NEW' icon and a headline: 'Fifth European Wave Energy Conference', dated 'Cork, Ireland, 17th - 20th September 2003'. Below this, there is a link to 'WATTS 2003: Wave and Tidal Technology Symposium' dated '17 July 2003, United Kingdom'. At the bottom of the page, there is a paragraph of text: 'The oceans contain a huge amount of power with different origins that can be exploited for generating useful energy. The most developed conversion systems concern tidal energy, thermal energy, marine currents and ocean waves (Ocean Energy)'. Below this paragraph, it says 'Design, developed and hosted by [Vibral Digital](#) Last update: 16-07-2003'. The browser status bar at the bottom shows 'Done' and 'Internet'.

[www.iea-oceans.org](http://www.iea-oceans.org)

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### **Ocean Energy Policies and Trends**

- Review of support statistics
- Review of policies and trends
- Publication Summer 2006

### **Web Based Library**

- Index of available research and policy papers in ocean energy.
- Available end of 2006

### **Ocean Energy DVD**

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- Annex II Report 2003**  
Development of Recommended Practices for Testing and Evaluating Ocean Energy Systems
  - Wave tank review
  - Scale model testing standards
  
- Annex II Extension**
  - Generic and site related resource data
  - Development protocol
  - Open sea testing recommended practices
    - Monitoring and data acquisition
    - Results presentation
    - Design, safety and installation procedures
  - 12 – 18 month programme, reporting end 2007

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## Grid Integration Issues for Ocean Energy

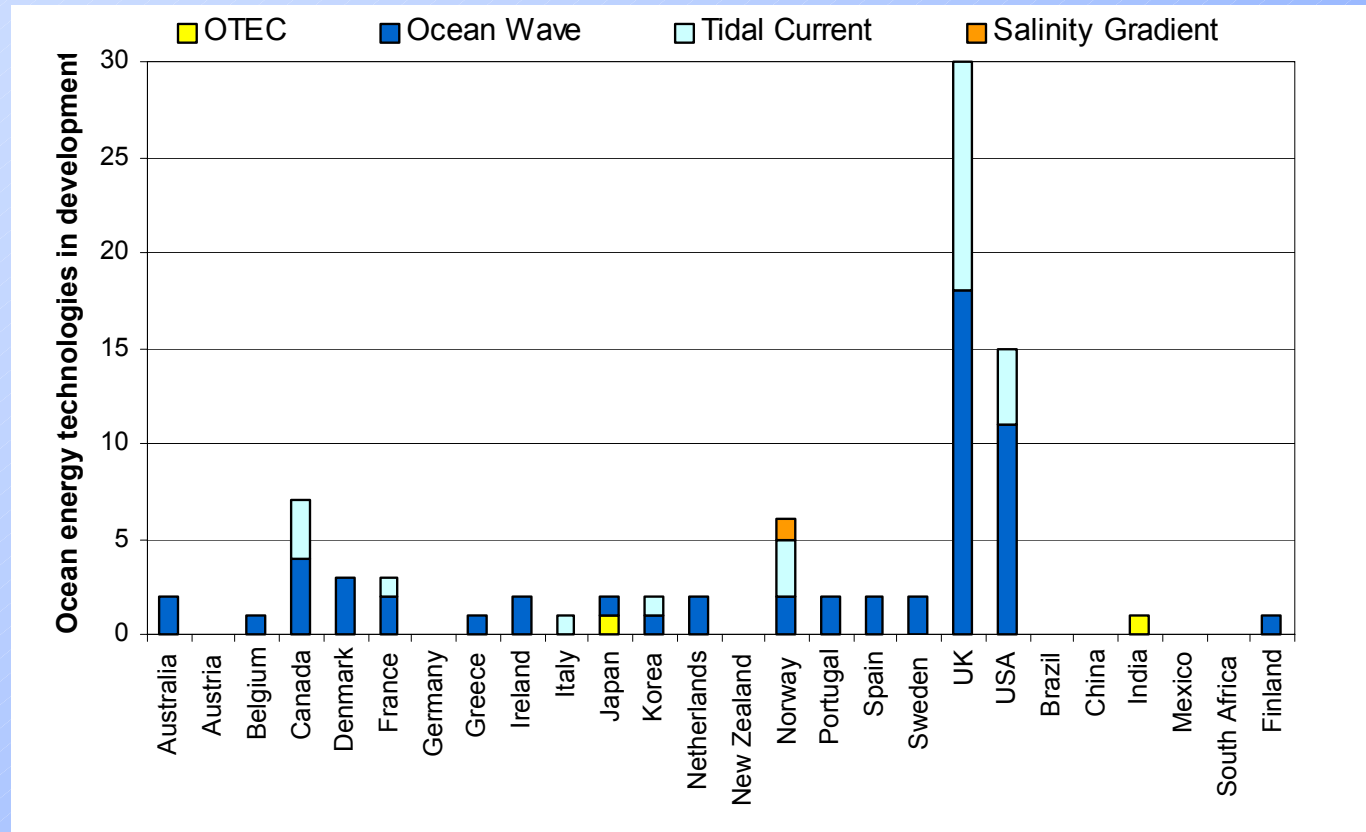
- Grid Integration Issues Half Day Seminar – October 2004, Denmark
- Expert meeting – April 2006, Vancouver
- Steering group to consider scope
- Device power output characteristics
- Resource characteristics – variability and predictability
- Grid connection/interconnection codes
- Policy issues relating to grids
  
- Environmental Issues
  - Environmental monitoring in prototype installations
  - Environmental Assessment Requirements
  - Designing implications of permitting

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## Review of Ocean Energy Development and Policy Trends – Draft Final

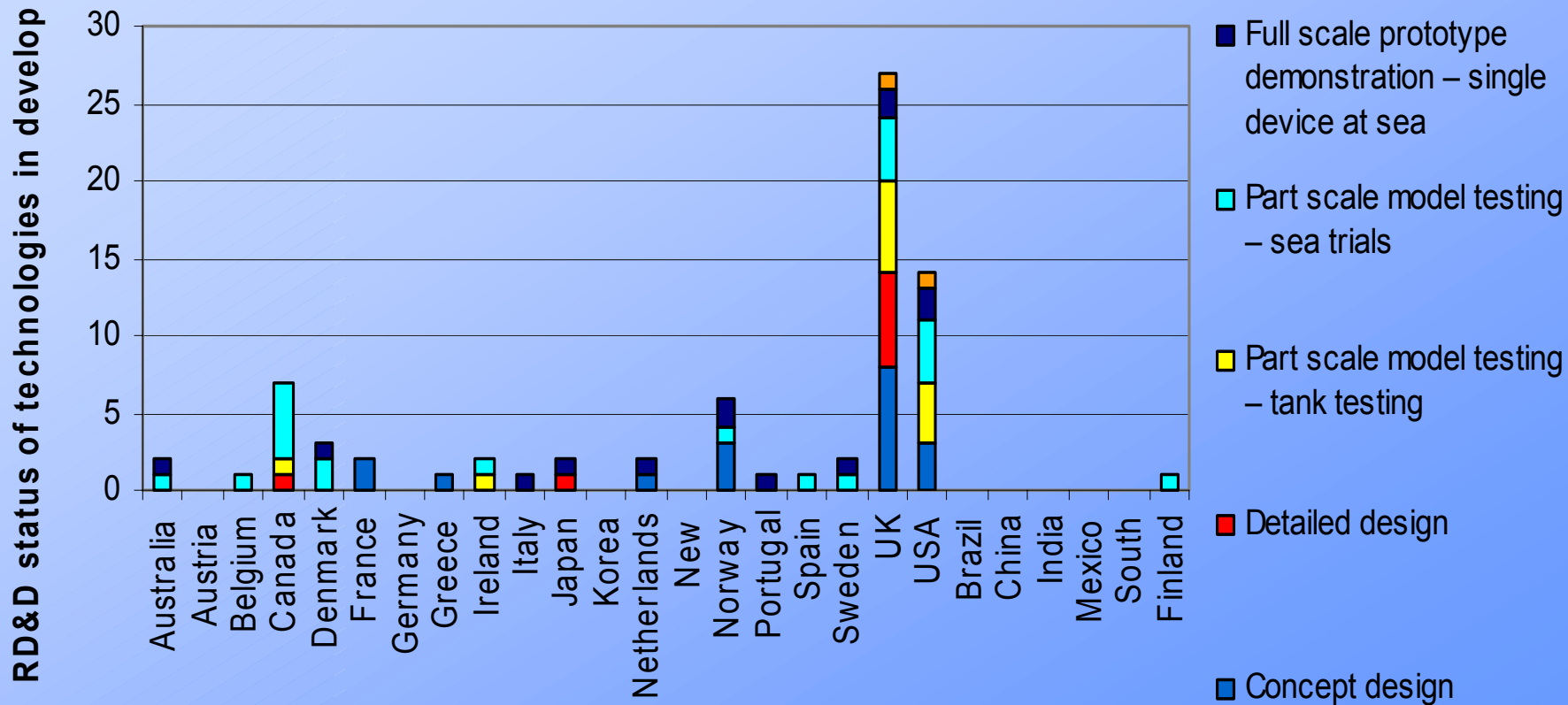


**Number of concepts under development has doubled since 2003 to 73**

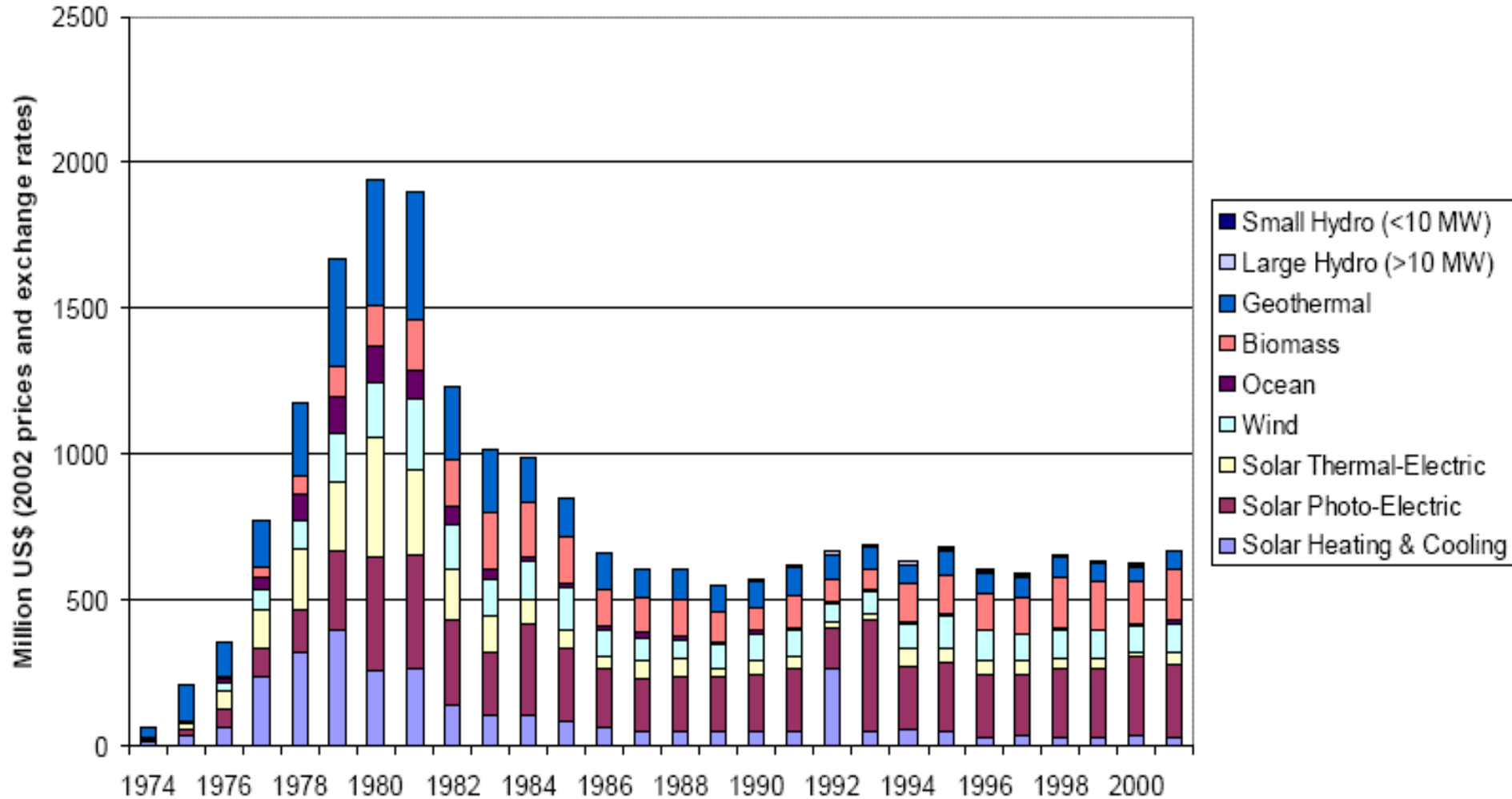
*Source: IEA OES Review of Ocean Energy Development and Policy, Draft*

## Review of Ocean Energy Development and Policy Trends – Draft Final

### Development Status by Country



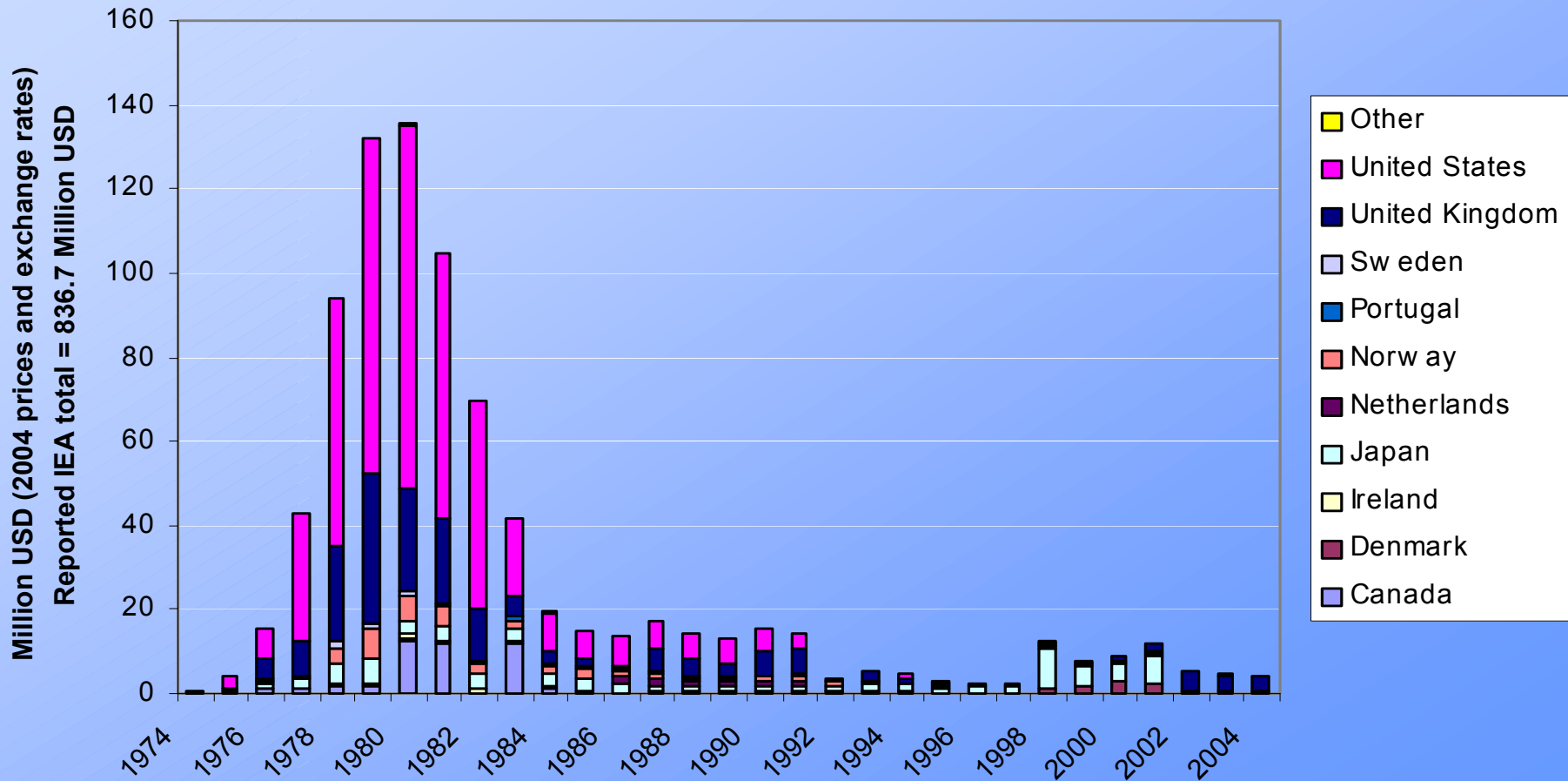
# Recent Findings



*Government Renewable Energy RD&D Budgets for IEA Countries, 1974-2001*  
 (Source: Renewable Energy Market & Policy Trends in IEA Countries, OECD/IEA 2004)

## Review of Ocean Energy Development and Policy Trends – Draft Final

### Government Ocean Energy Expenditure by Country



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**University of British Columbia**  
**British Columbia Ministry of Energy, Mines and  
Petroleum Resources**  
**Vizon Scitek Wave Basin**  
**Powertech Labs**  
**BC Ferries**  
**Institute of Ocean Sciences**  
**Pearson College**  
**Race Rocks project team**  
**Natural Resources Canada**  
**University of Victoria**  
**BC Innovation Council**  
**OREG**  
**Western Economic Diversification Canada**  
**Gouri Bhuyen and Janice Larson**