

# IEA Wind TCP

*450 GW offshore wind:*

*A global R&I perspective*

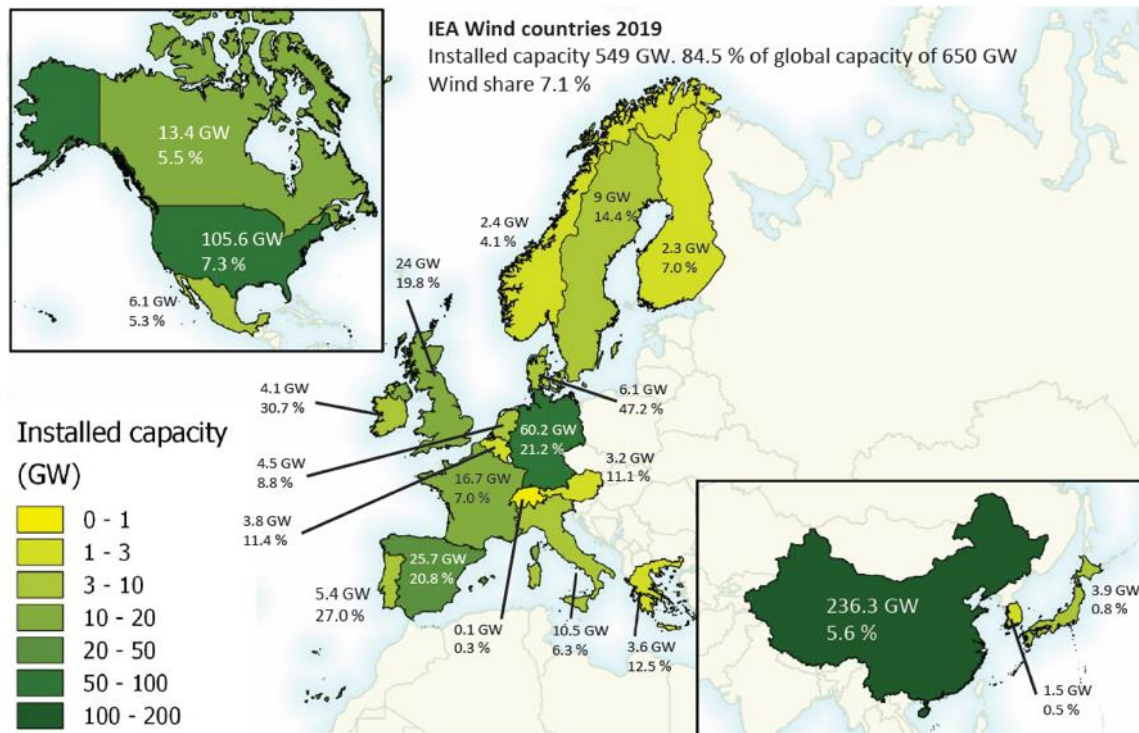
Ignacio Marti  
Executive Secretary  
ETIP-EERA Workshop  
14<sup>th</sup> September 2020

# Content

- About IEA Wind TCP
- R&I trends:
  - Investments
  - Offshore is moving south, east and west
  - Future trends
- Speed is key: collaboration

# About IEA Wind Technology Collaboration Program

- 24 members in Europe, America and Asia



# IEA Wind Website

ieawind.connectedcommunity.org



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## Recent Publications



### IEA Wind TCP 2017 Annual Report ✎

Posted in: [IEA Wind TCP Annual Reports](#)



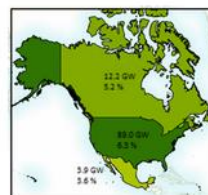
### Recommended Practice 16: Wind/PV Integration Studies, ... ✎

Posted in: [Task 26](#)



### IEA Wind TCP Task 19 Recommended

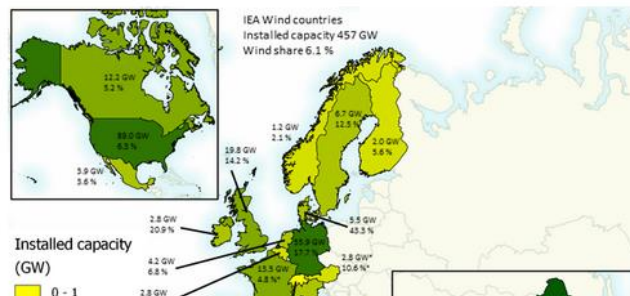
## Membership



IEA Wind countries  
Installed capacity 457 GW  
Wind share 6.1 %

Installed capacity (GW)

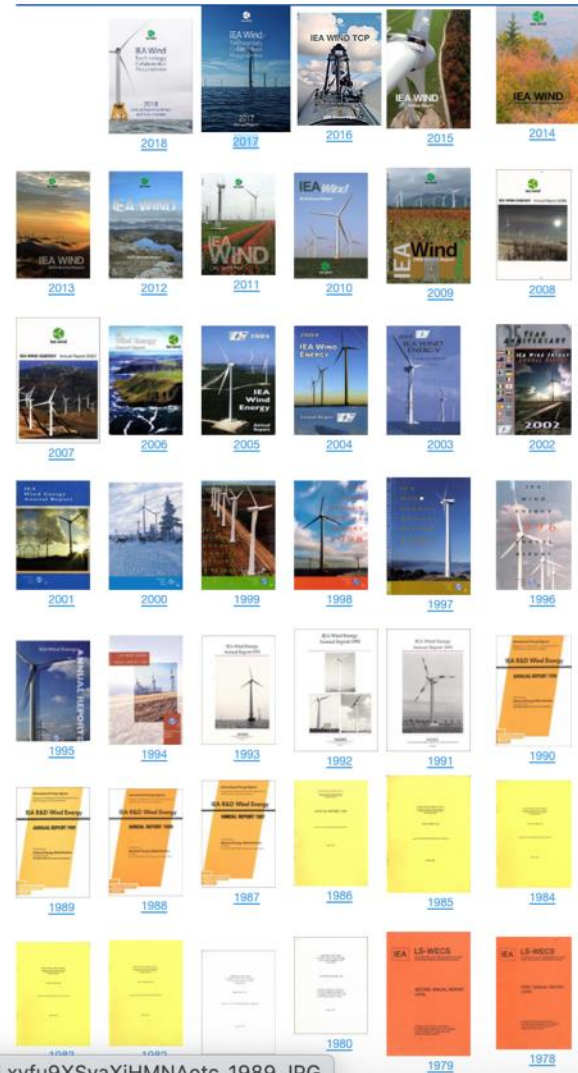
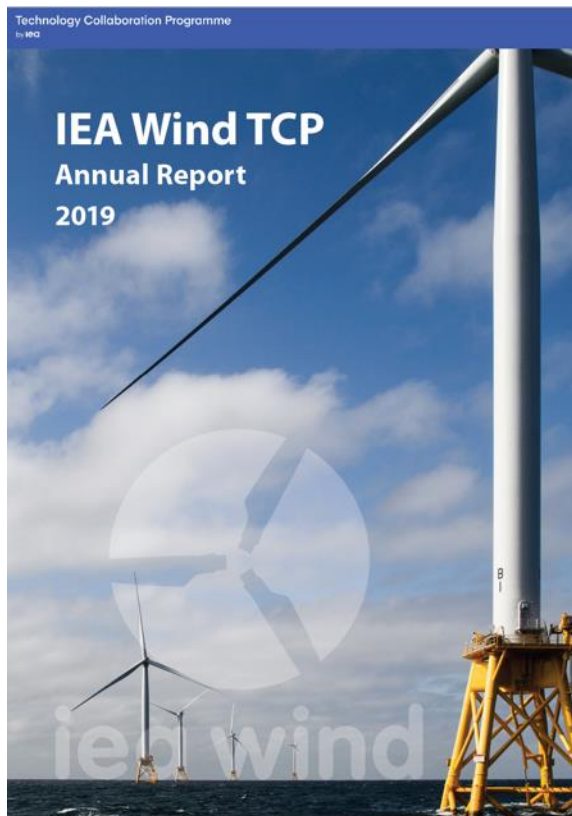
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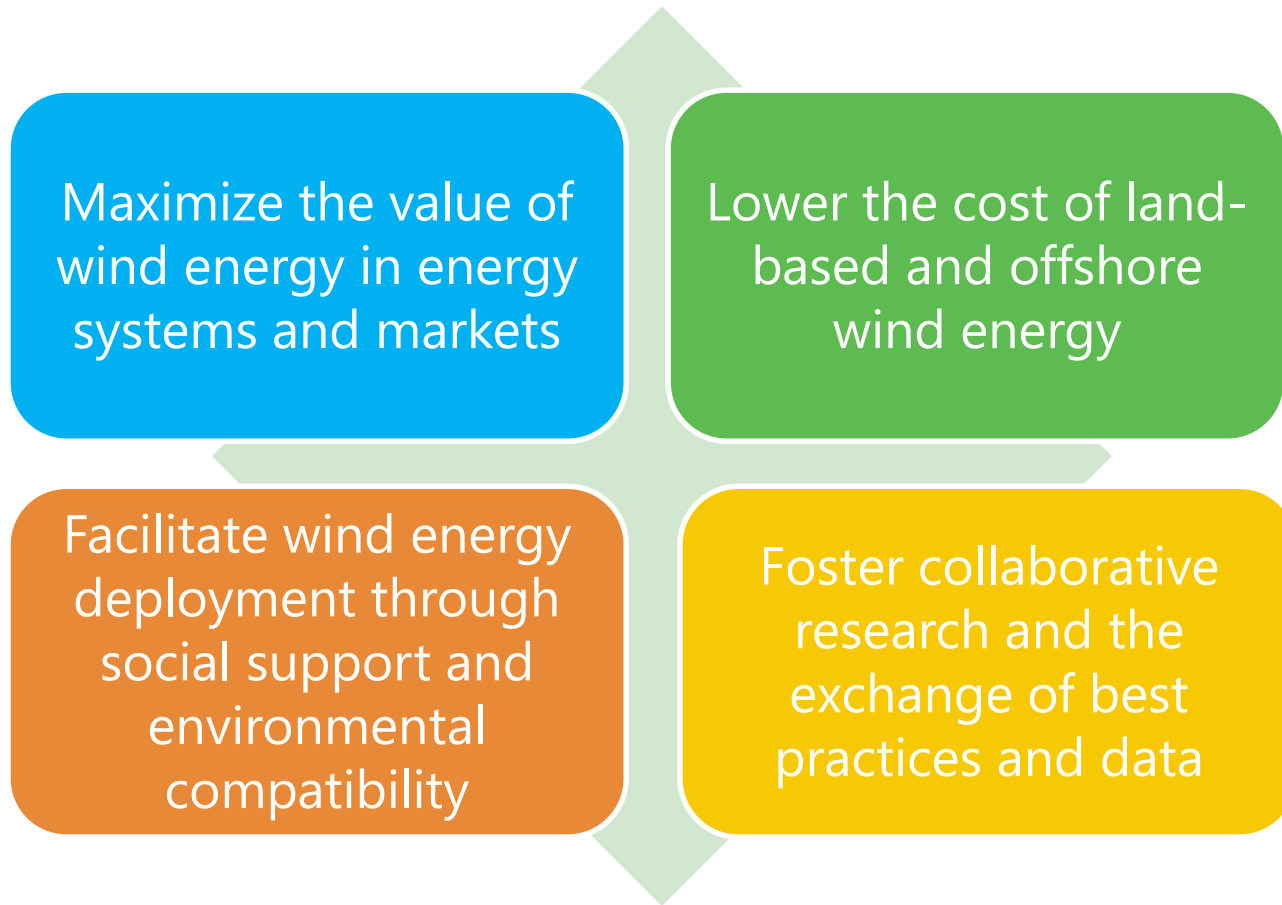
iea wind



# IEA Wind: More than 40 years of wind energy

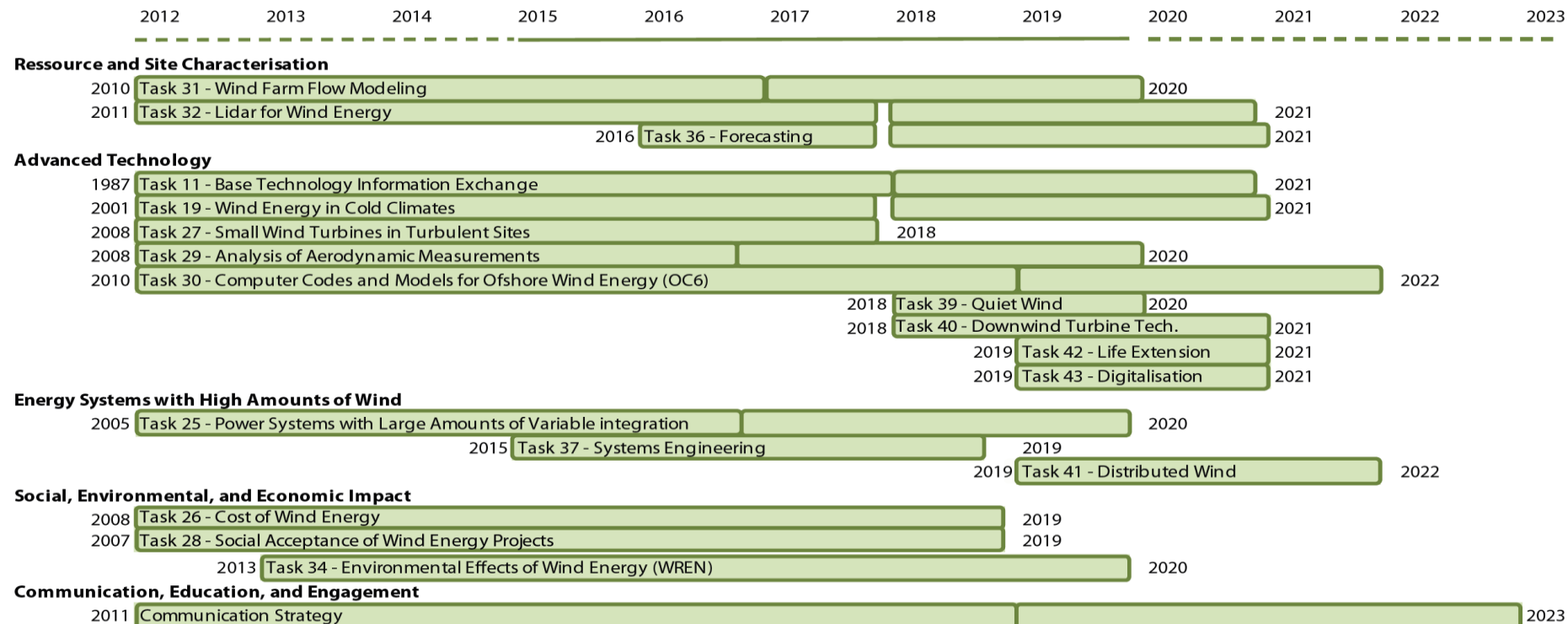


# IEA Wind TCP Strategic Objectives



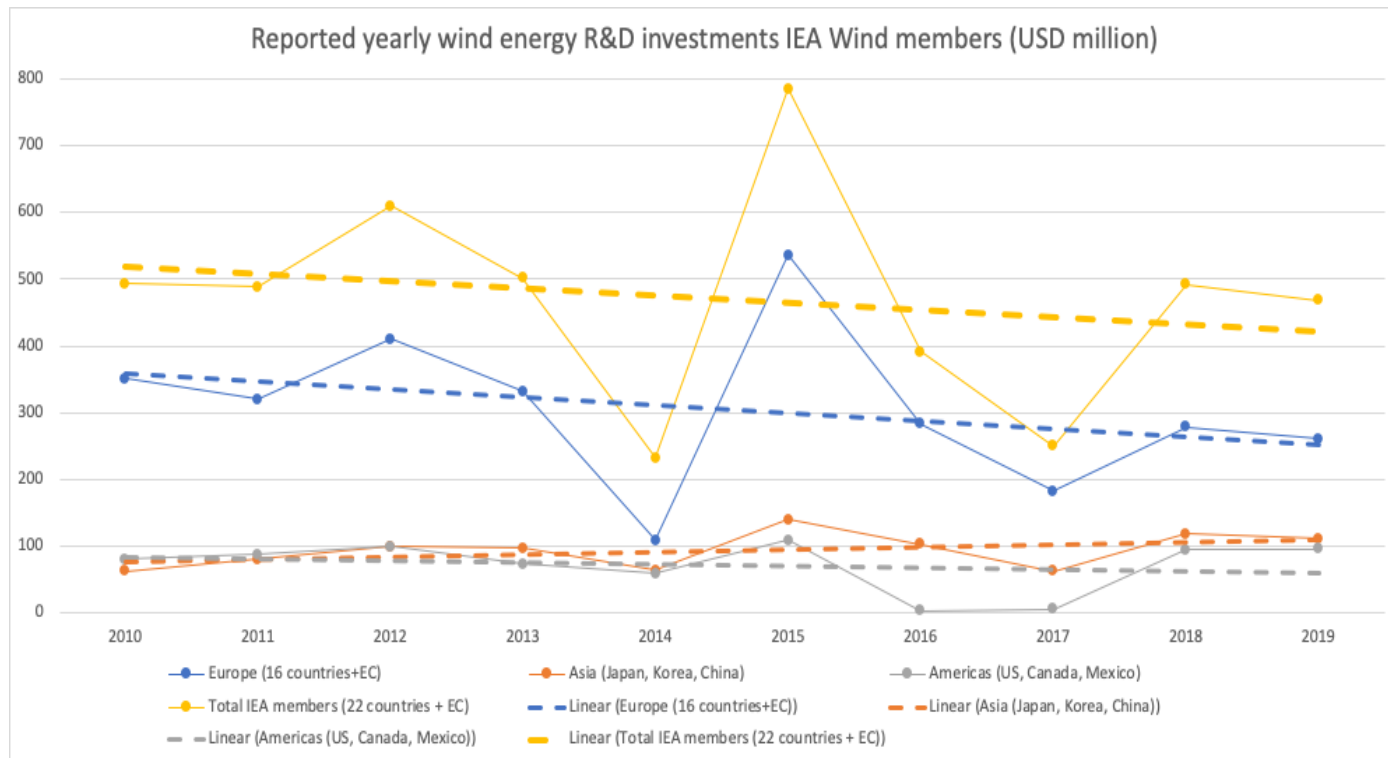
# IEA Wind collaborative Research Tasks overview

2015-2020 STRATEGIC PRIORITY AREAS AND TASKS



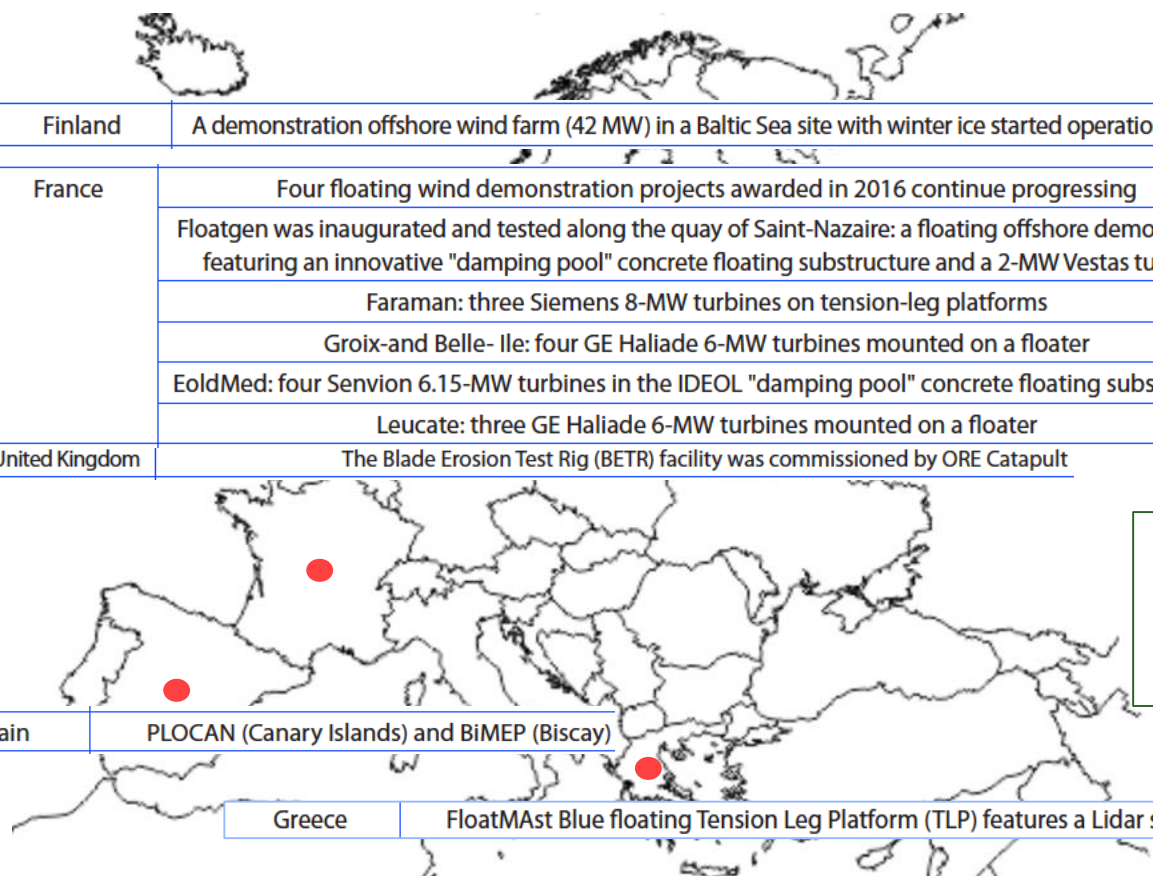
# Wind energy R&D investment trends (IEA Wind members)

- Numbers reported by IEA Wind members
- Big yearly fluctuations
- Overall negative trend (less investments over time)
- Reduction driven by Europe
- Asia is increasing R&D





# Offshore R&I continues in the North Sea but is expanding South



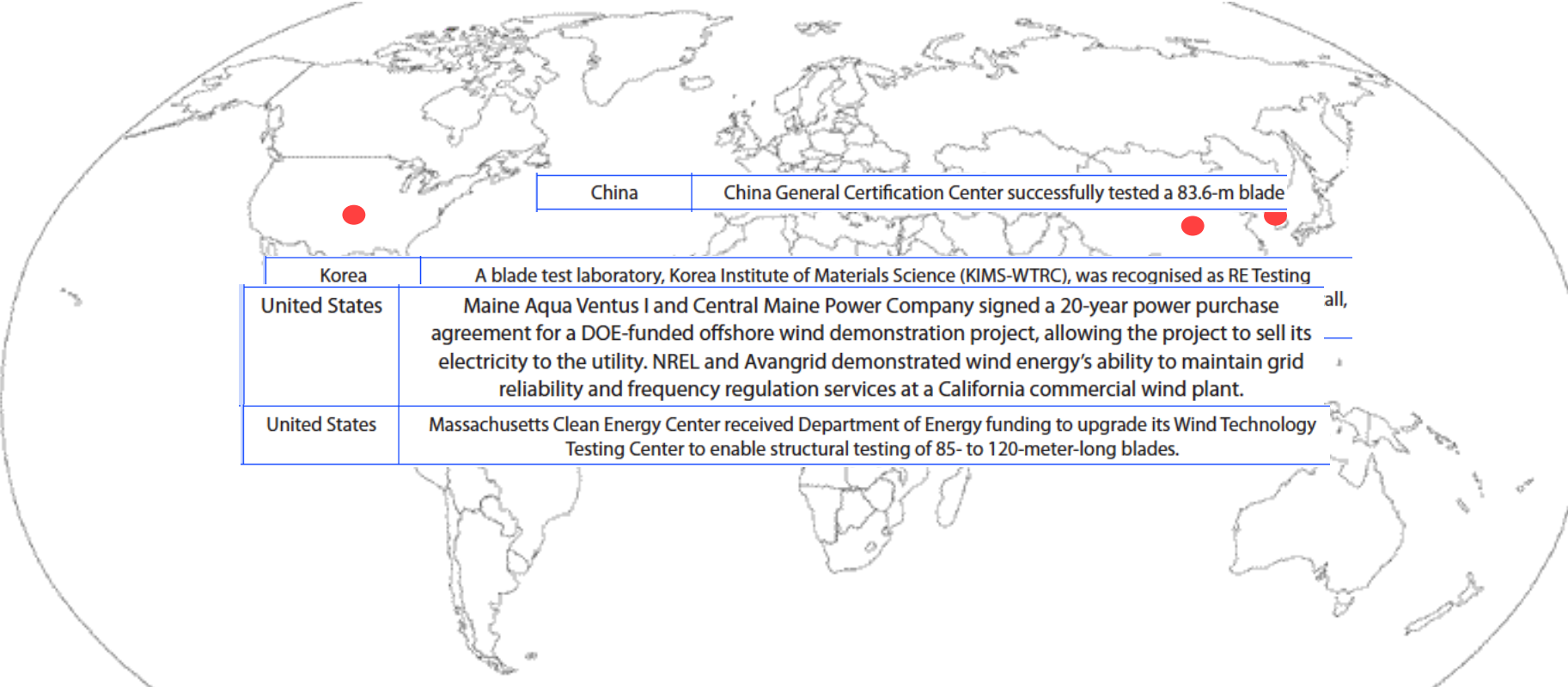
Finland	A demonstration offshore wind farm (42 MW) in a Baltic Sea site with winter ice started operation in 2017
France	Four floating wind demonstration projects awarded in 2016 continue progressing
	Floatgen was inaugurated and tested along the quay of Saint-Nazaire: a floating offshore demonstrator featuring an innovative "damping pool" concrete floating substructure and a 2-MW Vestas turbine
	Faraman: three Siemens 8-MW turbines on tension-leg platforms
	Groix-and Belle- Ile: four GE Haliade 6-MW turbines mounted on a floater
	EoldMed: four Servion 6.15-MW turbines in the IDEOL "damping pool" concrete floating substructure
	Leucate: three GE Haliade 6-MW turbines mounted on a floater
United Kingdom	The Blade Erosion Test Rig (BETR) facility was commissioned by ORE Catapult

Reported  
offshore R&I  
facilities by IEA  
Wind members

Spain PLOCAN (Canary Islands) and BiMEP (Biscay)

Greece FloatMAst Blue floating Tension Leg Platform (TLP) features a Lidar system

# Offshore R&D is also expanding East-West



A world map with a focus on the Pacific region. Three red dots are placed on the map: one in the United States (California), one in China (East Coast), and one in Korea (South). A table is overlaid on the map, providing details for each location.

China	China General Certification Center successfully tested a 83.6-m blade
Korea	A blade test laboratory, Korea Institute of Materials Science (KIMS-WTRC), was recognised as RE Testing
United States	Maine Aqua Ventus I and Central Maine Power Company signed a 20-year power purchase agreement for a DOE-funded offshore wind demonstration project, allowing the project to sell its electricity to the utility. NREL and Avangrid demonstrated wind energy's ability to maintain grid reliability and frequency regulation services at a California commercial wind plant.
United States	Massachusetts Clean Energy Center received Department of Energy funding to upgrade its Wind Technology Testing Center to enable structural testing of 85- to 120-meter-long blades.

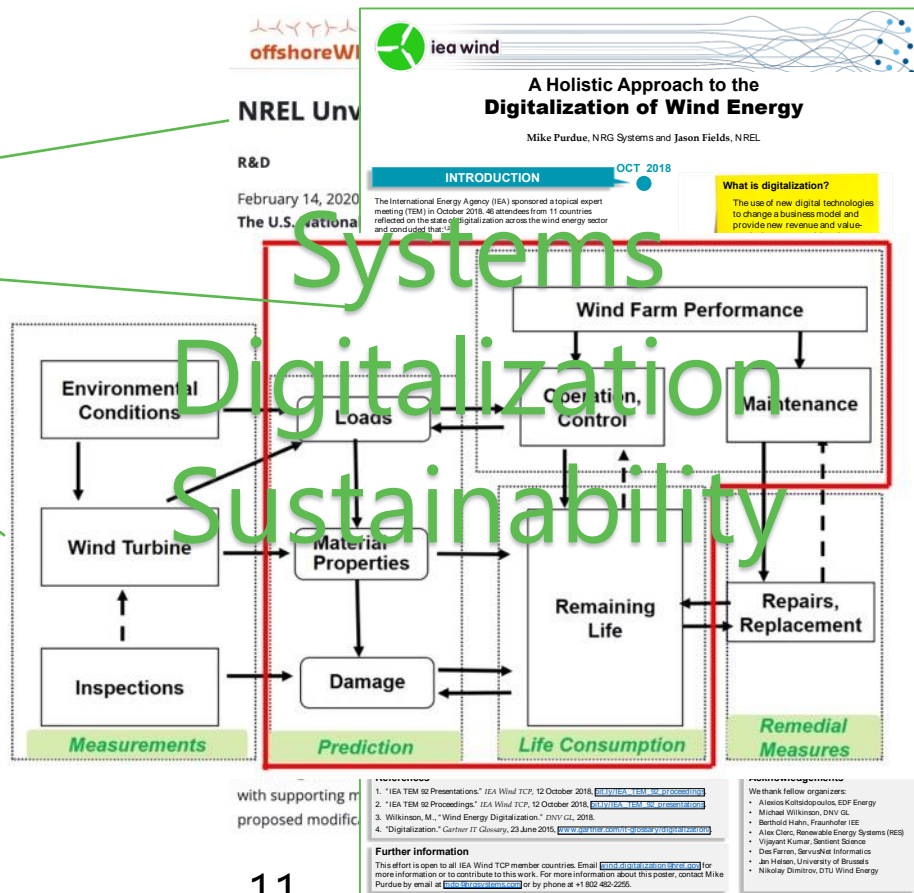
# New offshore wind R&D trends in IEA Wind

Recently started:

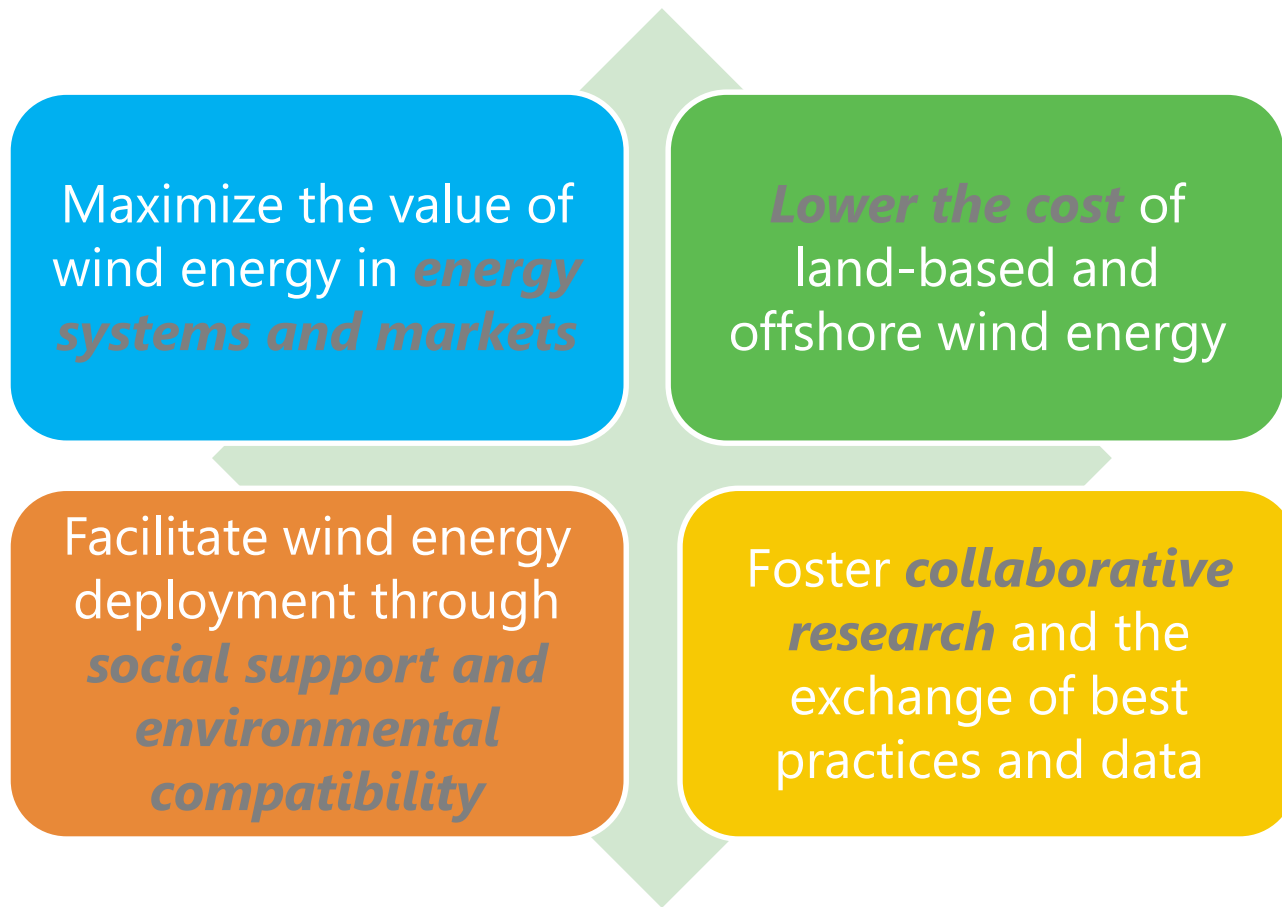
- Systems Engineering
- Digitalization
- Life Extension

Coming soon:

- Flow Farm Control
- Blade Recycling



# How to achieve 450 GW offshore wind?



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