

ETIPWind Steering Committee Online meeting

Welcome & Introduction

Objective of the meeting

- To address the final comments on the ETIPWind Work Programme 2022-2025
- To refresh our minds about the main Horizon Europe processes
- To start discussing the Gap analysis and the funding gaps between ETIPWind priorities and the Horizon Europe Work Programme 2023-24

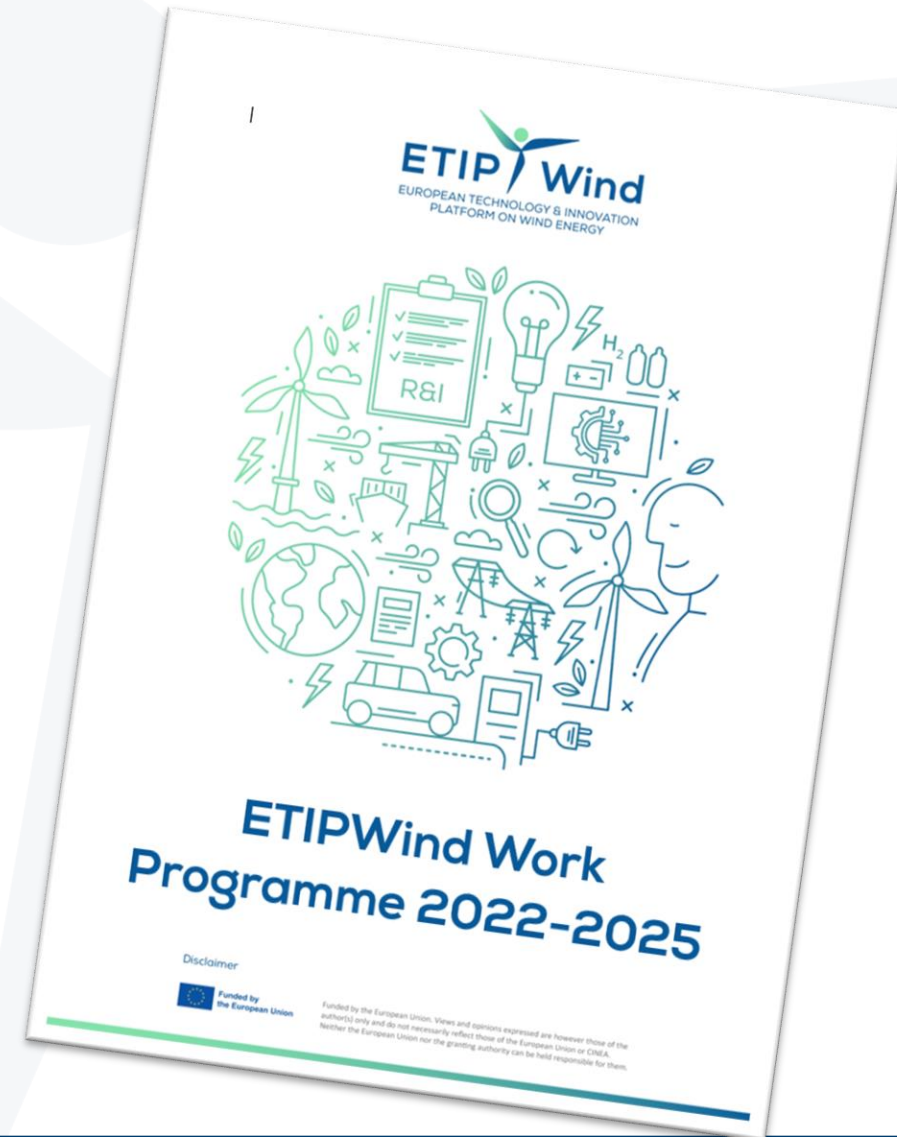
Agenda

11:00-11:05	Welcome & Introduction by the ETIPWind Chair
11:05-11:35	Finalised ETIPWind Work Programme – <i>inc. 15mn discussion</i>
11:35-12:05	Horizon Europe processes (strategic plan, consultation, Work Programmes' elaboration) – <i>inc. 15mn Q&A</i>
12:05-12:45	Interactive discussion on the Gap analysis <ul style="list-style-type: none">➤ <i>Proposed methodology</i>➤ <i>Review of the wind energy-related calls in HEU Work Programme 2023-24</i>➤ <i>Discussion on the funding gaps (if time allows)</i>
12:45-12:55	Update on possible collaborations (<i>CETP, CSP other ETIPs, etc.</i>)
12:55-13:00	Conclusion and next steps

ETIPWind Finalised Work Programme

Finalised ETIPWind Work Programme

- Document structured in **4 Areas of actions**
- Each Area of actions = **List of actions + Timeline**
- **Steering Committee's input** have been integrated
- **Timelines** have been simplified
- Processes for Horizon Europe and NECPs have been clarified.



Finalised ETIPWind Work Programme

- The Work Programme will be **regularly updated**
- **Additional activities** will be implemented upon needs
- **Working Groups:** To help structuring the work of SC members for complex activities that will require many feedback loops (e.g. Gap analysis, SRIA).
- **Task forces:** To perform a specific activity in the short-term (e.g. answer to a European Commission's consultation).

Finalised ETIPWind Work Programme

SC members' comments received:

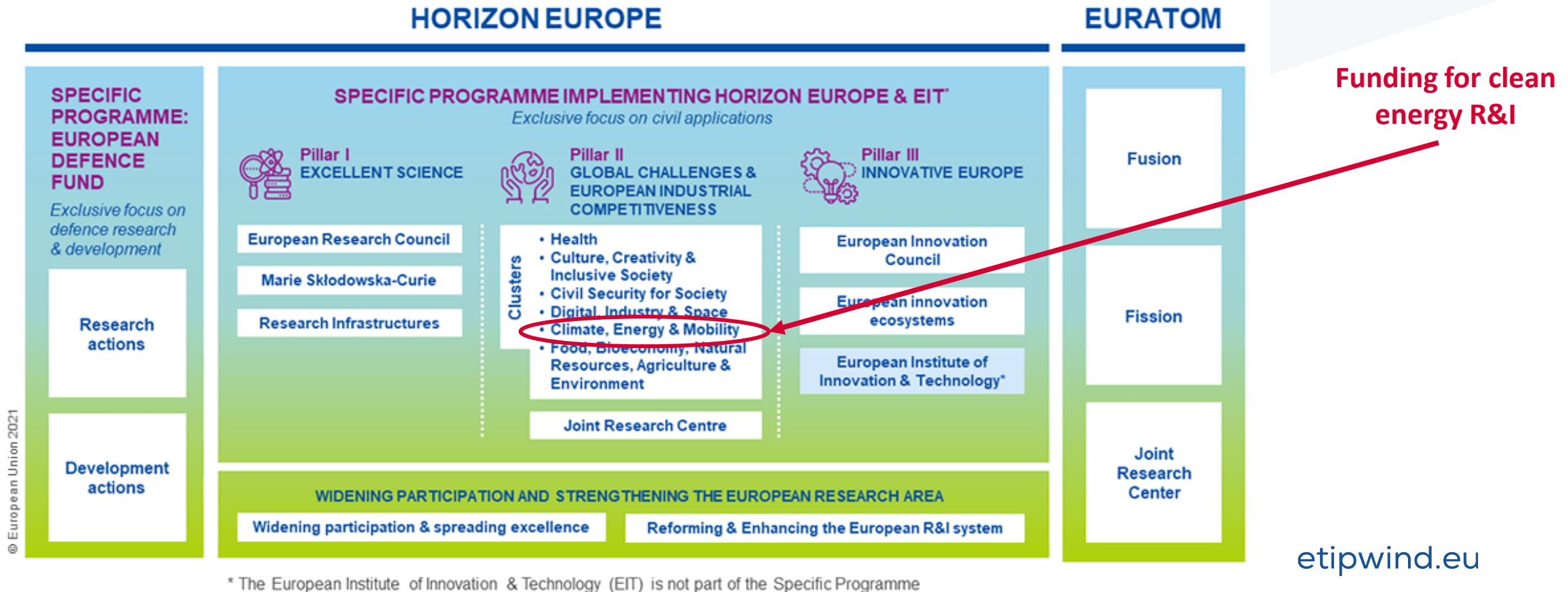
- We should come closer to the IWG Wind, not included in the document -> **can be added a continuous action in Part 2.2**
- Some actions seem to overlap or duplicate (e.g. 2.1.1.7 and 2.4.1.6 ?) -> **difference to be clarified.**

Any final comment?

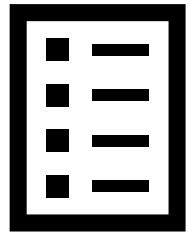
Horizon Europe processes

Horizon Europe: how is it structured?

- The EU funding programme dedicated to **Research and Innovation**
- Total budget 2021-2027: **€95.5 billion**



Horizon Europe: how is it structured?



Horizon Europe strategic plan* 2021-2024

List of strategic orientations for R&I defined by the European Commission



Horizon Europe Work Programme 2021-22

Calls for proposals divided into Clusters

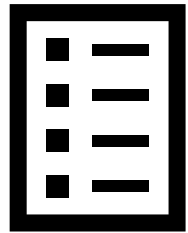


Horizon Europe Work Programme 2023-24

Calls for proposals divided into Clusters

1. Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains;
2. Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources;
3. Making Europe the first digitally enabled circular, climate-neutral and sustainable economy;
4. Creating a more resilient, inclusive and democratic European society.

Horizon Europe: how is it structured?



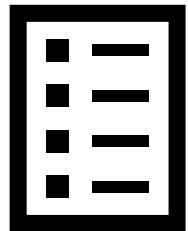
Horizon Europe strategic plan
2021-2024



Horizon Europe Work Programme 2021-22
Published end 2020. Calls are closed. Projects
have been awarded.



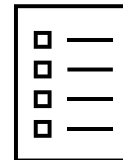
Horizon Europe Work Programme 2023-24
Published end 2022. Calls will open soon.



Horizon Europe strategic plan
2025-2027

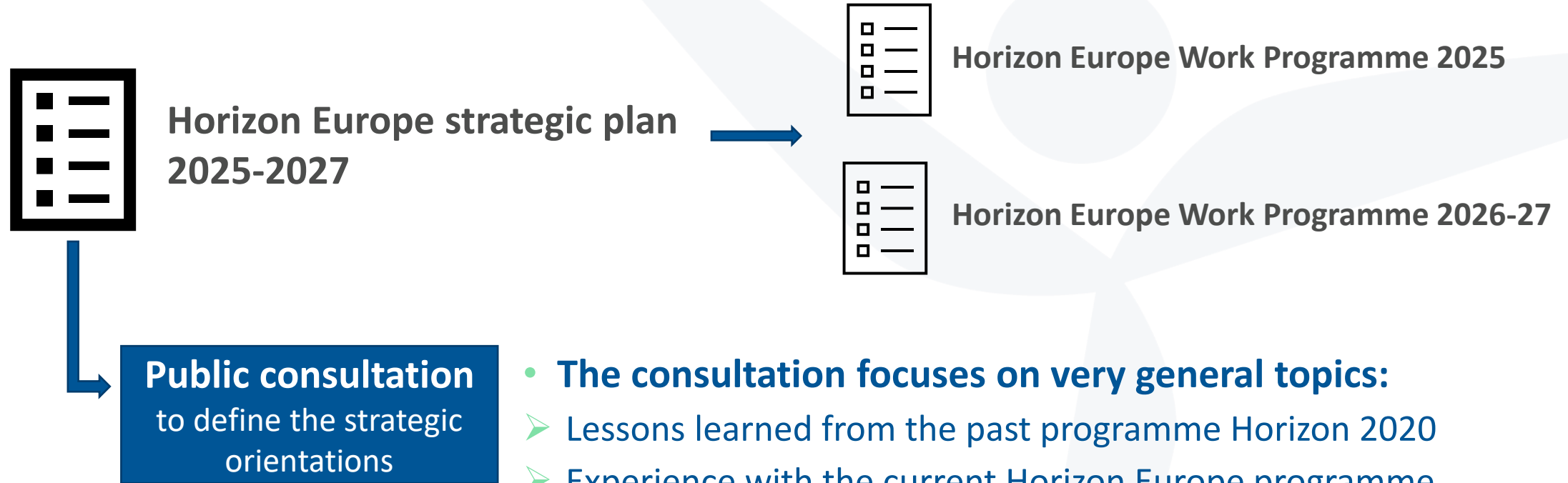


Horizon Europe Work Programme 2025



Horizon Europe Work Programme 2026-27

Horizon Europe: Consultation on the Strategic plan 2025-2027



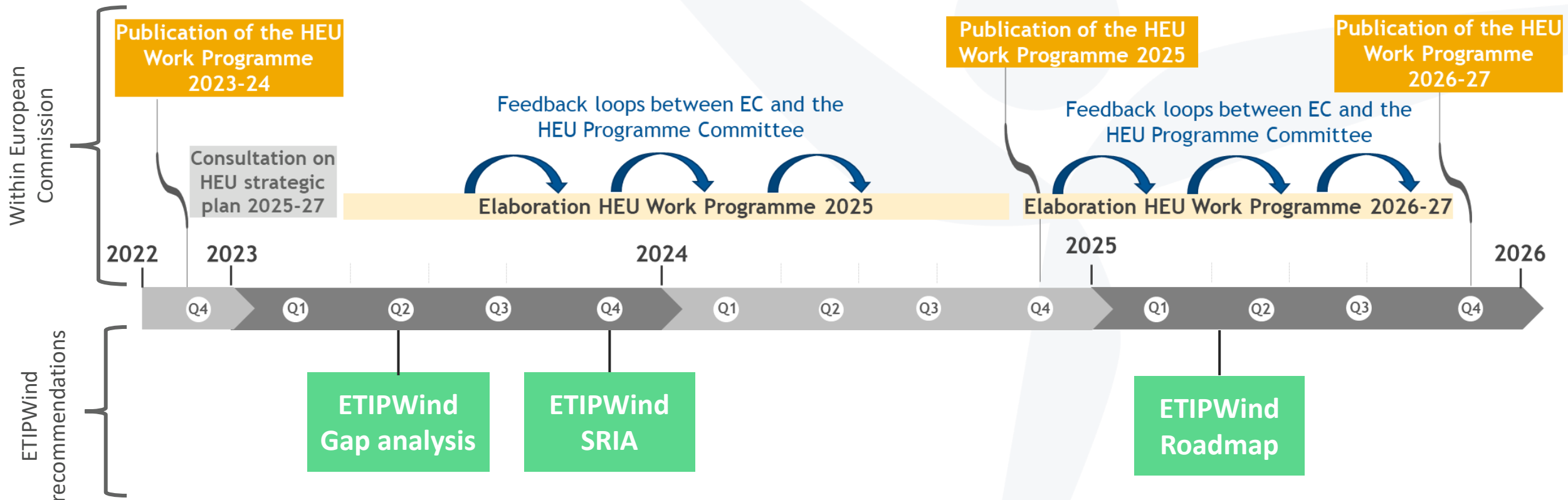
- **The consultation focuses on very general topics:**
 - Lessons learned from the past programme Horizon 2020
 - Experience with the current Horizon Europe programme
 - Questionnaire on the upcoming Strategic Plan of Horizon Europe (2025 – 2027)
 - Key lessons learned and messages for the future

Closing date: 23 February

Horizon Europe: ETIPWind's answer to the consultation on the Strategic plan 2025-2027

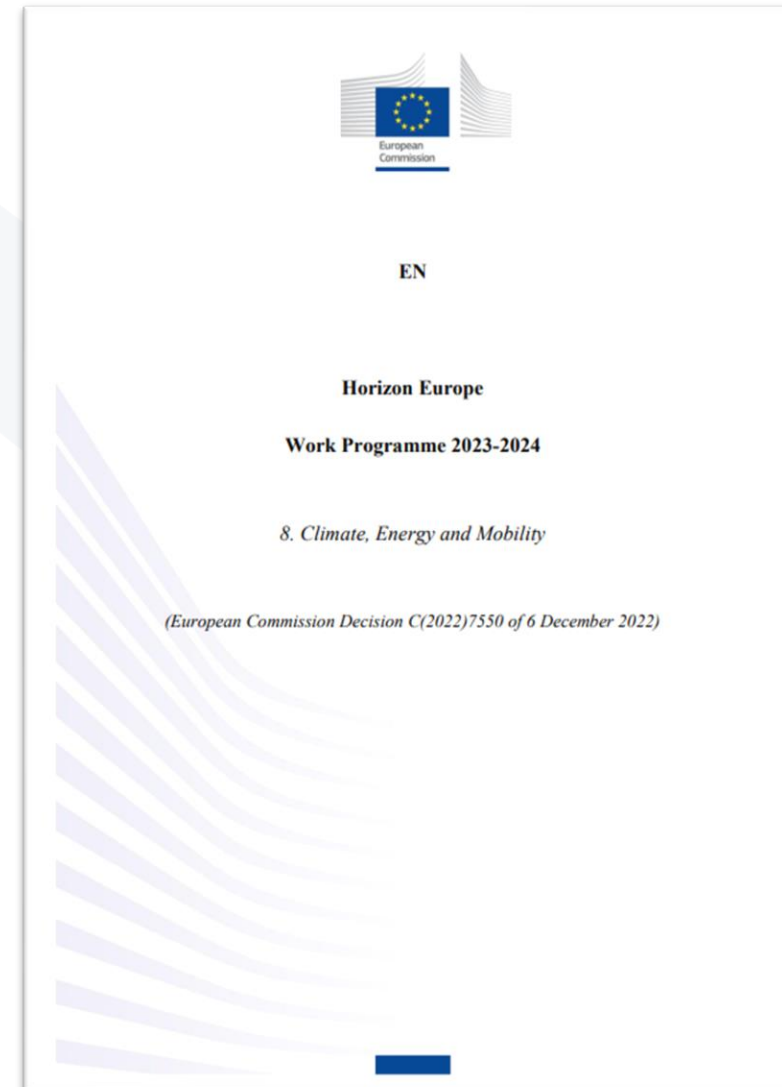
- The Secretariat will answer the consultation and forward its answer to the Steering Committee members.
- SC members are invited to submit an individual answer on behalf of their own organisation if they wish.

Horizon Europe: how are Work Programmes elaborated?



Horizon Europe: the Work Programme 2023-24

- Includes **5 wind energy-related topics** / calls for proposal
- Total budget: **€82m**
- In comparison solar energy (PV + CSP) gets €142m, Batteries €225m



Horizon Europe: Wind related-calls for proposals in the WP2023-24



Critical technologies for the offshore wind farm of the future

Total budget: €18m (3 projects)

TRL at the end of project: 5

Deadline: 30 March 2023.



Digital twin for forecasting of power production to wind energy demand

Total budget: €12m per project (2 projects)

TRL at the end of project: 5

Deadline: 5 September 2023



Critical technologies to improve lifetime, efficient decommissioning and increase the circularity of offshore and onshore wind energy systems

Total budget: €12m (3 projects)

TRL at the end of project: 5

Deadline: 5 September 2023



Minimisation of environmental and optimisation of socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms

Total budget: €10m (2 projects)

TRL at the end of project: 5

Deadline: 5 September 2024



Demonstrations of innovative floating wind concepts

Total budget: €30m (2 projects)

TRL at the end of project: 7-8

Deadline: 5 September 2024

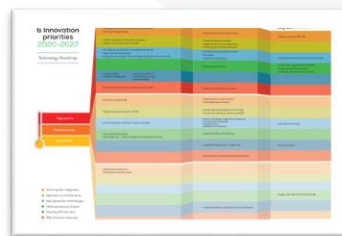
Discussion on the Gap analysis

Gap analysis – Introduction

Gap analysis



ETIPWind Roadmap 2019



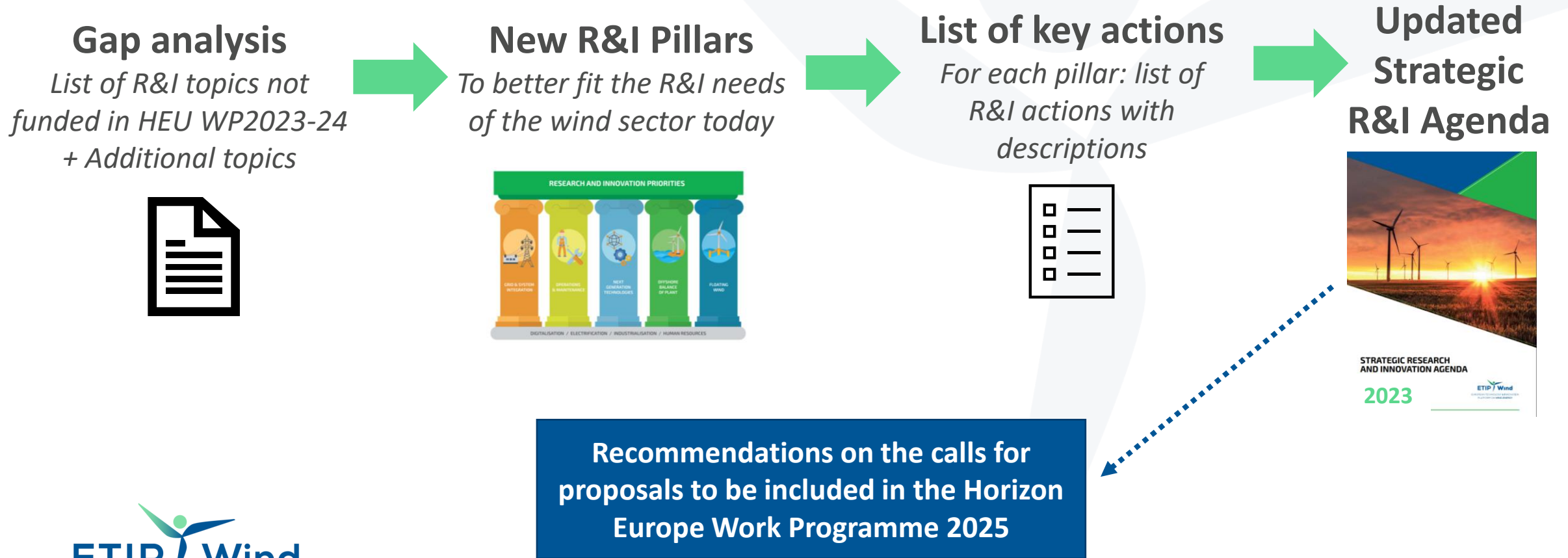
Horizon Europe WP2023-24



Additional R&I
priorities

Gap analysis – Introduction

➤ Gap analysis = 1st step to update the ETIPWind Strategic R&I Agenda





Gap analysis – Proposed methodology

HEU WP2023-24

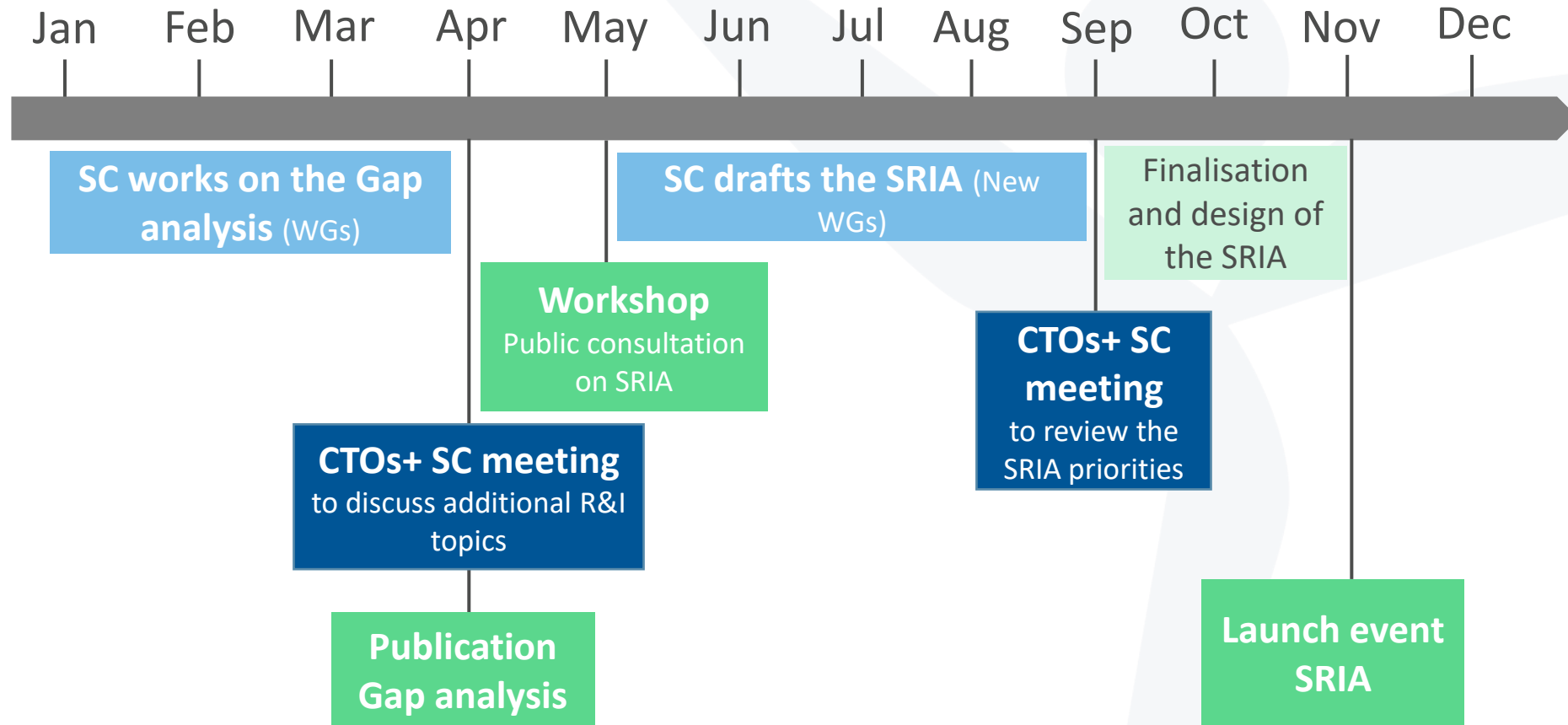
Pillar 1 Grids and System integration	Short-term	Integrated forecasting of power production demand	✓
		Short-term energy storage	✓
		Long-term energy storage	✗
		Multi-cultured windfarms	✗
		Modelling future system needs	✗
	Medium-term	Optimising transmission infrastructure	✗
		Quantification of system services	✗
		Sustainable hybrid solutions	✓
	Long-term	Stable system with 100% RES	✗
Pillar 2	...		
Pillar 3	...		
Pillar 4	...		
Pillar 5	...		

Gap analysis – Proposed methodology

- **One Working group** dedicated to each pillar of the Roadmap 2019.
- Each Working group will look at the actions' descriptions and will **assess if they are well reflected** in the HEU WP2023-24.
- **Outcome** = one paragraph per action to summarise the analysis of the Working Group.

Integrated forecasting of power production and demand	 Sort-term	 High priority
<p><u>Description and scope</u></p> <p>There is a need for more accurate and disaggregated forecasting of both power production and power demand to further optimise wind power operations, both in terms of power production and fleet maintenance. To maximise the use of available renewable power, better predictions of local demand should be shared with local power producers such as wind farm operators.</p> <p>A clearer understanding of the demand profile from off-takers and/or other production/consumption technologies will help development of Virtual Power Plants and ultimately better inform consumers to sign renewable Power Purchase Agreements suited to their needs. Understanding the effects of new loading profiles from e-mobility or electrification of other sectors such as heating and industry on distribution systems will be essential to ensure clean renewable e-mobility has the lowest possible impact on the grid.</p> <p><u>Recommended research actions</u></p> <ul style="list-style-type: none">• Develop harmonised and standardised data models to be used for new data sets.• Create, aggregate and integrate various data sets to be used across all of the above use cases.• Adapt and integrate existing forecasting methods to the new data sets and demand profiles.	<p><u>Milestones</u></p> <ul style="list-style-type: none">• EU-wide study on power demand profiles in various energy-intensive industries and their potential for demand-side flexibility.• Funding for 1-2 research and/or demonstration projects on matching production and demand by 2021.• Investigate the possibility to charge electric vehicles during high wind conditions on a national and EU level.• Investigate the potential of charging electric vehicles to help control system-wide power demand.	

Gap analysis + SRIA – Proposed timeline



Discussion on Funding gaps

HEU WP2023-24 Calls for proposals



Critical technologies for the offshore wind farm of the future



Budget: €6m per project, total €18m



TRL at the end of project: 5



Deadline: 30 March 2023



Type of action: RIA, 100% funding

Expected Outcomes:

- Improved performance for offshore wind turbines and efficient use of marine space
- Stronger offshore turbine value-chain, supporting jobs and skills
- Reduced impact on species and habitats
- Reduced use of primary and raw materials
- Reduction of LCOE and increased sustainability

Scope:

- Innovations in design and manufacturing of large offshore windfarms (<15MW fixed, <12MW floating)
- E.g. Reduced turbine mass, advanced sub-structures, advanced cabling and connectors, moorings, etc.
- Innovative low-cost sub-structures using resistant materials
- Understanding of materials issue on the upscaling of turbines/systems
- Considering circularity in the design phase and social / env impacts.

HEU WP2023-24 Calls for proposals



Digital twin for forecasting of power production to wind energy demand



Budget: €6m per project, total €12m (1 onshore, 1 offshore)



TRL at the end of project: 5



Deadline: 5 September 2023



Type of action: RIA, 100% funding. **Lump sum cost model***

Expected Outcomes:

- Accurate and precise energy yield prediction based on accurate simulations considering renewable energy production, energy consumption and price predictions.
- Enhanced digital transformation of wind energy sector by delivering the next generation of digital twins.

Scope:

Digital twin integrating:

- Wind and weather forecast models for the full wind power production system
- Spatial modelling: medium to long distance wake effects
- Interconnection optimisation via simulations to satisfy grid connection requirements and agility in grid reconfiguration
- Include predictive maintenance, structural health and conditional monitoring
- End user location and needs

HEU WP2023-24 Calls for proposals



Critical technologies to improve lifetime, efficient decommissioning and increase the circularity of offshore and onshore wind energy systems



Budget: €4m per project, total €12m



TRL at the end of project: 5



Deadline: 5 September 2023



Type of action: RIA, 100% funding

Expected Outcomes: *(at least 2, not all)*

- Improved overall lifetime, reliability, recyclability, sustainability, operability and maintainability of onshore/offshore wind turbines and foundations.
- Enhanced overall sustainability based on LCA addressing social, economic and env aspects
- Affordable high life-cycle performance, life extension, more efficient decommissioning
- Potential new markets in wind turbines recycling / re-purposing

Scope: *(One of the points in the list or better solution)*

- Development of more resistant materials
- Development of improved manufacturing procedures for turbine components and construction methods
- Development of bio-based fibres and resins with improved properties
- Lifetime extension by innovative design and repair solutions
- New installation, decommissioning and condition monitoring technologies and O&M methodologies
- New recycling technologies for components ...

HEU WP2023-24 Calls for proposals



Minimisation of environmental and optimisation of socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms



Budget: €5m per project, total €10m



TRL at the end of project: 5



Deadline: 5 September 2024



Type of action: RIA, 100% funding

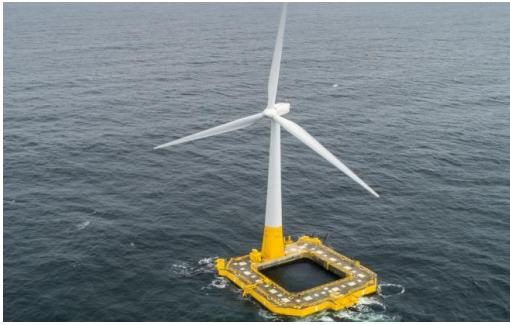
Expected Outcomes:

- Enhanced sustainability of offshore windfarms
- Enhanced overall sustainability of large-scale production of offshore windfarms based on LCA
- Improved understanding of negative/positive impacts of offshore windfarms
- Innovation and cost-effective solutions for construction and decommissioning and minimization of impacts on biodiversity

Scope: *(One of the following points)*

- Development of design tools for offshore with focus on minimisation of environmental impacts. Inc. reduced LCA. The tool should be easy to customize.
- Development of innovative and cost-effective solutions to reduce environmental impacts for all phases of the life cycle of offshore windfarms but especially for the installation, construction and decommissioning phase

HEU WP2023-24 Calls for proposals



Demonstrations of innovative floating wind concepts

Expected Outcomes:

- Knowledge on design, construction, assembly, operation and maintenance of floating windfarms.
- Improved overall constructability, reliability, installability, operability and maintainability
- Efficient, low-cost and sustainable emerging technologies for floating inc. reduction of LCoE.
- Reinforced EU offshore value chain
- Data for future optimisation of industry scale commissioning of the floater, mooring and anchor system

Scope:

- Design optimisation of a full floating system addressing space needs in ports, vessels, etc.
- Demonstrate innovative floating vertical or horizontal axis offshore wind platforms (>4 MW for horizontal and >2 MW for vertical) in real sea for long periods (12-24 months)
- Develop and implement pilot projects for floating wind by identifying the best existing practices and the remaining knowledge gap
- Strong business case and exploitation



Budget: €15m per project, total €30m



TRL at the end of project: 7-8



Deadline: 5 September 2024



Type of action: IA, 70% funding for for-profit / 100% for non-profit

Discussion on Funding Gaps: Comparison of the ETIPWind priorities with HEU WP2023-24 topics



Critical technologies for the offshore wind farm of the future
Budget: €6m per project
TRL at the end of project: 5
Deadline: 30 March 2023.



Digital twin for forecasting of power production to wind energy demand
Budget: €6m per project
TRL at the end of project: 5
Deadline: 5 September 2023



Critical technologies to improve lifetime, efficient decommissioning and increase the circularity of offshore wind energy systems
Budget: €4m per project
TRL at the end of project: 5
Deadline: 5 September 2023



Minimisation of environmental and optimisation of socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms
Budget: €5m per project
TRL at the end of project: 5
Deadline: 5 September 2024



Demonstrations of innovative floating wind concepts
Budget: €15m per project
TRL at the end of project: 7-8
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Research & Innovation priorities 2020-2027

Technology Roadmap

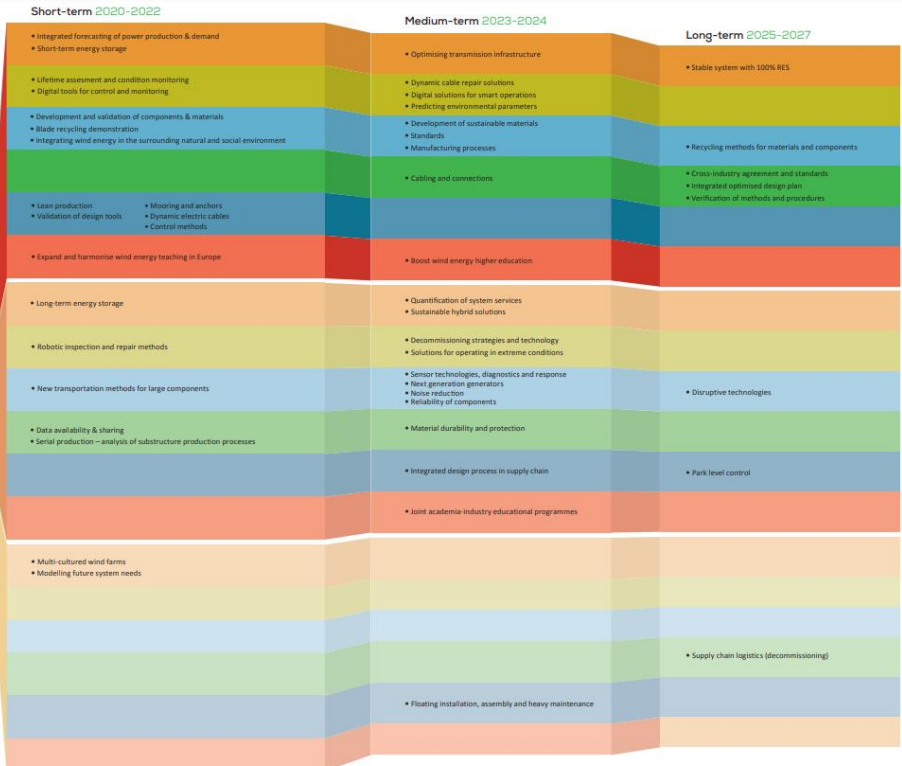


High priority

Medium priority

Low priority

- Grid & system integration
- Operations & maintenance
- Next generation technologies
- Offshore balance of plant
- Floating offshore wind
- Skills & human resources



Update on possible collaborations

Collaboration with the Clean Energy Transition Partnership



- Co-funded Partnership (EC + national governments). They publish **annual calls for proposals** with a budget of €100-130m per year (2021-2017).
- Their calls are divided into several “Transition Initiatives”. TRI 1 dedicated to “**Optimised Integrated European net-zero emissions Energy System**”.
- For the TRI 1-2023 call: they’d like to develop a call on “**Offshore wind, HVDC and energy islands**”.
- Bilateral **meeting on 17/01** to define the scope of the call.

Collaboration with ESTEP / Clean Steel Partnership



- Meeting between WindEurope and **ESTEP (European Steel Technology Platform) / Clean Steel Partnership** (€1.7bn inc. €700m from EC to draft Horizon Europe calls on clean steel).
- ESTEP interested to collaborate with ETIPWind:
 - ☐ Review of ETIPWind / CSP Strategic R&I Agendas ?
 - ☐ Participation in a focus group (e.g. renewables) ?
 - ☐ Joint declaration?
- In February, WindEurope will organise a **technical workshop on circularity** with them. **ETIPWind's participation** as first step of collaboration.

Collaboration with other ETIPs on acceptability



- EUREC will organise a **workshop on acceptability challenges** that bioenergy, hydropower and wind communities face
- Co-organisation of the workshop with **ETIP Hydropower** and **ETIP Bioenergy** (+ other ETIPs?)
- **“Closed door” workshop** to allow open discussions
- To be scheduled **Q2 2023**.
- ETIPWind experts could be involved in the discussion.

Conclusion and next steps

Conclusion and Next steps

- **Next meeting:** on the Gap analysis on **12 January (10:00-13:00)**
- **Save the Date for the CTOs + SC meeting** in Copenhagen: **27 April (10:00-13:45) + perhaps a visit of LM's premises on 28 April.**
- **Teams repository** is live now. Additional channels will be created to coordinate on several topics (Gap analysis, communication, etc).



THANK YOU

Contact: secretariat@etipwind.eu