**Building a dominant** wind sector requires focused R&I

The European Energy Research Alliance (EERA)

2021-01-13

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Coordinator EERA JP Wind





# European Energy Research Alliance (EERA)

- EERA is an association of European public research centers and universities active in low-carbon energy research.
- Wind Energy is one of 15 Joint Programmes.



250+ organisations



50,000+ researchers



30 countries



Advanced Materials and Processes for Energy Application (AMPEA)

Bioenergy

Carbon Capture and Storage

Concentrated Solar Power (CSP)

Economic, Environmental and Social Impacts (JP e3s)

Energy Efficiency in Industrial Processes

**Energy Storage** 

**Energy Systems Integration** 

Fuel Cells and Hydrogen

Geothermal

Hydropower

Nuclear Materials

Ocean Energy

Photovoltaic Solar Energy

Shale Gas (discontinued)

**Smart Cities** 

Smart Grids

Wind Energy



**AMPEA** 



**Bioenergy** 



**Carbon Capture** and Storage



**Concentrated Solar** Power



e3s



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**Energy Storage** 



**Energy Systems** Integration



Fuel Cells and Hydrogen



Geothermal



**Smart Grids** 



**Energy Efficiency** 

in Industrial

**Processes** 

Hydropower



**Nuclear Materials** 



**Ocean Energy** 



**Photovoltaic Solar** Energy



**Smart Cities** 



Wind Energy

www.linkedin.com/in/eera-jp-wind/

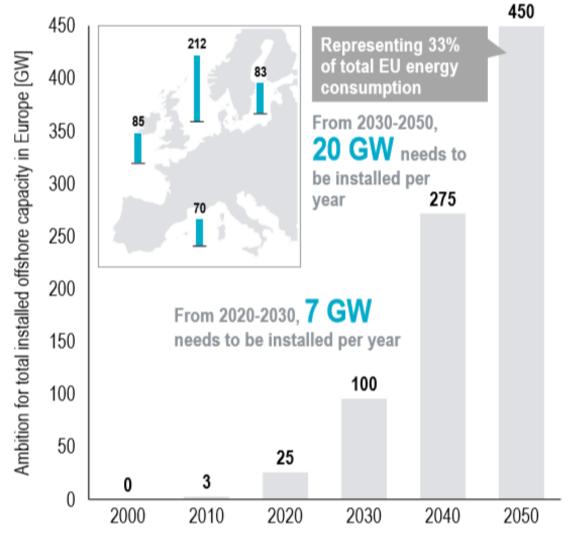
# EERA – Joint Programme on Wind Energy

JP Wind brings together the major research groups in wind energy in Europe

- 13 research groups started JP Wind in 2009
- The number of collaborating partners increased to 54 in 2020
- JP Wind is the globally leading R&D community in wind energy creating synergy advantages for European research organisations and industry in support of the green energy transition and the SET-Plan goals.



Europe has large ambitions for offshore wind. There are significant challenges that require effort from different sectors.



### Main challenges

#### **Specifications**



Costs

 Reduce costs for full competitiveness in energy system (min. EUR/MWh)



Roll-out

 Achieve necessary capacity for rollout



Supply security

> Safeguard full supply security



Spatial planning

 Use acceptable space of the North Sea (max. MWh/km³)



Environment

 Achieve positive impact on environment



Citizen support and acceptance

 Achieve positive social cost-benefit and positive acceptance from citizens

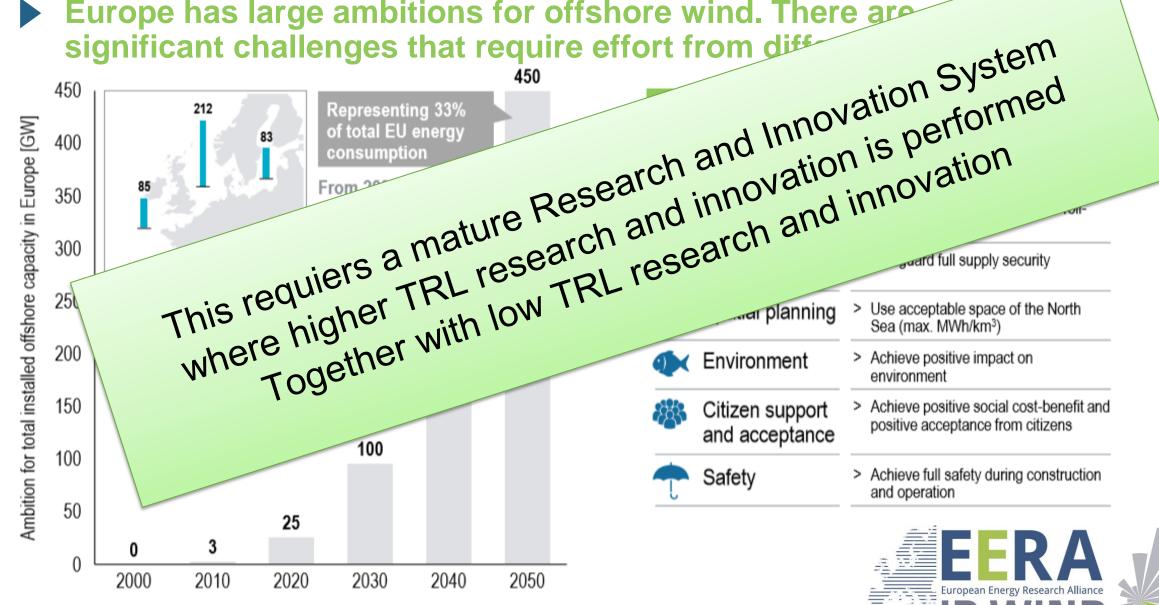


Safety

 Achieve full safety during construction and operation



Europe has large ambitions for offshore wind. There are significant challenges that require effort from diff



- and acceptance
- positive acceptance from citizens



> Achieve full safety during construction and operation



#### collaborations and interactions

#### **Key interaction with industry**

- >> Collaboration and interaction with **industry platform ETIPWind**
- EERA Management Board has 8 seats in ETIPWind Executive committee and contributes to the ETIPWind meetings and strategy.
- Industry has 16 seats in the ETIPWind Executive committee and EAWE has another seat.





#### **Key interaction with SETPlan and EAWE**

- >> Collaboration and interaction with country representatives through SETPlan
- The SETPlan Implementation plan offshore wind is determined by country representatives coordinated from the SETPlan. EERA JP Wind contributes to the SETPlan Steering Committee by means of the SETWind project.
- >> Collaboration and interaction with European Academy of Wind Energy EAWE
- Contribution and sessions at the WESC, large overlap in EERA JP Wind and EAWE partners





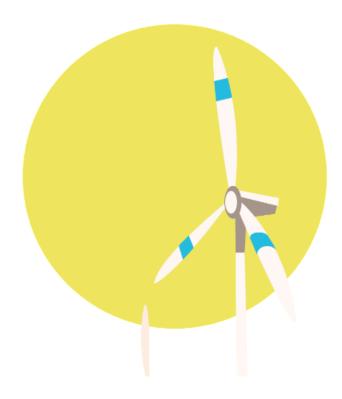


# SETPlan Implementation team offshore wind

Supported by EU funded

SETWind project

This project is supported by H2020 LC-SC3-JA-2-2018: Support to the realisation of the Implementation Plans of the SET-Plan sub-topic: offshore













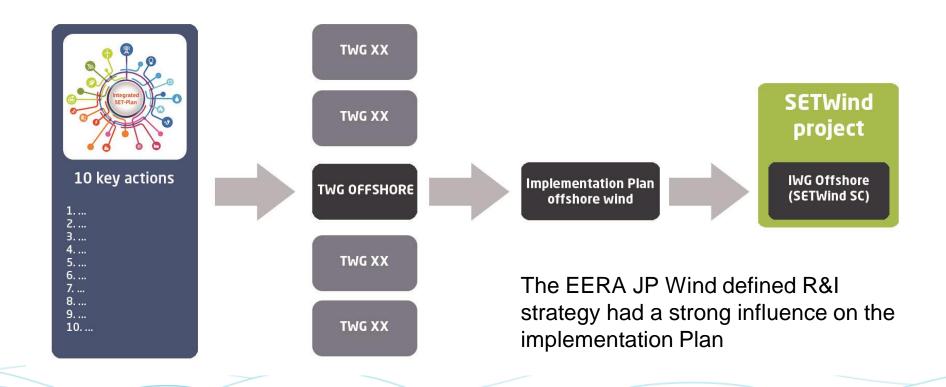




SETWind project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 842231.

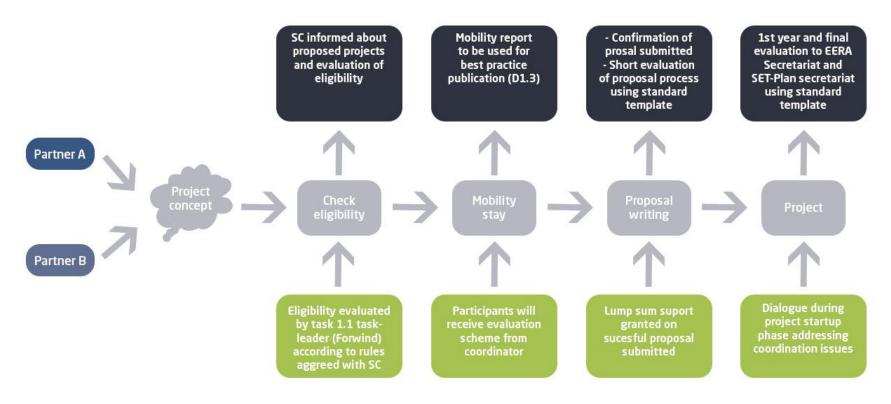












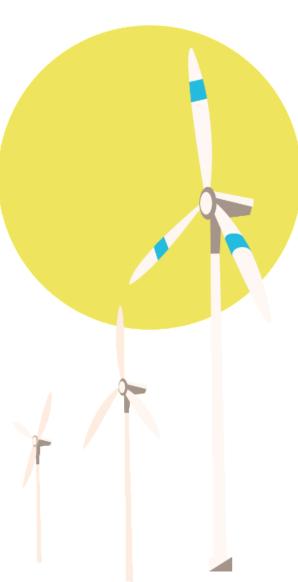
Institutional alignment leading to multi-national projects



# CLEAN ENERGY TRANSITION PARTNERSHIP



EERA CETP White Paper



## **European Partnership for Clean Energy Transition - CETP**

#### Facing a number of challenges:

With no time to lose, Europe's economic sectors require coordinated & integrated innovation to transform an energy system that fuels a climate-neutral Europe

#### CETP's specific objectives:

Coordinate at least 25 national/regional energy R&I programs

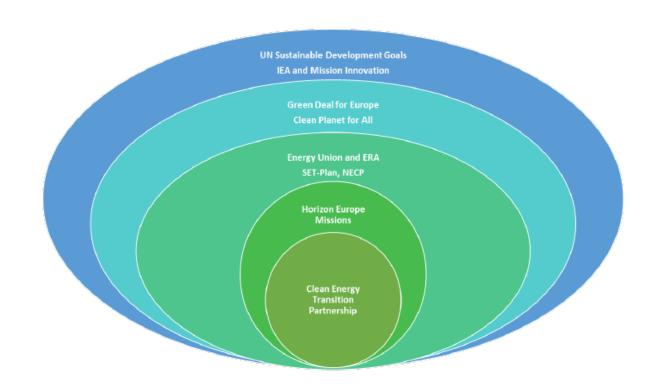
Increase transnational funding levels in CETP's thematic priorities through calls budgeted with € 100 mln per year

Stimulate R&I private investments (pilot, demo and validation of implemented solutions across all of Europe)

Be a collaborative platform for R&I, funders and policy makers

Implement SET-Plan, support NECPs, reach out beyond Europe (IEA, MI, CEM)

Build on the work of several ERA-NET Cofunds and SET Plan Implementation Working Groups



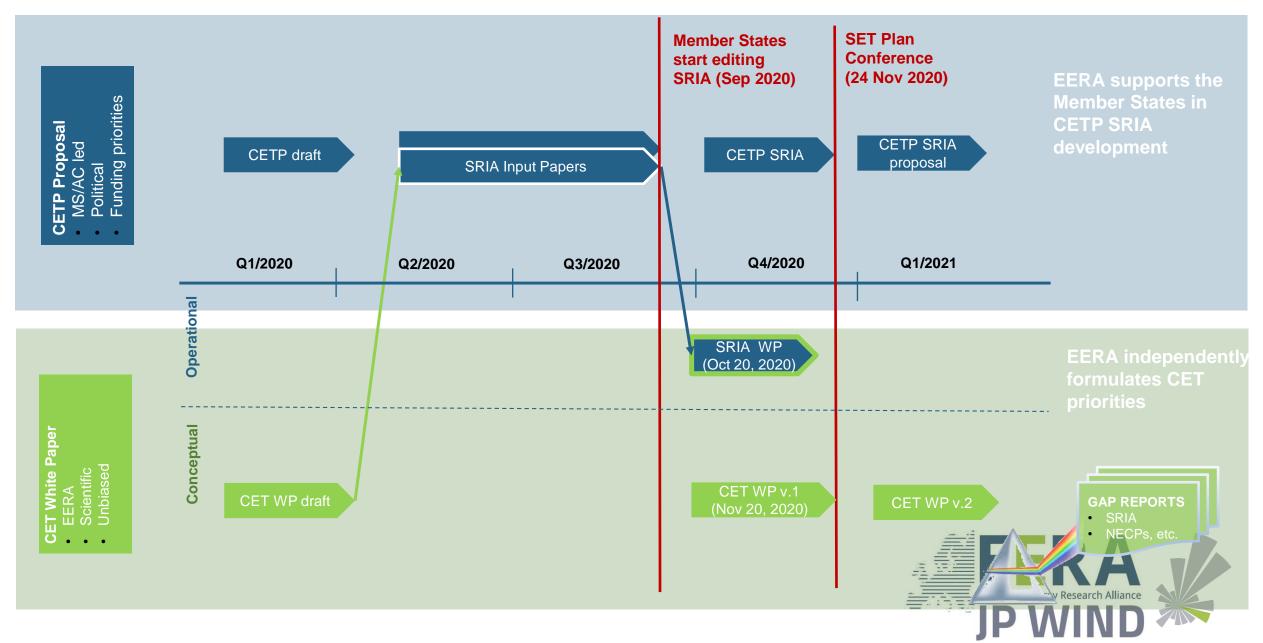


## **CETP Partnership - History**

- ► CETP initially "reserved" to partners = MS/ACs
- ► EERA call for participation Jan 2020 → 8 contributors = Core writing team : NO(3), DE(1), IT(1), SP(1) NL(1); BE(1)
- ▶ EERA White Paper Mar 2020: Innovative Approach (Top down) → endorsed/praised by EC
- ▶ May 2020, invited to participate to MS/AC CETP proposal under leadership of AT and SE.
- ▶ EERA now is at the centre of writing the SRIA of the CETP
  - ► Highest influence / agenda setting
  - ▶ Importance of implication of JPs
  - ► Complexity of process: 14 IWG's and 14 ERA-Nets
  - ▶ Learning by doing

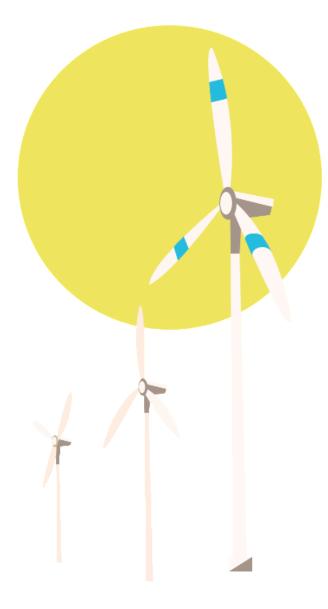


# **EERA** in the CETP SRIA process: Timeline & deliverables









# **HEU preparation: latest developments and EERA contributions**

**July 2020** 

September 2020

### **HEU Strategic Plan 2021-2024**

Draft issue papers
(Orientations) Cluster 4 and 5
for feedback with MS

Circulated internally by EERA (confidential)

Public consultation on Horizon Europe First Strategic Plan 2021-2024

**EERA** contribution submitted

22-24 September: Co-design at the R&I Days

**EERA** attended

## **Work Programmes 2021-2022**

Preparation draft WP 2021-2022

First drafts WP 2021-2022 Cluster 4 and 5 for feedback from MS

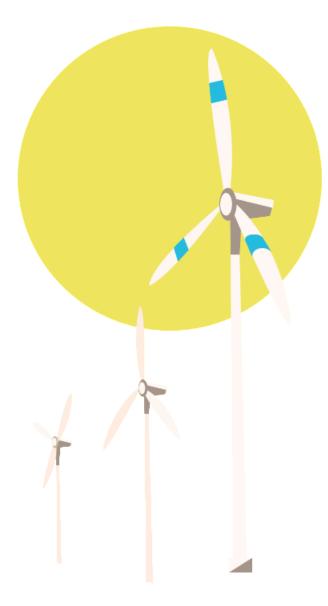
- Circulated internally by EERA (confidential)
- EERA Analysis Cluster 4 (topics of interest)

22-24 September: Co-design at the R&I Days

**EERA** attended

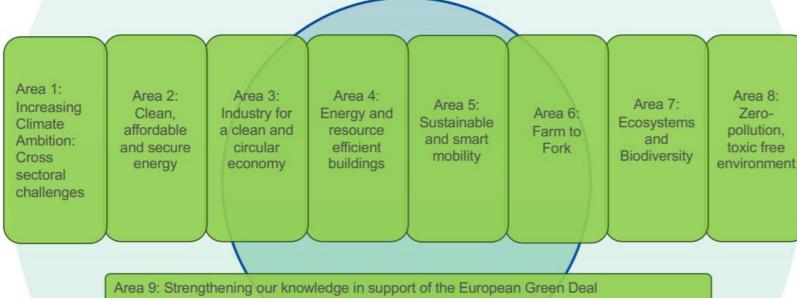






### Call areas

#### MAIN PART OF THE CALL FOCUSSING ON INNOVATIVE SOLUTIONS AND DEMONSTRATIONS



#### 8 thematic areas

Reflecting the key work streams of the EUGD

Area 10: Empowering citizens for the transition towards a climate neutral, sustainable Europe

Area 11: International cooperation (tbc)

#### **Horizontal areas**

Strengthening knowledge & empowering citizens, which offer a longer-term perspective in achieving the transformations set out in the EUGD



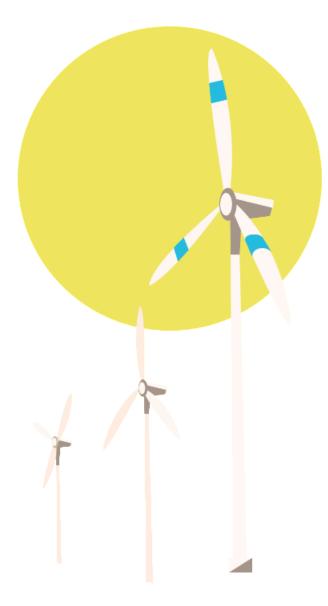
## Green Deal call vs. Previous H2020 calls (1/2)

- ▶ It aims for clear, discernible **results in the short to medium-term**, but with a perspective of long-term change.
  - ▶ 90% of the budget is dedicated to short-term impacts
  - ▶ Specific and quantified indicators indicated in the impact section
- ▶ There are fewer, but more targeted, larger and visible actions, with a **focus on rapid scalability**, **demonstration**, **dissemination and uptake**. Nevertheless, there are 8 RIAs out of 20 topics and IA starting at TRL4 or not initial TRL indicated.
- Greater grants for projects.
- ▶ Disruptive ideas are not a priority in the Green Deal Calls. The EC wants projects to **be built on other project** results and find synergies with sister projects and EU initiatives.
- ▶ Social innovation and social engagement activities is key in Green Deal calls.
- ▶ International cooperation is encouraged not only in the last area but in many topics.































# What is a lighthouse initiative?

Initiative in development to develop visionary, large-scale offshore wind energy research projects that will address grand scientific and technical challenges that are crucial for the further advancement of offshore wind energy, providing new knowledge and basis for innovation.

They will have substantial budgets (tens of million EUR) and duration (5 years or more) and bring together excellent research teams across relevant disciplines, sharing a joint goal to advance offshore wind energy and an ambitious research roadmap on how to achieve it.





# **EERA JP Wind aims for Lighthouse Initiatives**

Enable reliable power system operation with large-scale offshore wind



Make floating wind cost competitive

The topics have been used for the green deal calls. Demonstration projects benefit only few companies, so that it needs to follow-up by more extensive programmes on lower TRL.







- The two lighthouse initiatives represent great opportunities for industry, employment, innovation and an efficient carbon-free power system.
- Well established need for more Research, Innovation and Deployment
- Bringing the lighthouse initiatives forward as large visionary research projects to solve grand scientific and technical challenges will provide a solid foundation for the successful advancement of offshore wind to be a cornerstone of the energy system.





## **Discussion**

Building a dominant wind sector requires focused R&I

EERA together with ETIPWind and SETPlan IWG aim to ensure focussed funding for wind R&D from low TRL to high TRL

