ETIP Wind

EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON **WIND ENERGY**

Executive Committee meeting

June 2020

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Alexander Vandenberghe

Advisor Research & Innovation

Competition compliance reminder

WindEurope and its members are committed to full and fair competition, and neither WindEurope nor its activities, working groups or task forces shall be used in any way inconsistent with relevant competition laws. In order to promote the compliance with these laws, WindEurope has adopted this Competition Compliance Policy in which the basic rules for competition compliance are set out.

TIMING	AGENDA ITEM	SCOPE
14:00 – 14:05	**Introduction and welcome to new members** By Aidan Cronin, Executive Committee Chair	For information
14:05 – 14:10	**"Tour de table" of new EXCO members**	For information
14:10– 14:20	**Update on H2020 Green deal call** By Carlos-Eduardo Lima da Cunha, Policy Officer, DG RTD	For information
14:20 – 14:50	**ETIPWind factsheet floating wind** By ETIPWind secretariat • Presentation of final draft; and • Adoption by EXCO.	For decision
14:50 – 15:00	**Election of the new ETIPWind EXCO chair** • Presentation of the voting procedures; • Introduction of the candidat(e)s; and • Online voting.	For decision
15:00 – 15:15	**Opening statement of the new chair**	For discussion
15:15 – 15:45	**2021 ETIPWind publication: process and next steps** By ETIPWind secretariat	For discussion
15:45 – 15:50	**Programme of joint ETIPWind and SETWind workshops** By ETIPWind secretariat	For information
15:50 – 15:55	**AOB**	For information
15:55 – 16:00	**Closing remarks** By ETIPWind EXCO Chair	For information

Tour de table

Horizon 2020
Green Deal call

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Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies and their integration into the energy system

Scope:

Projects shall **demonstrate at sea** critical offshore renewable energy innovations considering the efficiency, reliability, sustainability and circularity that is needed in all areas of the offshore renewable energy system, notably:

- **Offshore renewable energy power generating systems**: innovative large scale integrated systems, floaters and substructures, mooring and anchoring systems specifically conceived for floating offshore considering the varied subsea conditions.
- **Grid infrastructure**: innovative Direct Current (DC), AC/DC hybrid technologies and systems as a supporting step towards large offshore HVDC grids (e.g.multi-vendor Multi-Terminal HVDC (MT HVDC) systems, grid forming converter, HVDC diode rectifiers, Modula Multilevel Converters (MMC), DC Circuit Breaker (DCCB); DC/DC converter and DC/power hub) and their control and management system; for floating renewable energy technologies: innovative dynamic inter-device/inter-array cables and connections to converter stations at sea or offshore hubs.
- **Power to X /storage systems**: innovative offshore storage and/or power to X systems to maximise the use of offshore resources.

Proposals shall address **at least the offshore renewable power generating systems and the related energy system integration requirements**, and may address grid infrastructure and/or power to X / storage systems. Multi-functional platforms can be considered.

Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies and their integration into the energy system

Scope:

Proposals shall address also the following:

- Industrial design and manufacturing processes, installation methods, transport, operation & maintenance, supply chains and the related digital infrastructures.
- Circularity, regulatory, market and financial challenges.
- Marine spatial planning issues (making multi-use of the seas possible, but also considering optimising environmental impacts) as well as currently known barriers such as costs, public acceptance and vulnerability to changing climate conditions in offshore areas.

Factsheet on Floating Offshore Wind

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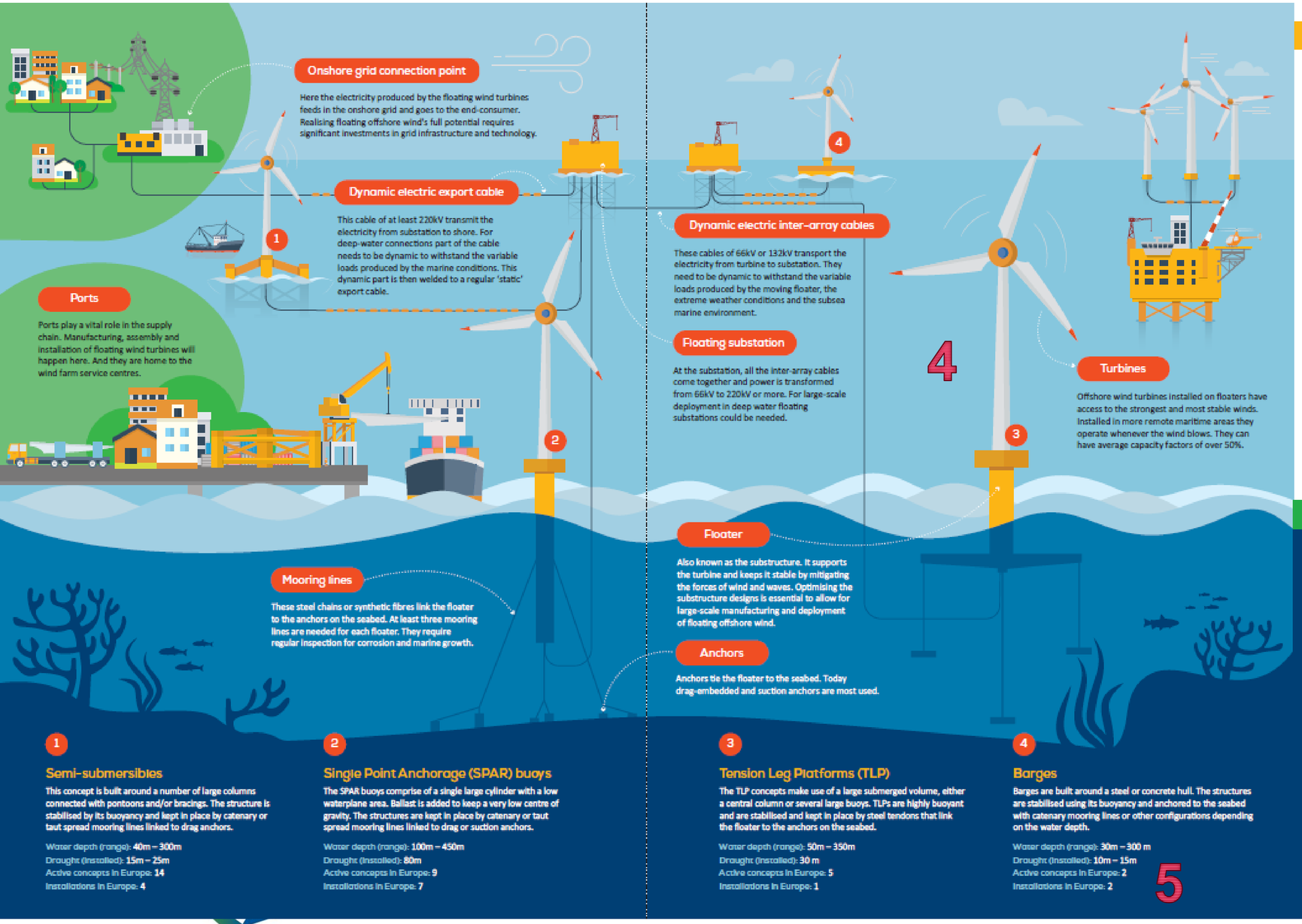


1 Semi-submersibles

This concept is built around a number of large columns connected with pontoons and/or bracings. The structure is stabilised by its buoyancy and kept in place by catenary or taut spread mooring lines linked to drag anchors.

Water depth (range): 40m – 300m
Draught (installed): 15m – 25m
Active concepts in Europe: 14
Installations in Europe: 4

2 Single Point Anchorage (SPAR) buoys

The SPAR buoys comprise of a single large cylinder with a low waterplane area. Ballast is added to keep a very low centre of gravity. The structures are kept in place by catenary or taut spread mooring lines linked to drag or suction anchors.

Water depth (range): 100m – 450m
Draught (installed): 80m
Active concepts in Europe: 9
Installations in Europe: 7

3 Tension Leg Platforms (TLP)

The TLP concepts make use of a large submerged volume, either a central column or several large buoys. TLPs are highly buoyant and are stabilised and kept in place by steel tendons that link the floater to the anchors on the seabed.

Water depth (range): 50m – 350m
Draught (installed): 30 m
Active concepts in Europe: 5
Installations in Europe: 1

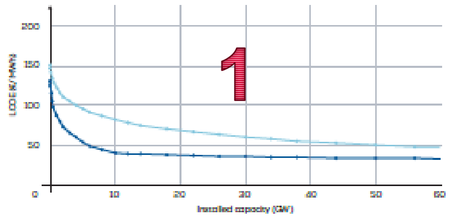
4 Barges

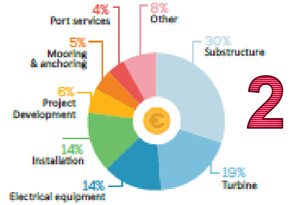
Barges are built around a steel or concrete hull. The structures are stabilised using its buoyancy and anchored to the seabed with catenary mooring lines or other configurations depending on the water depth.

Water depth (range): 30m – 300 m
Draught (installed): 10m – 15m
Active concepts in Europe: 2
Installations in Europe: 2

How Europe can become the global leader

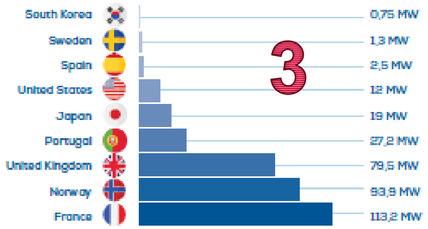
Impact of policies and volumes on costs





CAPEX of floating offshore wind

Cumulate by 2022



Europe
Concepts: 34
Installed capacity: 48,5 MW
Technical potential: 4,000 GW
Volume by 2025: XXX MW

Rest of the World
Concepts: 16
Installed capacity: 16 MW
Technical potential: >14,000 GW
Volume by 2025: XXX MW

How floating offshore wind benefits Europe

Social and environmental

Maximising clean energy: Floating offshore wind will unlock 80% of offshore wind resources located in deep waters (> 50m).

Geographical spread: Floating offshore wind turbines will be in areas where bottom-fixed wind turbines are not economically attractive. This geographic spread smoothens offshore wind generation and contributes to the adequacy of the electrical system.

Lower environmental footprint: Floating offshore wind turbines are assembled onshore and towed to site. This reduces the impact on the marine environment during installation. Floating offshore wind farms could also become safe havens for recovering marine fauna.

Decarbonising islands: Floating offshore wind will be the prime technology to reduce the dependency of Europe's islands of expensive and polluting fossil-fuel-powered generators.

Economic

Synergies with bottom-fixed offshore wind: floating technologies can build on the expertise of Europe's bottom-fixed offshore wind sector. Moving into deeper waters is the logical next step for Europe's offshore wind industry.

New businesses and export potential: Floating offshore wind requires a specific supply chain for mooring, electrical cabling and installation. Capitalising on their technology leadership European companies can tap into a global market of up to 18,000 GW and generate export revenues back home.

Job creation: Floating offshore wind is heavily dependent on local supply chains and will stimulate job growth in marine industries. Industrialised coastal regions affected by the decline in shipbuilding will gain the most from reorienting their infrastructure towards floating offshore wind.

Reorienting Europe's offshore expertise: Floating offshore wind is an opportunity to repurpose Europe's Oil and Gas infrastructure and provide more sustainable job alternatives to Europe's offshore workforce.

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How to make floating offshore wind a European success story

European floating offshore wind needs today urgent action from policymakers to unleash large-scale commercialisation and deliver the clean, competitive and reliable energy society wants. It is also a unique opportunity for Europe to capitalise on its technology leadership. Floating offshore wind is a fast-maturing sector with a global potential of well over 18,000 GW. And European companies have the tools to take the lead.

A supportive regulatory framework capitalising on the knowledge gained through Research & Innovation and the first pilot projects will unlock industrialisation and faster market deployment. In the coming years as more floating offshore wind projects come online, the industry will demonstrate its commercial viability, similar to the experience of the bottom-fixed offshore sector.

This factsheet provides policymakers with an overview of the current state of art in floating offshore wind technology and the measures needed for its commercialisation. Implementing the outlined recommendations will allow Europe to take a decisive lead in a vast and untapped global market and to support European competitiveness.

Policy recommendations

Bring technology to maturity

Provide grants for industrialisation
Serial production is a main driver of cost reductions. The European Commission should prioritise funding for industrialisation in Horizon Europe and the ETS Innovation Fund aligned with the ETIPWind Roadmap.

Build up a floating offshore wind portfolio
Meeting global demand will require different floating designs to reach maturity fast. Each call of the ETS Innovation Fund should dedicate funding for first-of-a-kind demonstrations of floating designs.

Incentivise pre-commercial procurement of floating offshore wind energy
Pre-commercial deployment is important to validate new technologies. The European Commission and Member States should facilitate the installation of pre-commercial projects, ease project permitting and allow specific procurement rates.

Start up an Important Project of Common European Interest (IPCEI) on floating offshore wind
Member States should cooperate and channel funds through an IPCEI to accelerate the development and deployment of floating technology.

Set up strategic partnerships
To fully unlock the potential of floating offshore wind, the EU should create a dedicated public private Research & Innovation partnership on offshore wind as part of Horizon Europe.

Accelerate large-scale deployment

Offer visibility for investments
National Governments must spell out clear ambitions for floating wind in their 2030 National Plans. The European Commission should publish the aggregated European volume giving clear market visibility for investors.

Hold technology specific auctions
National Governments should hold dedicated auction rounds for floating wind technology, similar to the French and UK plans. Europe needs at least 4 GW of floating offshore wind by 2030.

Coordinate auctions timeline
Member States should coordinate their auction timelines and supporting policies for floating offshore wind. The European Commission must assess the feasibility of auction timelines in the 2030 National Plans.

Invest in enabling infrastructure
The EU should upgrade its coastal infrastructure in preparation of large-scale deployment of floating offshore wind. Investments could be channeled through the Cohesion and Regional Development funds or the Connecting Europe Facility.

Create regional cooperation fora
The EU should establish dedicated intergovernmental workstreams on floating wind, based on experiences of the North Sea Energy Forum and the Energy Islands Initiative.

Facilitate access to finance
The European Investment Bank should offer more de-risking instruments to attract private capital. The EU should dedicate funding windows to floating offshore wind as part of the EU Recovery Strategy.

ETIPWind®, the European Technology and Innovation Platform on Wind Energy, connects Europe's wind energy community. Key stakeholders involved in the platform include the wind energy industry, political stakeholders and research institutions.

The ETIPWind was established in 2016 to inform Research & Innovation policy at European and national level. ETIPWind provides a public platform to wind energy stakeholders to identify common Research & Innovation (R&I) priorities and to foster breakthrough innovations in the sector.

Its recommendations highlight the pivotal role of wind energy in the clean energy transition. They inform policymakers on how to maintain Europe's global leadership in wind energy technology so that wind delivers on the EU's Climate and Energy objectives. As such, the platform will be key in supporting the implementation of the Integrated SET-Plan.

Author: ETIPWind Executive Committee
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Design by: www.formasdopossivel.com

Sources:

- BOEM, Determining the Infrastructure Needs to Support Floating Wind and Marine Hydrokinetic Facilitieson the Pacific West Coast and Hawaii (2016).
- Carbon Trust, Floating offshore wind market technology (2015).
- Carbon Trust, Floating Wind Industry Joint Industry Projects: Phase I (2018).
- ETIPWind, Roadmap (2019).
- Multiconsult for Equinor, Hywind Tampen Societal ripple effect analysis (2019).
- Friends of Floating, The future's floating (2018).
- IRENA, Floating foundations: a game changer for offshore wind power (2016).
- IRENA, the Future of Wind (2019).
- IRENA, Floating foundations: a game changer for offshore wind power (2016).
- Multiconsult for Equinor, Hywind Tampen Societal ripple effect analysis (2019).
- WindEurope, Ports infrastructure requirements for floating offshore wind (2020).
- WindEurope, Floating offshore wind energy. A policy blueprint for Europe (2018).
- WindEurope, Our Energy Our Future (2019)
- WindEurope, Ports infrastructure requirements for floating offshore wind (2020).
- World Bank, Going Global: Expanding Offshore Wind To Emerging Markets (2020).

For more information check the ETIPWind website under https://etipwind.eu/publications/

ETIP Wind
EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON WIND ENERGY

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HOW FLOATING WIND IS MAKING EUROPE CLIMATE-NEUTRAL

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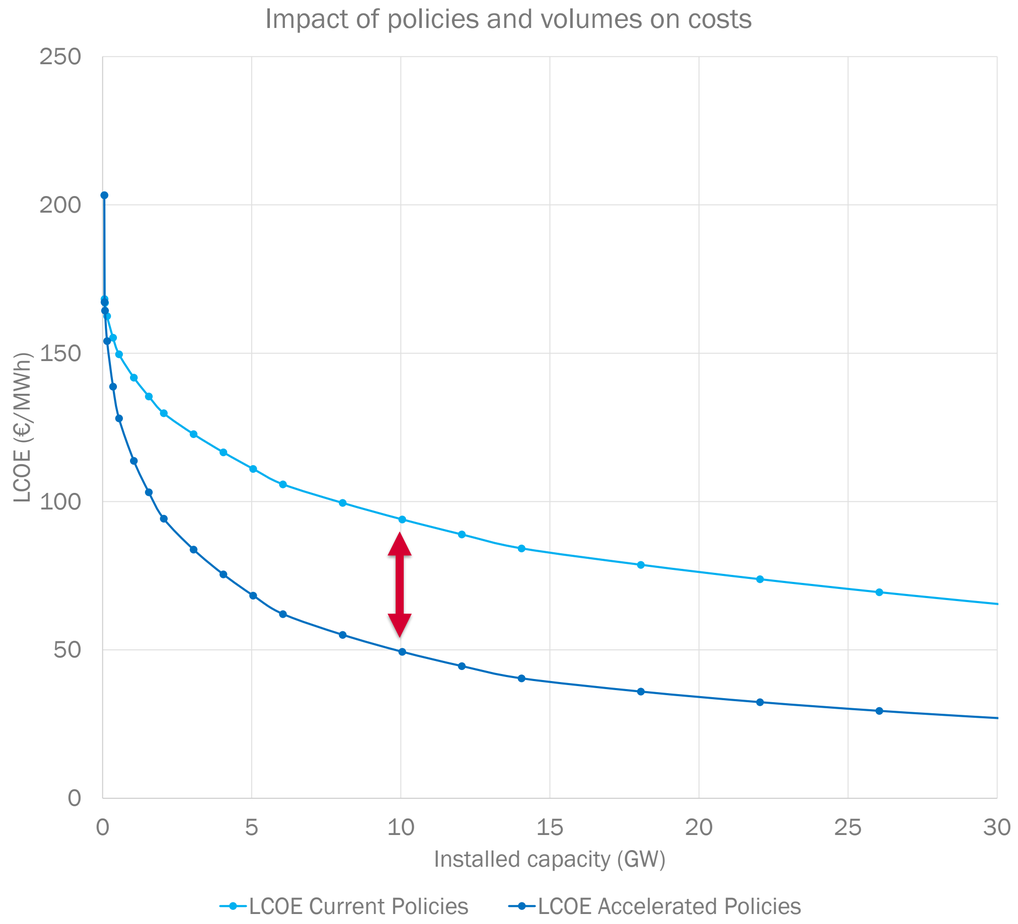
1. Cost reduction in floating offshore wind

The right policies accelerate cost reduction → learning rate

- Current policies - learning rate starts at 0.98 and declines 0.005 every step until it reaches 0.85
- Accelerated policies - learning rate starts at 0.95 and declines 0.01 every step until it reaches 0.75



Communication and Dissemination

Opportunities

- 30 June webinar
- 15 – 20 July IEA TEM (*tbc*)
- 14 September workshop
- 22-24 September EU R&I days
- 23-24 November SET Plan
- Policy milestones
  - Green Deal call
  - Offshore strategy
  - ….

Election of the new EXCO chair

Nomination of the candidate(s)

- The position of chairperson of the EXCO is reserved for an industry representative.

- Candidate(s) for the chairperson (Chair) position must be nominated by members of either the AG or the EXCO.

- The EXCO will accept or reject applicants by consensus or secret ballot. In the case of the latter, if after two voting rounds no 2/3 majority for a candidate is found, a chairperson will be selected by the European Commission.

- The Chair will be elected by the EXCO for an 18-month period. The chairmanship can be extended for maximum one successive term.

Voting procedure

1. A link will be sent to you through the GoToMeeting chat;

2. By clicking on the link you will access our voting system;

3. Submit your vote; and

4. Results will be immediately tabulated and reported.

For major decisions a 2/3 majority is needed and at least 50% of the industry representatives need to be present (including the chair). If the quorum is not met, the secretariat will organise an online vote. A simple majority will suffice for the online vote.

Opening statement of the new EXCO chair

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ETIPWind … of change

Thank you, Aidan

- We created a TEAM
- Enabled collaboration, transparency and open communication
- Time and dedication
- We produced great results
  - SRIA – strategic agendas
  - Factsheets – punchy and backed up
- Thanks for leading us here
  - And we count on your support further

A few changes going forward

- TEAM, collaboration, transparency and open communication stay
- Empowering the platform
  - EXCO members to lead topics of interests (e.g. Factsheet, SRIA parts…)
  - Secretariat to step up and represent ETIPWind in stakeholder meetings (EXCO participation welcome)
- Any other suggestions

Priorities for next term

- Continue our position in wind specific topics
  - Mega turbines
  - Floating wind
- Broaden our reach to topics beyond wind but important to us
  - Integration of wind (renewables)
  - Offshore grids
  - Sustainable wind power plants
    - SF6 free
    - New ecological materials
- Any other suggestions

2021 publication

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Brussels context in Q1-Q2 2021

- New 2030 GHG Target being agreed by EP and council, along with a new RE target and projections to 2050
- EC will be preparing a legislative proposal for a smart sector integration strategy (with a heavy influence from the hydrogen Strategy)
- EP and Council will be discussing the legislative proposal on the TEN-E presented by EC in Dec 2020. Which infrastructure gets EU funds?
- DE has led efforts (Dec 2020) for the introduction of an enabling framework for offshore hybrids

WindEurope Flagship Reports

Year	Title	Scope
2017	Local Impact, Global Leadership	• 2030 timeframe • Contribution of Wind to the economy (GDP, Jobs) • Trade flows of Wind energy components
2018	Breaking new ground	• 2050 timeframe • Electrification potential • Power system flexibility needs • Energy mix
2019	Our Energy, Our future	• 2050 timeframe • Offshore potential • MPS, Grids (offshore hybrids), Finance
2020	Title TBC	• 2030 timeframe • Contribution of Wind to the economy (GDP, Jobs) • Competitiveness of the European wind supply chain • Wind farm development and community engagement
2021	tbc	• 2050 timeframe • Wind energy benefits (LCOE, envi impacts) • Technology outlook (size, circularity& lifetime, CF, etc.) • Enablers (Storage, EV, DSM, etc.) • **Infrastructure**

Report Scope

- *Part A: On the path towards 2050*
  - *2050 scenarios: are they realistic*
  - *Getting the wind benefits right: Cost, environmental impact, socio economic benefits and system stability issues*
- *Part B: How to deliver on the 2050 scenarios*
  - *Technology outlook:*
    - *Wind: (new turbines, optimization of wind farm design, lifetime, etc.)*
    - *Enablers: Heat pumps, Demand response, EV, H2*
    - *Infrastructure side: grid development, storage needs*
  - *Innovation drivers and policy requirements (this is the part of ETIP tech roadmap in a synthetic version)*

Timing

April / June 2020	Scoping
July /August	Narrative
September	Outline and RFP
October	Selection of consultants
October/ November	Analysis and exchange with consultants
December	First draft
February 2021	Second draft
March	Final Draft
April 2021	Design and printing

Governance

- ETIPWind Secretariat in the lead
- Support from Consultancy firms
- In consultations with:
  - ETIPWind EXCO
  - ETIPWind Advisory group (CTOs group)
  - Event Ambassadors

Joint workshop
EERA JP WIND & SETWIND

ETIP Wind

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One week of online workshops

Date	14-9-2020	15-9-2020	16-9-2020	17-9-2020	18-9-2020
9-9.30 h		Morning talk with…	Morning talk with…	Morning talk with…	Morning talk with…
10-12 h		EERA GA	SP2 & 7	SP3 & 4	SC
14-16 h	ETIPWind	SETWind	SP5 & 8	SP6	Workshop on open and fair data

Proposed workshop agenda

Time	Item
14:00 – 14:05	Introduction to the workshop and house rules • ETIPWind secretariat
14:05 – 14:10	Opening statement • ETIPWind Executive Committee chair
14:10 – 14.20	Keynote speech • IEA / IRENA / World Bank
14:20 -14:45	Scaling up offshore wind deployment • Introduction by industry (5') • Roundtable discussion (20')
14:45– 15:10	Towards zero impact offshore wind • Introduction by scientist (5') • Roundtable discussion (20')
15:10 – 15:35	Providing stable and secure energy • Introduction by industry (5') • Roundtable discussion (20')
15:35 – 15:50	Conclusions • Topic leader 1 • Topic leader 2 • Topic leader 3
15:50 – 15:55	Next steps • ETIPWind secretariat
15:55 – 16:00	Closing statement • ETIPWind Executive Committee chair

AOB

Next steps