University of Strathclyde Glasgow

UK-EU Collaboration post-BREXIT

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eawe european academy of wind energy

www.strath.ac.uk

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Outline

H2020 statistics

How the EU supports wind energy research and innovation?

ETIPWind-European Technology & Innovation partnership

Typical H2020 projects contributing to the development of offshore renewable energy

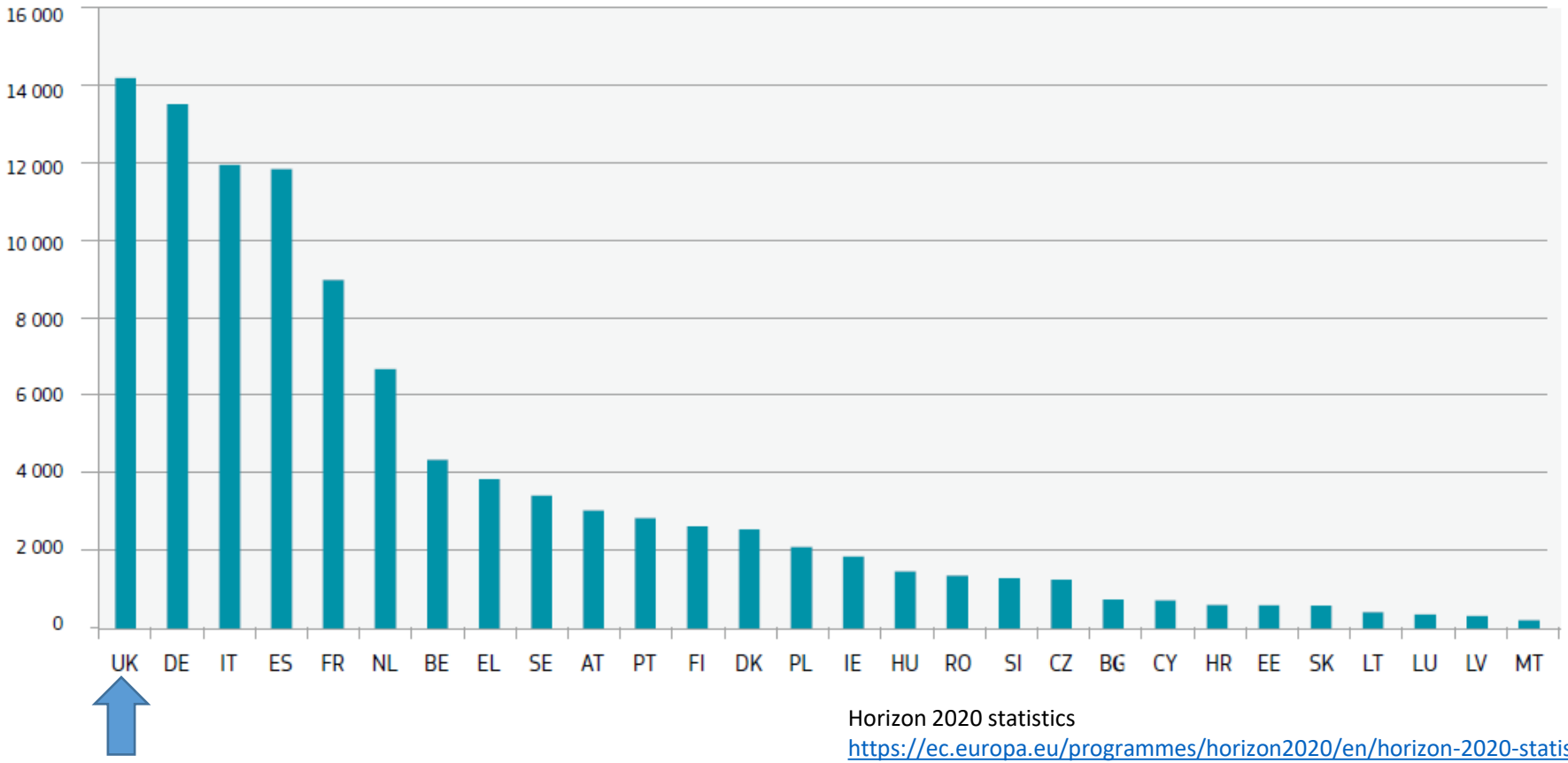
The UK-EU research deal

European Academy of Wind Energy

H2020 Statistics

How many applications have been received?

Number of eligible applications to Horizon 2020 per EU Member State

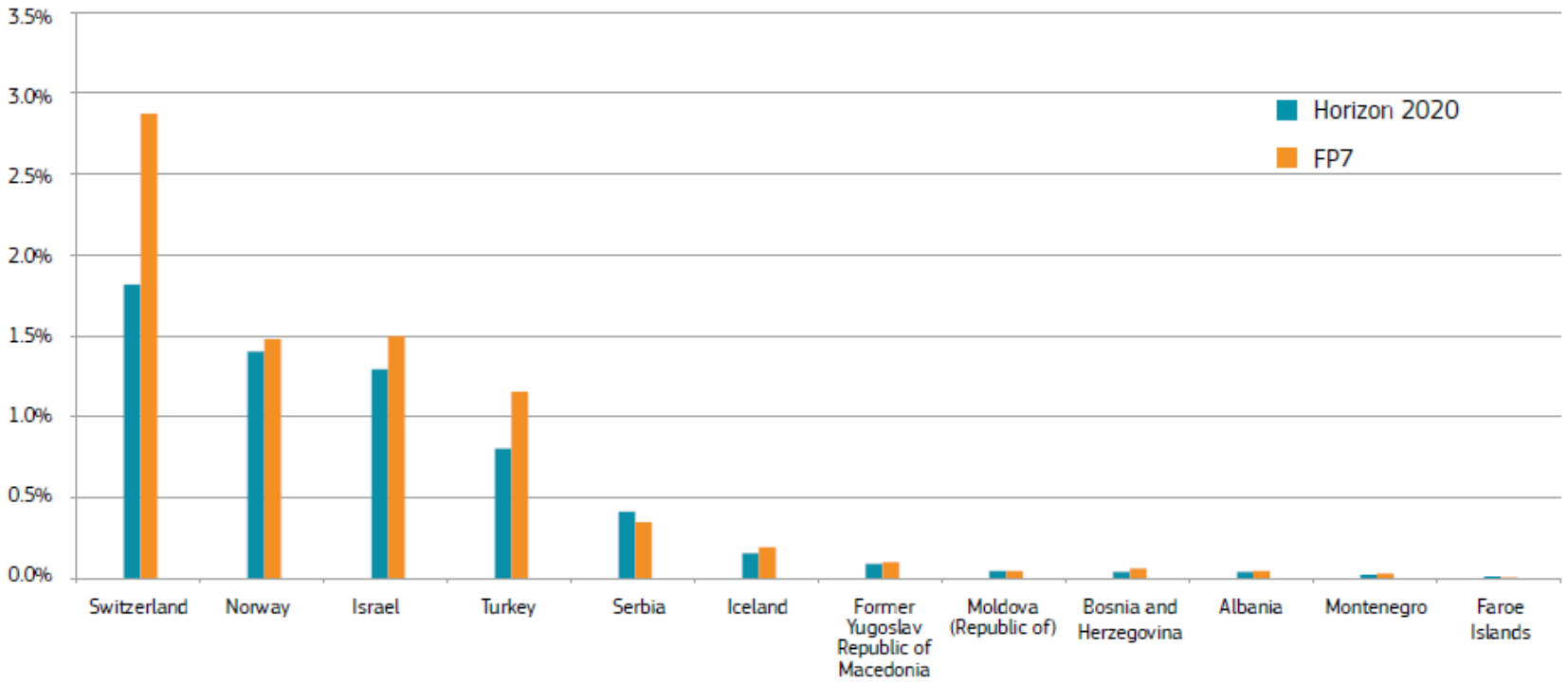


Horizon 2020 statistics
https://ec.europa.eu/programmes/horizon2020/en/horizon-2020-statistics

H2020 Statistics

How are the Associated Countries doing, compared to FP7?

Share of eligible applications per Associated Country: Horizon 2020 compared with FP7



Horizon 2020 statistics
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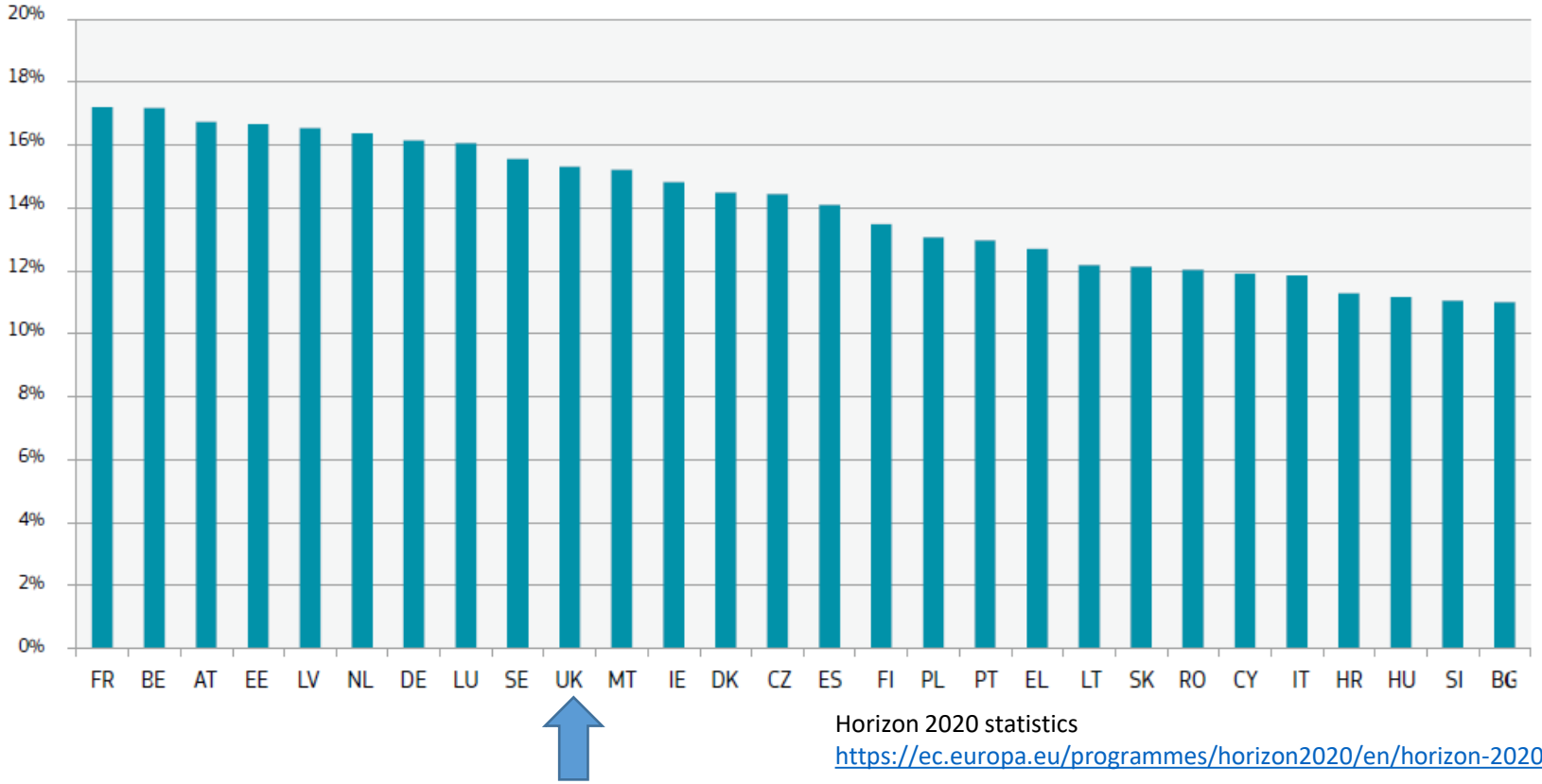
H2020 Statistics

What are the success rates of the different Member States?

Success rates for applications to Horizon 2020 per EU Member State



Horizon 2020 statistics
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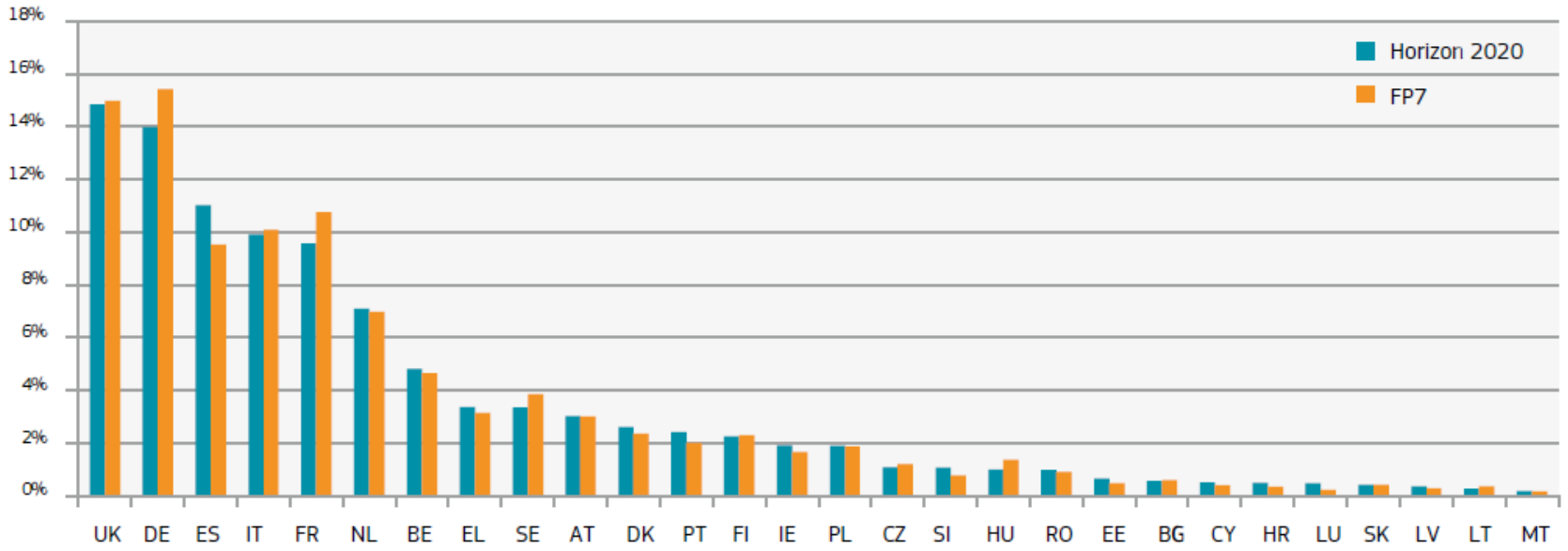
H2020 Statistics

What is each Member State's share of signed grant agreements?

Share of participations in signed grant agreements per EU Member State: Horizon 2020 compared with FP7



Horizon 2020 statistics
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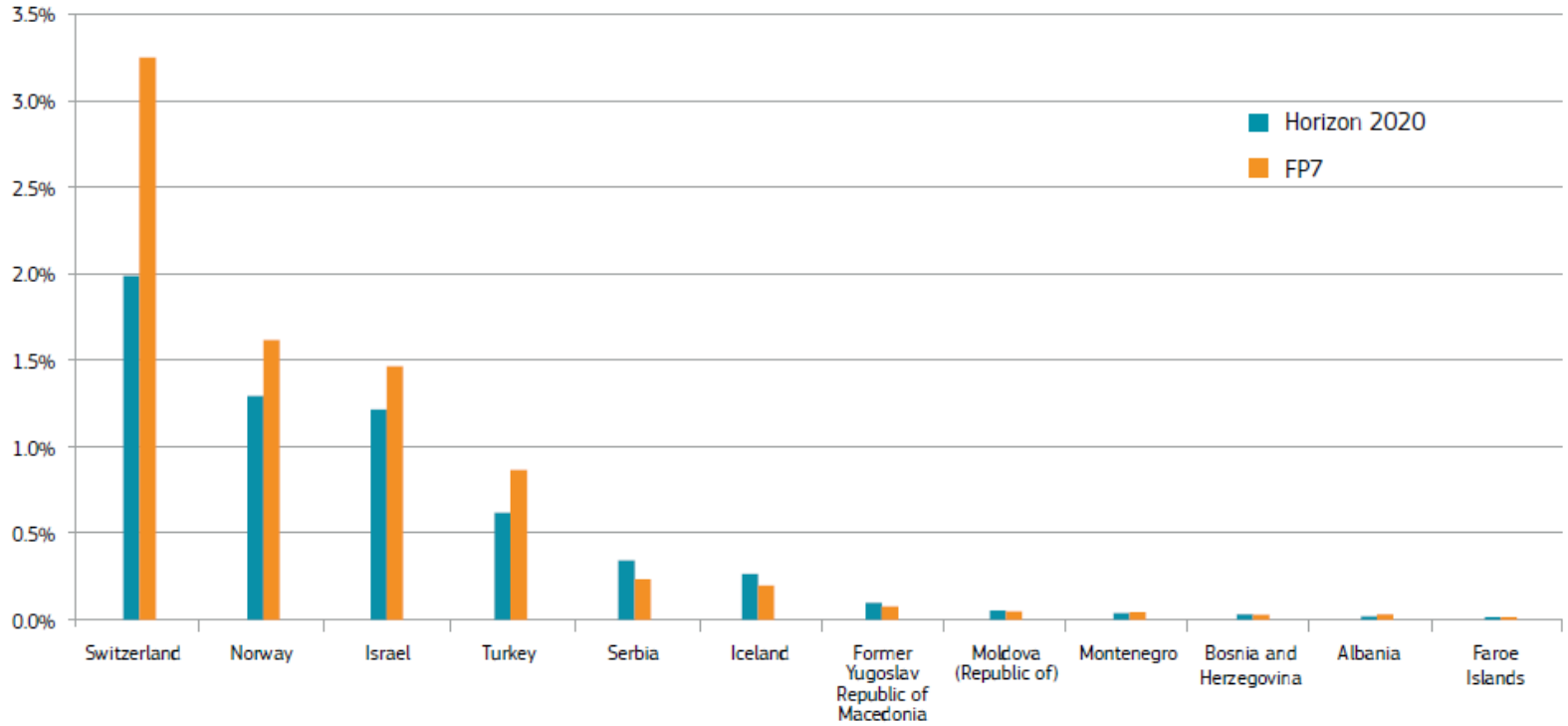
H2020 Statistics

What about participations from the Associated countries?

Share of participations in signed grant agreements per Associated country: Horizon 2020 compared with FP7



Horizon 2020 statistics
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How the EU supports wind energy research and innovation?

Horizon 2020 - calls
Calls for proposal related to energy themes in Horizon 2020. On this page you can find more information, the work programme and a link to the energy related calls.

Connecting Europe Facility - energy
CEF energy funds and finances energy infrastructure projects

LIFE+ Climate Action
Co-financing for climate change mitigation and climate change adaptation research, supporting the transition to a low-carbon and climate-resilient economy

COSME
EU Programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME) aims to make it easier for SMEs to access finance in all phases of their lifecycle

Horizon 2020 - access to risk finance
Gain easier access to debt and equity financing, such as InnovFin, managed by the European Investment Bank Group and European Investment Fund

NER 300 programme
Funding for innovative low-carbon technology research with focus on environmentally safe Carbon Capture and Storage (CCS) and innovative renewable energy technologies

European structural and investment funds (ESIF)
Energy research related calls may be found in these funds

Prize for renewable energy islands
Prize rewarding achievements in local renewable energy production for electricity, heating, cooling and transport on islands.

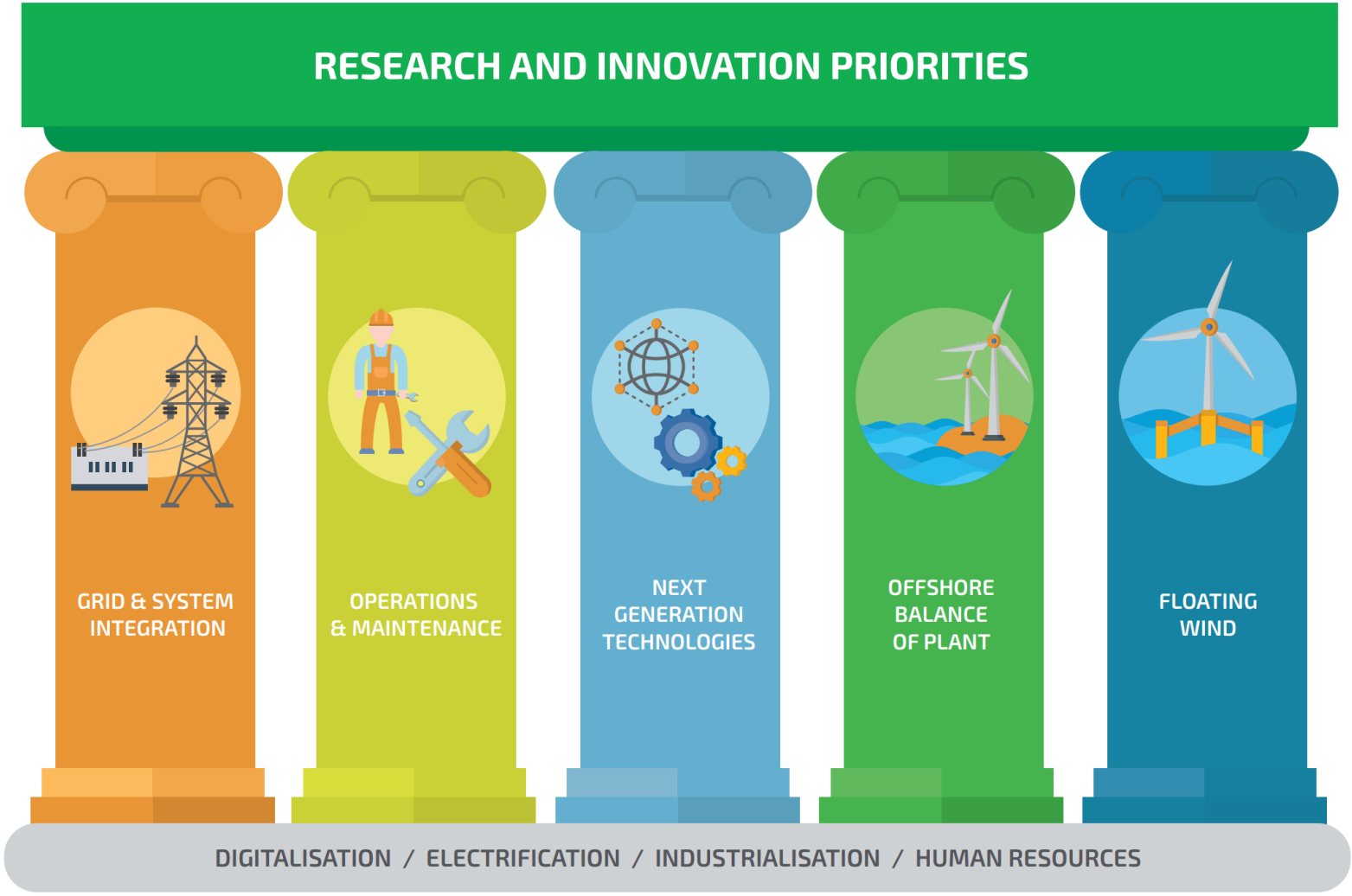
ETIPWind-European Technology & Innovation partnership

Recommendations for Horizon Europe

- Earmark 5 % of the Horizon Europe budget on Climate, Energy and Mobility for wind energy Research & Innovation;
- Support technologies that establish a flexible energy system with wind energy at the core;
- Continue incremental investments in established technologies such as onshore wind;
- Invest in new technologies to support the leap towards bigger and more efficient wind turbines;
- Invest in enabling technologies to electrify heating & cooling, industrial processes and transport;
- Facilitate market-uptake of floating offshore wind concepts through regulatory improvements.

Strategic research and innovation agenda 2018
https://etipwind.eu/wp-content/uploads/2018-Strategic-Research-Innovation-Agenda.pdf

ETIPWind-European Technology & Innovation partnership



Strategic research and innovation agenda 2018 https://etipwind.eu/wp-content/uploads/2018-Strategic-Research-Innovation-Agenda.pdf

ETIPWind-European Technology & Innovation partnership

ETIP Wind
EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON WIND ENERGY

Research & Innovation priorities

	Pillar 1 Grid & system integration	Pillar 2 Operations & Maintenance	Pillar 3 Next generation technologies	Pillar 4 Offshore balance of plant	Pillar 5 Floating wind
1	Flexibility & ancillary services' markets	Smart wind farm	Data driven design & operations methods	Systems engineering	Holistic floating wind turbine design
		Performance management		Offshore grid design	
2	Grid expansion	Lifetime management	High fidelity models	Substructures design	Development of sectoral synergies
	Storage	Awareness of the environment external & internal conditions	Next generation components, materials, towers and support structures		Establishment of a supportive regulatory framework
			Fundamental research into radical & disruptive innovations		
3	Hybrid systems		Material recycling	Site conditions	Development of a stable supply chain
					Prepare market uptake and wide scale deployment of floating wind

Strategic research and innovation agenda 2018 https://etipwind.eu/wp-content/uploads/2018-Strategic-Research-Innovation-Agenda.pdf

Typical H2020 projects contributing to the development of offshore renewable energy

A DEMONSTRATION OF POWER

FLAGSHIP will demonstrate a cost-effective 10MW floating offshore wind turbine using a semi-submersible concrete floating platform that includes an easy-to-install anchoring design and novel mooring configuration. It will be the starting point for the large-scale assembly for 500 MW future commercial floating wind farms.

DO IT YOURSELF SOLUTIONS

ELICAN will develop a self-installing precast concrete telescopic tower and foundation for deep offshore wind energy. The design will allow for a full inshore preassembly of the complete system and the crane-free offshore installation of the complete substructure and wind turbine, without the use of heavy-lift vessels.

RIDE WITH THE TIDE

FloTEC will demonstrate a 72-metre-long floating superstructure for the generation of power from tidal energy, using two 1 MW turbines. With rotor diameters reaching 20 m, it will boast a 600 m2 rotor area, the largest ever seen on a single tidal energy generation platform.

ON THE CREST OF THE WAVE

IMAGINE will develop a wave energy generator with a limited number of components and a more compact architecture, resulting in reduced final cost, increased mechanical efficiency and a higher power density.

A TITANIC EFFORT TO ACHIEVE COST EFFICIENCIES

SEA-TITAN will develop a next-generation, standardised and open-source Power Take Off technology that can be applied to different wave or tidal power devices.

OPERA AT SEA

OPERA has collected, analysed and shared open-sea operating data and experience to validate and de-risk several industrial innovations for wave energy, taking them from a laboratory environment to a marine environment, opening the way to long-term cost-reduction

RESEARCH & INNOVATION TO BOOST THE DEVELOPMENT OF OFFSHORE RENEWABLE ENERGY
https://ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_offshore-renewable-energy.pdf

UK-EU research deal

- 2007-2013: UK participated in over 10,000 projects with over 18,000 participants, securing ~€7 billion in funding (15% of total awarded funding)
- 2014-2019: UK has secured around €5.9 billion in funding from Horizon 2020 (13.5% of the total funding).
- Annual share of EU research funding has fallen by nearly a third since 2015.
- Horizon Europe research scheme, has a duration of seven-years and budget of €95.5 billion.
- Negotiations continue
- Becoming a top-tier associate member country in Horizon Europe means UK-based researchers will be allowed to coordinate projects.
- The UK is out of the EU's Erasmus+ university exchange programme, but a £100 million replacement programme, called the Turing Scheme, will start in September 2021.

UK-EU research deal at a glance
https://sciencebusiness.net/framework-programmes/news/uk-eu-research-deal-glance

Fostering wind energy science and education

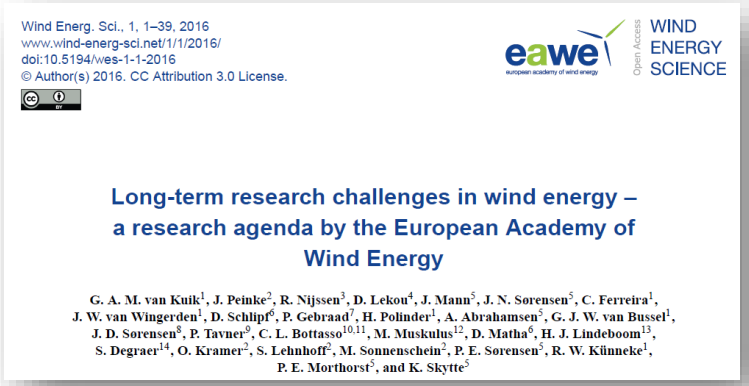
Vision: An international community that promotes and supports the development of wind energy science to exploit wind energy to its full potential for the benefit of the world

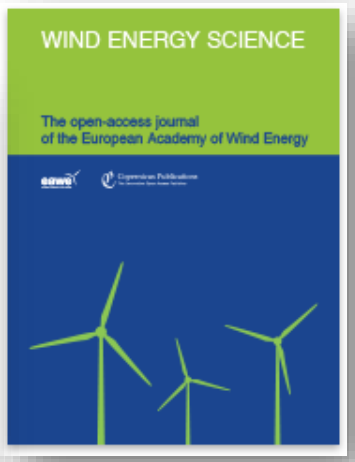
eawe
european academy of wind energy

Our Educational Activities

Publications:

- Wind Energy Science Journal
- Research agenda





Conferences:

- EAWE Annual PhD Seminar
- TORQUE (even years, since 2004)
- WESC (odd years, since 2017)
- Scientific track of WindEurope Event
- Workshops (WAKE Conference), summer schools

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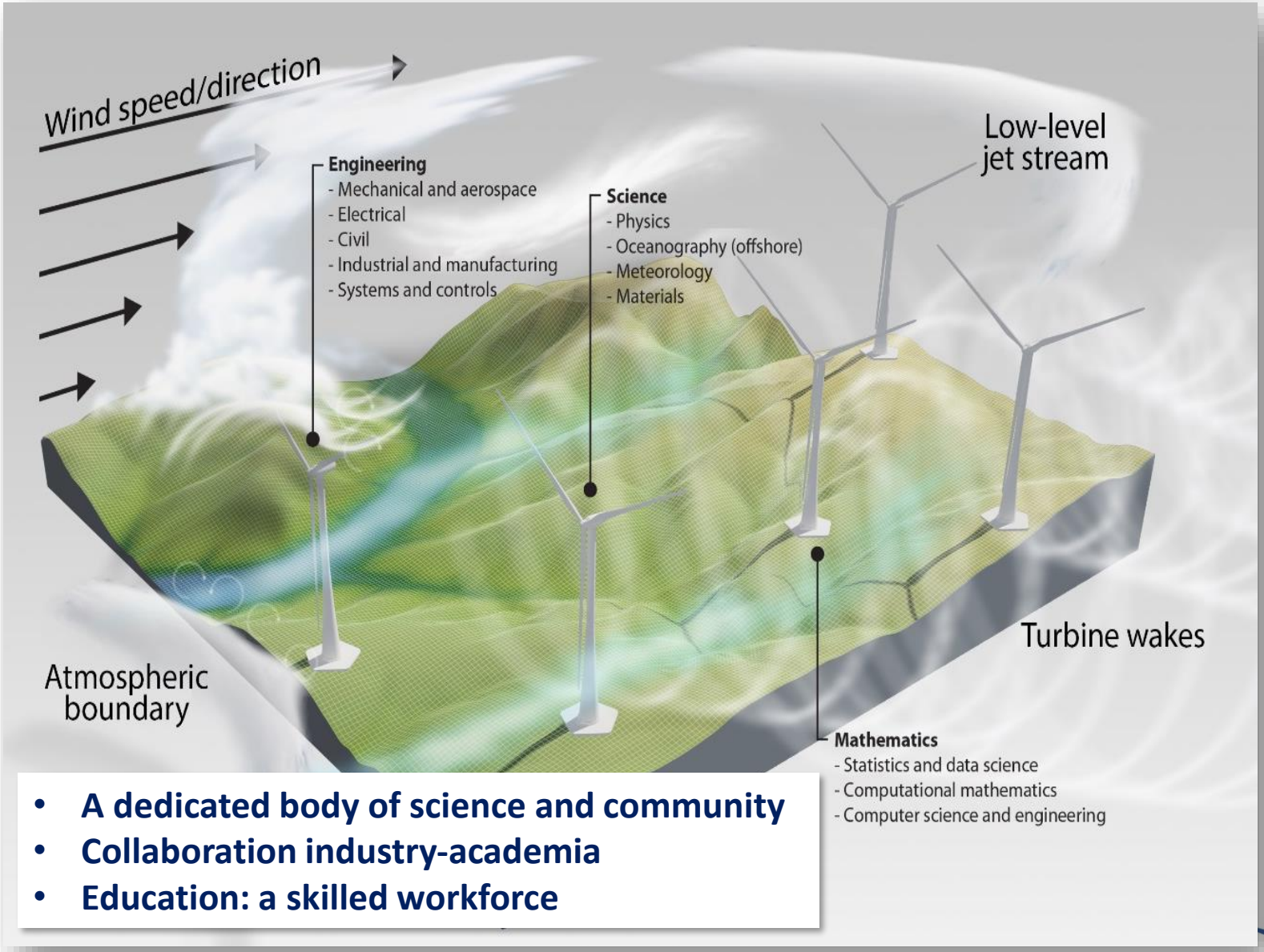
Grand challenges in wind energy science



- **A dedicated body of science and community**
- **Collaboration industry-academia**
- **Education: a skilled workforce**

(Source: P. Veers et al., Grand challenges in the science of wind energy, Science 2019)

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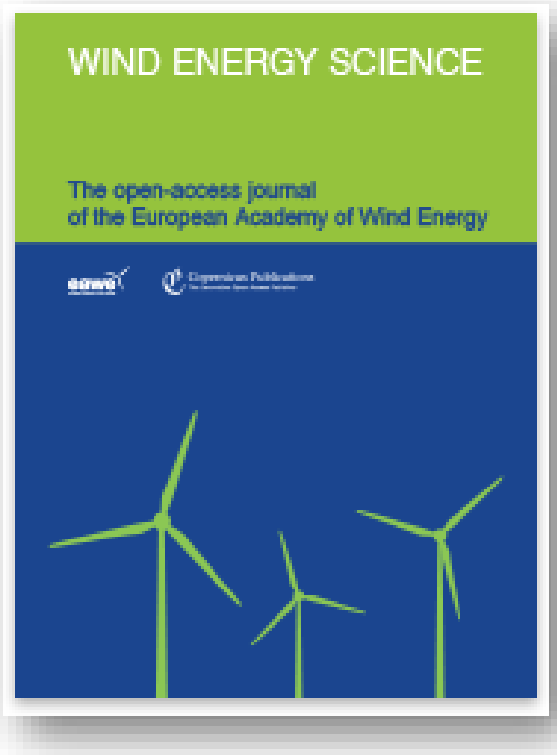
Wind Energy Science



- Open-access
- Indexed in Web of Science (WoS)
- Interactive peer-review
  - Post your own comments
  - Paper is online and visible soon after submission

Please consider publishing your latest research in WES!

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Committees

Operational committees	Wind Energy Science
	Excellent Young Wind Doctor Award Committee
	EAWE WindEurope Scientific Track (WEST) Committee
	Publications Committee
	Science Communication Committee
	Strategy Committee
	PhD student Committee
Technical committees	Airborne Wind Energy Committee
	Drivetrain Committee
	Small Wind Turbines Committee
	Wind-Tunnel Testing Committee

Summary

- The UK has been an integral part of former FP and H2020 research actions.
- Eligible organisations have received extensive funding and contributed valuable outcomes to the development of renewable energy technologies
- Negotiations are ongoing for opportunities for participation and contribution of UK organisations to the Horizon Europe Scheme
- EU based organisations, such as EAWE, will continue to consider participation of members with extensive track record, such as the UK, as a key contributor towards achieving net-zero targets

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