



OCEAN ENERGY SYSTEMS

.....

TECHNOLOGY
COLLABORATION
PROGRAMME

OCEAN ENERGY RESOURCES

The oceans contain 97% of the earth's water and 71% of the earth's surface is covered by seawater.

Ocean energy resources can be harnessed to produce electricity, drinking water, heat, hydrogen or biofuels.

By 2050, ocean energy has the potential to have deployed over 300 GW of installed capacity.



- ▶ Tidal currents
 - ▶ Ocean currents
 - ▶ Tidal range (rise & fall)
 - ▶ Waves
 - ▶ Ocean thermal energy
 - ▶ Salinity gradient
-

WHO IS OES?

OES - Ocean Energy Systems is the short name for the Technology Collaboration Programme (TCP) on Ocean Energy Systems.

OES, founded in 2001, operates under a framework established by the International Energy Agency in Paris.

OES is an intergovernmental and multi-national organization, which lends it an Authoritative International Voice.

OES is a technology collaboration programme providing the basis for interested parties to undertake energy technology research, development and deployment activities.

OES covers all forms of energy generation, in which sea water forms the motive power, through its physical and chemical properties. It does not presently cover offshore wind generation, since sea water is not the motive power (offshore wind is covered by the Wind TCP).



OES is a technology collaboration programme providing the basis for interested parties to undertake energy technology research, development and deployment activities.

WHAT IS AN IEA TECHNOLOGY COLLABORATION PROGRAMME?

Technology Collaboration Programmes are multilateral technology initiatives within the International Energy Agency (IEA) that enable experts from governments and industry to share research on breakthrough technologies, to fill existing research gaps and to carry out deployment or demonstration programmes. In short their work can comprise any technology-related activity that supports energy security, economic growth, environmental protection and engagement worldwide.

Within the IEA there are over 40 Technology Collaboration Programmes in the areas of:

- ▶ Cross-Cutting Activities
- ▶ End-Use (buildings, electricity, industry, transport)
- ▶ Fossil Fuels
- ▶ Fusion Power
- ▶ **Renewable Energies and Hydrogen**



OES belongs to the last category.

VISION

“As the Authoritative International Voice on Ocean Energy we collaborate internationally to accelerate the viability, uptake and acceptance of ocean energy systems in an environmentally acceptable manner.”

ROLE

- ▶ **Connect** organisations and individuals working in the ocean energy sector to accelerate development and enhance economic and environmental outcomes
 - ▶ **Educate** people globally on the nature of ocean energy systems, the current status on development and deployment, and the beneficial impacts of such systems, improve skills and enhance research.
 - ▶ **Motivate** governments, agencies, corporate and individuals to become involved with the development and deployment of ocean energy systems
 - ▶ **Facilitate** education, research, development and deployment of ocean energy systems in a manner that is beneficial for the environment and provides an economic return for those involved.
-

WORK PROGRAMME

The OES programme is carried through a set of Tasks, each one led by an “Operating Agent”. Member Governments can participate themselves, or designate another organization in their country to represent them on the Task. The activities can be financed on a cost-shared or task-shared basis, or a combination of both. Each Task is discussed and approved by the Executive Committee, which meets twice a year.



Each Task is led by an ‘Operating Agent’ (OA), from a member country, responsible for coordinating task research activities and reporting on progress to the executive committee.

To date, OES has succeeded in establishing the following Tasks:

Task N°	Title	Lead by	Status
Task 1	Review, Exchange and Dissemination of Information on Ocean Energy Systems	Portugal	Active
Task 2	Development of Recommended Practices for Testing and Evaluating Ocean Energy Systems	Denmark	Concluded
Task 3	Integration of Ocean Energy Plants into Distribution and Transmission Electrical Grids	Canada	Concluded
Task 4	Assessment of Environmental Effects and Monitoring Efforts for Ocean Wave, Tidal and Current Energy Systems	United States	Active
Task 5	The Exchange and Assessment of Ocean Energy Device Project Information and Experience	United States	Concluded
Task 6	Worldwide Web GIS Database for Ocean Energy	Germany	Active
Task 7	Cost of Energy Assessment for Wave, Tidal, and OTEC at an International Level	UK	Active
Task 8	Consenting Processes for Ocean Energy on OES Member Countries	Portugal	Active
Task 9	International Ocean Energy Technology Roadmap	UK	Active
Task 10	Wave Energy Modelling Verification and Validation	Denmark	Active
Task 11	Investigation and Evaluation of OTEC Resource	Japan	Active
Task 12	Stage Gate Metrics International Framework for Ocean Energy	European Commission	Active
Task 13	Tidal Energy Modelling Verification and Validation	Singapore	Active

THE OES FACILITATES:

- ▶ Access to advanced R & D teams in the participating countries
 - ▶ Developing a harmonized set of measures and testing protocols for the testing of prototypes
 - ▶ Reducing national costs by collaborating internationally
 - ▶ Creating valuable international contacts between government, industry and science
-

WHO CAN JOIN?

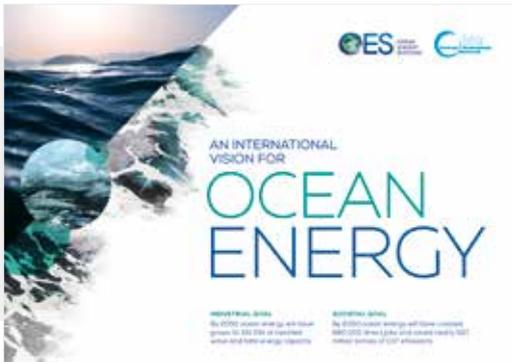
Membership is open to any country and it involves a commitment to national participation in certain collaborative research activities.

The Contracting Parties can be:

- ▶ A Governmental Ministry or National Agencies
- ▶ Research Institutes or Universities
- ▶ Industry Associations
- ▶ Energy Technology Companies

If your organisation is interested in participating, and your country is no yet a member of the OES, the first step is to contact the Executive Secretary. Thereafter follows an exchange of letters (formal invitation, acceptance, and notification), with the final step being the signature of the actual contract (Implementing Agreement).

[Download
our International Vision for Ocean Energy:](#)



[Download
our latest Annual Report:](#)



AVAILABLE AT:

www.ocean-energy-systems.org

If you are interested in finding out more about OES,
please contact the Executive Committee Secretary:

Ana Brito e Melo
WavEC Offshore Renewables
Rua Dom Jerónimo Osório, n.º11, 1º andar
1400 - 119, Lisbon
PORTUGAL

E-mail: ana@wavec.org
Tel: +351 218 482 655

Disclaimer

The OES, also known as the Ocean Energy Systems Technology Collaboration Programme, functions within a framework created by the International Energy Agency (IEA). Views, findings and publications of OES do not necessarily represent the views or policies of the IEA Secretariat or its individual member countries.

OES MEMBERS

ordered by sequence of joining

Portugal
Denmark
United Kingdom
Japan
Ireland
Canada
United States
of America
Belgium
Germany
Norway
Mexico
Spain
Italy
New Zealand
Sweden
Republic of Korea
South Africa
China
Nigeria
Monaco
Singapore
The Netherlands
India
France
European Commission

