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# Marine Energy Webinar

15<sup>th</sup> September 2020 11:00 CEST

Davide Coppola (ESA)  
Giulia Manzetti (ESA)  
Benjamin Lehner (DMEC)

ESA UNCLASSIFIED



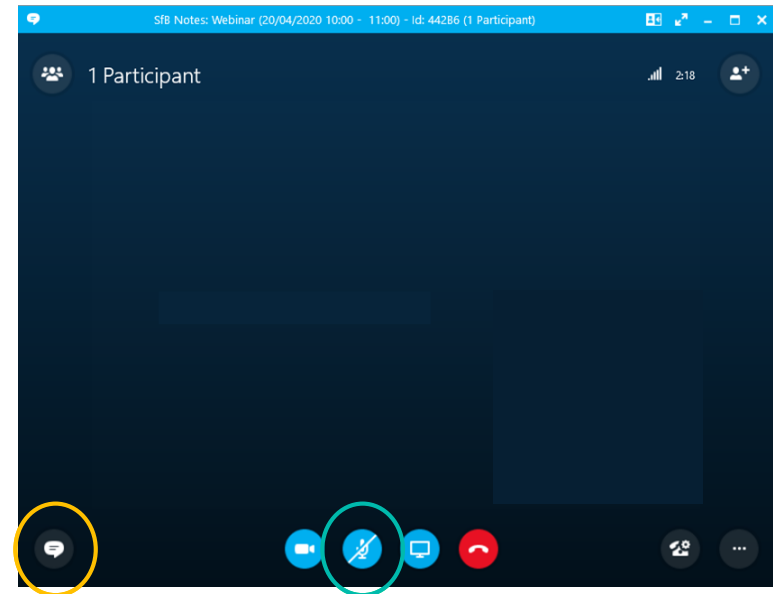


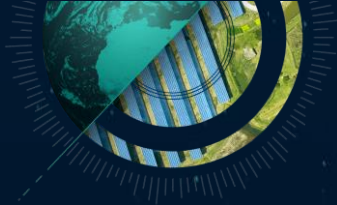
Davide Coppola

## WELCOME TO THE WEBINAR!

### Before we start...

- Due to the number of attendees, please **keep your microphones muted** at all times and switch off the webcam function
- You can use the **conversation function** anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar





## AGENDA

- ESA introduction
- “Marine Energy” Invitation To Tender
  - Objectives
  - Areas of interest
  - Value of Space
- Guest speaker
  - Benjamin Lehner - Dutch Marine Energy Centre (DMEC)
- How to apply: funding and tender information
- Open Questions & Answers session







## THE EUROPEAN SPACE AGENCY

### Purpose of ESA

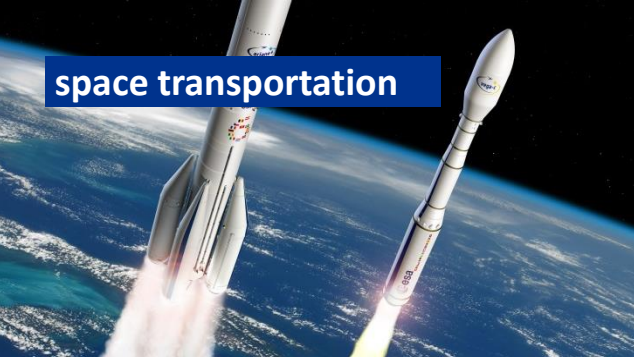
To provide for and promote, for exclusively peaceful purposes, cooperation among European states in space research and technology and their space applications.

### Facts and figures

- Over 50 years of experience
- 22 Member States
- 8 sites across Europe and a spaceport in French Guiana
- Over 80 satellites designed, tested and operated in flight



**space transportation**



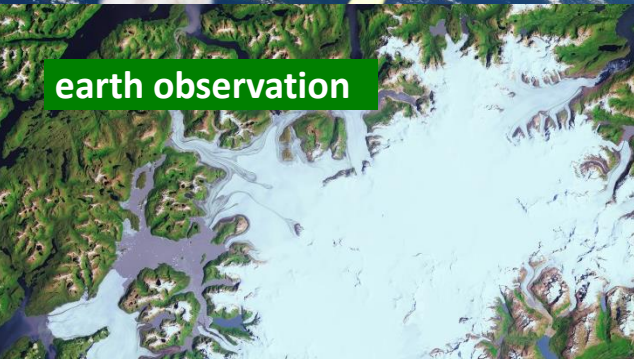
**science**



**human spaceflight**



**earth observation**



**telecommunications  
and applications**



**navigation**



**exploration**



**operations**

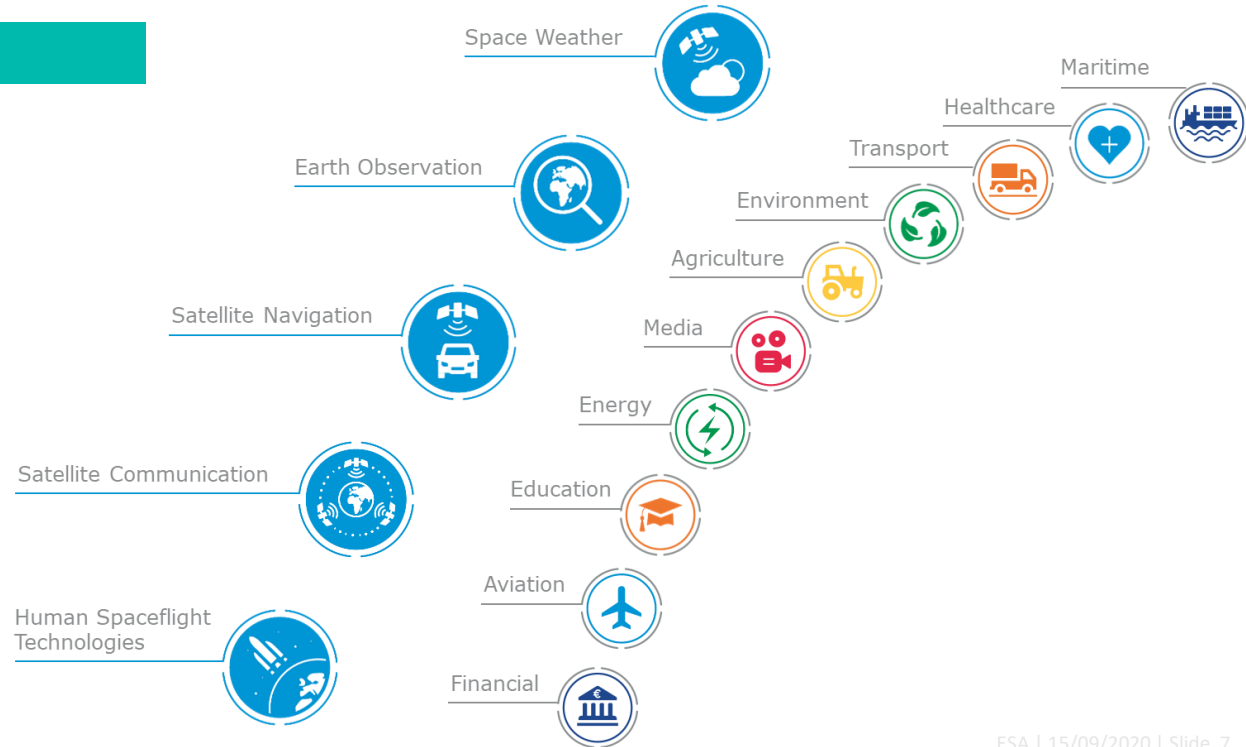


**technology**



# ESA SPACE SOLUTIONS

Could you be leveraging  
Space technology and data  
for the benefit of life on  
Earth?



## WHAT ESA OFFERS



Zero-Equity  
Funding  
(€60k-€3M+)



Tailored Project  
Management  
Support



Access to  
Our Network  
& Partners



Use of the  
ESA Brand for  
Credibility





Giulia Manzetti



# Marine Energy

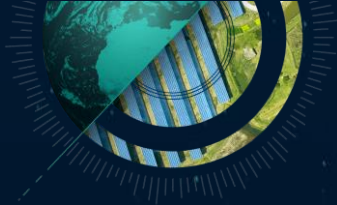
Planned ESA's funded invitation to tender



## Marine Energy

- Oceans represent an enormous untapped resource of clean and renewable energy. It is estimated that 100GW of wave and tidal energy capacity can be deployed in Europe by 2050, meeting 10% of Europe's current electricity needs.
- Ocean energy has the potential to play a significant role in the future energy system, whilst contributing to the reduction of carbon emissions, mitigating climate change and stimulating economic growth, especially in coastal and remote areas.
- The marine energy resources are contained in waves, tides, the difference in salinity gradients, and the heat stored in surface waters. This energy can be converted into reliable, sustainable, and cost-competitive electricity that can be used to power homes, transport, and industries.





## Planned ESA-funded invitation to tender on Marine Energy

ESA Space Solutions is planning on issuing an open competitive tender for a feasibility study to investigate the technical feasibility and economic viability of space based applications for marine energy solutions, and define a roadmap for services implementation and demonstration.

Invitation to tender planned to be issued in September 2020

**Funding up to € 150K per activity (100% ESA funded)**

Duration 9 months





## OBJECTIVES

- Assess **technical** feasibility and **economic** viability of **space** based services in support of **marine energy**;
- Identify and assess the **technical and non-technical risks** associated with the implementation, commercialisation and operations of the services;
- Consolidate the business plan for supporting an informed decision for investment in further activities
- Define a **roadmap** for services **implementation** and **demonstration** (potentially through a follow-up ESA co-funded demonstration project).



## AREAS OF INTEREST



- Support of logistics of marine energy installation, operations and maintenance (O&M) activities



- Increase durability and survival of marine energy installations



- Resource assessment at different sites (including historical analysis and forecast, risk analysis, bankability)



- Supporting environmental impact assessment of marine energy



## VALUE OF SPACE



### Satellite Navigation

- Positioning of assets as input to logistics during installation phase;
- Automation of assets lifting during installation phase (through Augmented Global Navigation Satellite System);
- Providing navigation support to Remotely Piloted Aircraft Systems.



### Satellite Communications

- Provide a communication link between offshore and shore including M2M (for process automation and end-to-end business processes) and voice and data during installation and maintenance phases.



### Earth Observation

- Environmental monitoring (e.g. pollution at sea, marine habitats, coastal ecosystem);
- Provision of weather and sea status forecast for planning and optimisation of operations during construction and maintenance phases;
- Measurement of ocean parameters for providing energy forecasting and consequently understanding power plant profitability.

# Dutch Marine Energy Centre (DMEC)

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represented by ...

**Benjamin Lehner**

*Business and Innovation Advisor*

**Dedicated to making marine energy  
the next big thing in energy!**





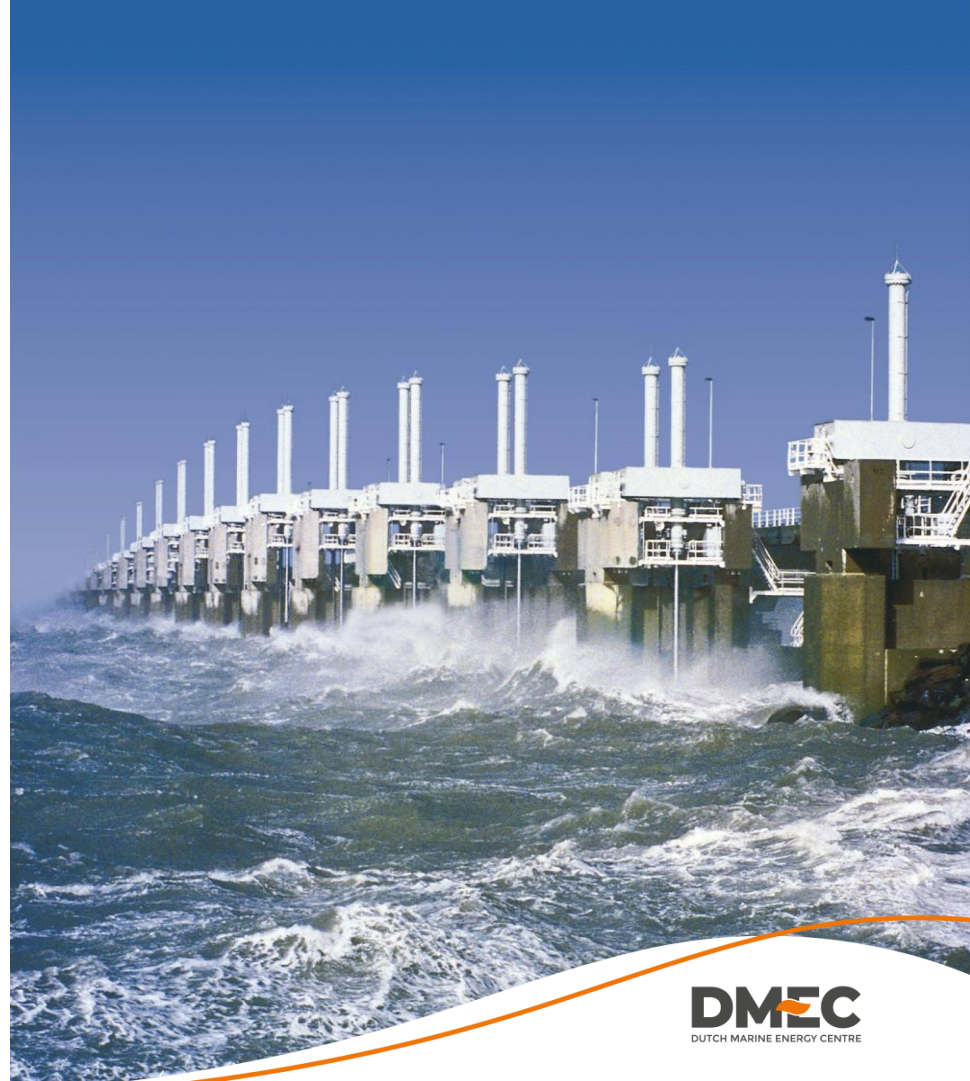
# About DMEC

DMEC is an **accelerator for marine energy solutions**

## Facts & figures

Accelerated companies	> 75
International partners	> 80
Public Private Investments	> €57M

**Dedicated to making marine energy  
the next big thing in energy!**



# Marine energy potential

## Energy Transition

**300 GW** global energy generation for ± 350 million households

## Climate Action

**5.2 BN** tonnes of CO<sub>2</sub> reduction by 2030

## Sustainable Growth

**€ 100 BN** global market value and 650,000 new jobs



# Marine energy technologies



Wave Energy



Salinity Gradient  
Energy



Tidal Energy



Ocean Thermal  
Energy Conversion  
(OTEC)



Floating Solar  
Energy



Floating Wind  
Energy

# DMEC is accelerating marine energy solutions



## Markets

Realise marine energy solutions



## Innovation

Advance marine energy innovations



## Capital

Mobilise investments



## Policy

Support policy development





Davide Coppola



## How to apply: Funding and Tender Information





## ESA TENDER INFORMATION

Funded participation to ESA Space Solutions is open to any company and/or organisation, be it as group of users, public body or non-governmental organisation, residing in the following Member States:

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and the United Kingdom



## HOW TO APPLY

1. **Register** (minimum 'light registration') by completing online questionnaire on ESA-STAR Registration ([esastar-emr.sso.esa.int](https://esastar-emr.sso.esa.int))
2. **Download** the official tender **documentation** (Invitation to Tender), which will be available as soon as the ITT is open via EMITS ([emits.esa.int](https://emits.esa.int))
3. Create 'Bidder Restricted Area' in ESA-STAR
4. **Write your Proposal** using the template provided in the Tender documentation and obtain **Letter of Authorization** from your National Delegation ([business.esa.int/national-delegations](https://business.esa.int/national-delegations))
5. **Submit** your proposal via 'Bidder Restricted Area' in ESA-STAR Tendering ([esastar.sso.esa.int](https://esastar.sso.esa.int))

More info can be found here:

[esa.int/About\\_Us/Business\\_with\\_ESA/How\\_to\\_do/esa-star\\_Registration\\_Process](https://esa.int/About_Us/Business_with_ESA/How_to_do/esa-star_Registration_Process)





## BASIC PRINCIPLES - ESA-STAR

Registration (minimum 'light registration') on [ESA-STAR Registration](https://esastar-emr.sso.esa.int) (<https://esastar-emr.sso.esa.int>)

Please note that esa-star allows two levels of entity registration: "Light" and "Full". This allows new users wishing to do business with ESA to carry out their registration in two steps. A "Light" registration will grant access to all esa-star services up to and including proposal submission. The award of ESA contracts requires "Full" registration.



The screenshot shows the ESA-STAR registration portal. At the top is the ESA logo and 'esa-star registration'. Below this is a navigation bar with links: 16 Apr 2020, ESA Home Page, EMITS, ESA Industry Portal, Contact Us, and Help. On the left is a sidebar menu with links: Home, New Registration (highlighted), Maintain Entity Information, and ESA Entities Directory. The main content area is titled 'NEW REGISTRATION' and contains a question: 'Please select one of the two options:\*'. There are two radio button options: 'A. I am an Entity that has the capacity as "legal entity"' and 'B. I am a Business Unit acting on behalf of a "legal entity", without being entitled to commit on contracts on my own'.

## BASIC PRINCIPLES - EMITS

Tender documentation: on [emits.esa.int](https://emits.esa.int)

- Announced under “Intended Invitations to Tender (IITT)”
- Published under “Open Invitations to Tender (ITT)”








The screenshot shows the EMITS (European Mission Information and Tendering System) website. The header features the ESA logo and the text "emits". A navigation bar contains links: ENTITIES, LOGIN, ESA Home Page, Industry Information, Entity Registration, Service Desk, and Help. Below the header, the user is identified as "User: Guest". On the left, a sidebar menu lists various categories: News, COVID-19 measures and instructions, Procurement Review Board Announcements, Open Invitations to Tender, Intended Invitations to Tender, Reference Documentation, ECOS Resources, and How to do Business with ESA. The main content area displays the "emits" logo and a prominent blue banner that reads "→ INVITATIONS TO TENDER PUBLISHED". Below this banner, it states "Hosted by ESA" and "Rel. 7.9.0.0".

## BASIC PRINCIPLES - EMITS

Registration on esa-star is required to access [tender documents in Emits](#)

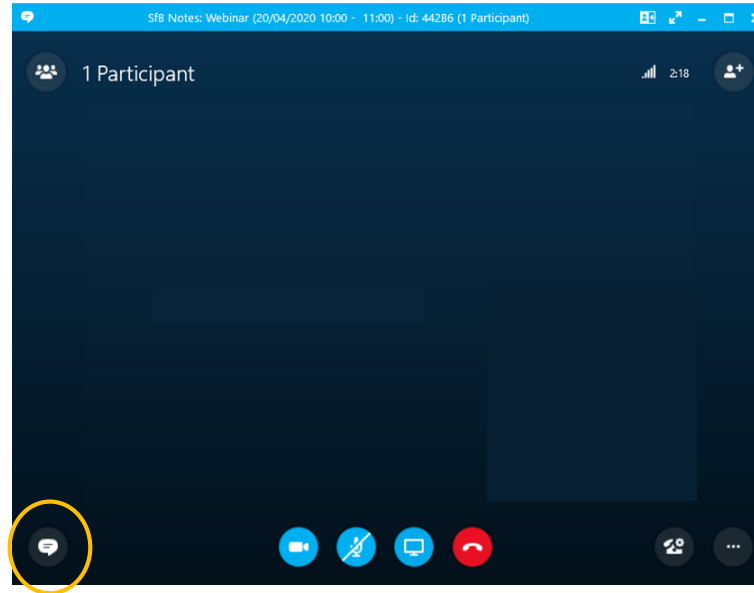


- ☒  [Letter of Invitation](#), 105055 Bytes
- ☒  [Statement of Work](#), 1053145 Bytes
- ☒  [Contract Conditions](#), 359891 Bytes
- ☒  [Tender conditions](#), 450220 Bytes
- ☒  [Clarification-e 1](#), 42650 Bytes

**Transfer** selected documents as

[Current Expression of Interest](#)

## OPEN QUESTIONS & ANSWERS SESSION







→ **THANK YOU!**

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