

# Final report

## 1. Project details

<b>Project title</b>	EUDP 2021-II Varetagelse af opgaver i forbindelse med Danmarks medlemskab af IEA-OES 2022 (som alternate)
<b>File no.</b>	J.nr. 134-21031
<b>Name of the funding scheme</b>	EUDP
<b>Project managing company / institution</b>	Ramboll
<b>CVR number</b> (central business register)	35128417
<b>Project partners</b>	
<b>Submission date</b>	31 March 2023

## 2. Summary

### *English*

This project involves assistance in connection with Denmark's membership of the IEA Technology Collaboration Program (TCP) for Ocean Energy Systems (OES) in 2022. OES was founded in 2001 by Denmark, the UK and Portugal and today 21 countries and the EU commission are members of OES. Kim Nielsen, Ramboll has been Danish Alternate of the IEA-OES since 2001.

The assistance on a yearly basis involves participation, preparation, and presentation of Danish interests in relation to Wave Energy Conversion at the typically two annual ExCo meetings. However, since COVID 19 the new norm will be one annual face to face Exco meeting complemented by several online meetings and webinars open to a wider audience.

The project includes dissemination of Danish Wave Energy activities at the ExCo meetings and synthesis to OES annual report. Further participation in the creation of new activities and tasks in connection with Ocean Energy is expected i.e., such as metrics for technology assessment and analysis and forecasts of the cost of energy of ocean energy converters. Ramboll has since 2016 been coordinating Task 10 on WEC Numerical Modelling and Verification – which has received support via a separate EUDP project in collaboration with DTU, AAU and Floating Power Plant .

2022 was the last year with Yann-Hervé De Roeck, Directeur Général France Energies Marines, as Chairman he is followed by Matthijs Soede from the European Commission.

### *Danish*

Dette projekt omfatter assistance i 2022 i forbindelse med Danmarks medlemskab af IEA Technology Collaboration Program for Ocean Energy Systems (OES). OES blev grundlagt i 2001 af Danmark, Storbritannien og Portugal, og i dag er 21 lande og EU-kommissionen medlemmer af OES. Kim Nielsen, Rambøll har været dansk suppleant i IEA-OES siden 2001.

Assistancen på årsbasis indebærer deltagelse, forberedelse og præsentation af danske interesser i relation til Wave Energy Conversion på de typisk to årlige ExCo-møder. Men siden COVID 19 er den nye norm et årligt fysisk Exco-møde suppleret med flere onlinemøder og også webinarer, der er åbne for et bredere publikum.

Projektet omfatter formidling af danske bølgeenergiaktiviteter på ExCo-møderne skrive en syntese til OES' årsrapport og deltage i skabelsen og udarbejdelsen af nye aktiviteter i forbindelse med Ocean Energy såsom målestok for teknologivurdering og analyser og prognoser for omkostningerne ved havenergi. Rambøll har således skabt og koordineret Task 10 "WEC Numerical Modelling and Verification" – som har modtaget støtte via et separat EUDP-projekt.

2022 var det sidste år med Yann-Hervé De Roeck, Directeur Général France Energies Marines som Chairman, han efterfølges af Matthijs Soede fra Europa-Kommissionen.

### 3. Project objectives

The objective of the IEA-OES is on an international scale to connect organisations and individuals working in the ocean energy sector to accelerate the viability, uptake, and acceptance of ocean energy systems in an environmentally acceptable manner.

The work of the IEA-OES covers energy generation from the ocean including:

- wave energy
- tidal energy
- energy from ocean currents
- ocean thermal energy conversion OTEC
- energy extraction from salinity gradients

### 7. Project conclusion and perspective

Ocean Energy industry today include small-scale demonstrations as well as pilot projects of higher technology readiness levels. The Ocean Energy Systems that demonstrate reliability and availability and share their successful achievements, give confidence to further scale-up of the technology. Successful testing programs have been completed, and new devices are progressing to deployment and commissioning tests.

The OES international co-operation within the participating countries facilitates:

- Access to advanced R&D teams.
- A harmonized set of measures and testing protocols for the testing of prototypes.
- Creating valuable international contacts between government, industry, and science.
- Sharing information and networking.

Collaboration is one of the benefits of joining OES: participants gain an international perspective on ocean energy issues, opportunities, and present challenges.

The OES, members are from governmental departments, utilities, universities and research organizations, energy agencies and industry associations. The OES aim to hold three public webinars a year, to share the state of progress in terms of power, reliability, survivability, maintainability, and ultimately affordability towards LCOE targets proposed in the European SetPlan. The OES also share examples of countries implementing market instruments: such as feed-in tariffs, auctions and tenders, legally binding targets, or purchase obligations for renewables as well as the creation and implementation of policies to Marine Spatial Plans and collaboration.

The twenty-two active members are: Australia, Belgium, Canada, China, Denmark, European Commission, France, Germany, Japan, Korea, India, Ireland, Italy, Monaco, New Zealand, Netherlands, Portugal, Singapore, Spain, Sweden, United Kingdom, and United States of America. In 2022, SIDS DOCK, representing 32 small islands and low-lying developing states across the globe, was invited as Observer. During this EUDP funded project OES had the following meetings:

- 44th OES ExCo Meeting by ZOOM - 10 – 11 March 2022
- 45th OES ExCo Meeting, Webinar, 29th – 30th June 2022
- 46th OES ExCo Meeting, San Sebastian, Spain, 17 October 2022,
- 47th OES ExCo Meeting, Online event, 22nd – 23rd March 2023

## 8. Appendices

The OES Annual Report 2022 showcases the key achievements and recent outcomes of the IEA-OES collaborative efforts on a global scale, as well as updates on ocean energy policy, research, and deployment advancements in all participating countries.

Annual report:

<https://www.ocean-energy-systems.org/publications/oes-annual-reports/>

OES Webpage.

<https://www.ocean-energy-systems.org/>

Danish Partnership for Wave Power:

[www.wavepartnership.dk](http://www.wavepartnership.dk)