ETIPWind Online Steering Committee meeting





Welcome & Introduction

Adrian Timbus
Vice President Portfolio and Market
Strategy - ETIPWind Chair

etipwind.eu

The ETIPWind roadmap: why?



EU funding is not optimal, we need to change the mindset!

There's momentum (e.g. Draghi and Heitor reports). We need to provide recommendations on how to optimise EU funding in the next FP10.

The European wind sector agrees on a common R&I agenda by 2050. We need to show clarity and alignment on a common R&I programme. But we also need to align with EU Member States and the Commission.





Accelerate R&I efforts thanks to the establishment of a long-term R&I initiative. We need a document that explains why we need this initiative in the next EU budget 2028-2034, how it will help us achieve our long-term targets.

From the SRIA to the ETIPWind roadmap

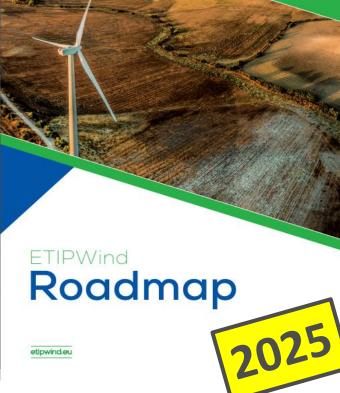


Strategic Research & Innovation Agenda 2025-2027





Strategic R&I Agenda	Roadmap
- Strategie Nor Ageriaa	Roddinap
Describe short-term R&I needs for 2025-2027	Describe R&I milestones to achieve long-term targets by 2050
Focus on R&I activities (project level)	Focus on implementation (programme level)
Very detailed and prescriptive	Broader angle, long- term vision
Mostly text	Mostly visual (timeline)
Document only about R&I topics	Will also include policy recommendations



Objectives of today's meeting

- Review the R&I timelines and KPIs developed by the ETIPWind Working Groups.
- ➤ **Gather all comments** from Steering Committee members so the Secretariat can consider them in developing the final version of the timelines / KPIs.
- Five an **update on the next steps** before finalisation of the ETIPWind roadmap.



Agenda

9:30-9:35	Welcome & Introduction	Adrian Timbus, ETIPWind Chair
9:35-9:50	WG1 Timeline and KPIsPresentation (5mn)Discussion (10mn)	ETIPWind Secretariat
9:50-10:05	WG2 Timeline and KPIsPresentation (5mn)Discussion (10mn)	ETIPWind Secretariat
10:05-10:20	WG3 Timeline and KPIsPresentation (5mn)Discussion (10mn)	ETIPWind Secretariat
10:20-10:35	WG4 Timeline and KPIsPresentation (5mn)Discussion (10mn)	ETIPWind Secretariat
10:35-10:50	WG5 Timeline and KPIsPresentation (5mn)Discussion (10mn)	ETIPWind Secretariat
10:50-11:00	Next steps and closing remarks	ETIPWind Secretariat + Adrian Timbus, ETIPWind Chair



Review of R&I timelines and KPIs

ETIPWind Secretariat

Structure of the roadmap

Chapters	Content	Objective
1) Introduction	Context, reminder of EU policies and targets, key role of R&I for competitiveness, the SET Plan and the IWG Wind targets. 2 pages	Set the scene, remind the EU policy context, and clarify the role of the SET Plan.
2) Current funding support for wind R&I	 Summary of the EU funding programmes' indepth analysis (full analysis in Annex 1) Examples of projects funded by the Member States (outcomes of the IWG Wind's survey). 3 pages 	Assessment of funding gaps, acknowledgment of what has been done, identification of what does not work in the EU funding programmes. = Arguments of why we need to boost R&I efforts.
3) R&I needs to achieve long-term targets	Defined based on ETIPWind SRIA and EERA JP Wind long-term research programme 6 pages	Description of what we need concretely to achieve our long-term targets (e.g. big demo projects, market incentives, basic research)
4) Implementation	The role of each stakeholder in the implementation of the R&I priorities (EU, MS, sector) and proposed tools and framework to address that: recommendations for optimisation of EU funding programmes, partnership on wind R&I. 4 pages	Provide recommendations to the European Commission for the next MFF and make the case for our partnership on wind R&I.
5)Conclusion	One pager with our key recommentations – 1 page	Sweet and short summary

Reminder

R&I milestones - to achieve our longterm target by 2050

<u>Definition</u>: A R&I milestone can be defined as a major step that would be a gamechanger for the European wind energy sector. An innovation that must happen to reach our long-term target by 2050.

- -To be defined based on previous documents.
- -Limited number of milestones.
- -Milestones are part of a long-term vision.

<u>Example</u>: Floating wind fully reaches commercial-scale, installation of offshore turbines have no negative impact on biodiversity.

Key Performance Indicators – to measure the progress towards the achievement of the milestones

<u>Definition</u>: measurable indicators that will help us track the progress towards our R&I milestones.

- -Max 1-2 KPIs
- -Should be easy to measure
- -Should be general enough to cover all the R&I milestones

Example: manufacturing capacity (in GW), number of turbines installed

Long-term targets by 2050

- 1. By 2050, the European wind industry is healthy and competitive at the global scale.
- 2. By 2050, the European industry harnesses the full potential of AI, digitalisation, automation with high cybersecurity standards.
- 3. By 2050, wind is the backbone of a climate-neutral European energy system centered around electrification.
- 4. By 2050, wind farms are fully circular and have a positive environmental impact.
- 5. By 2050, society actively supports and recognises wind energy as indispensable for European prosperity and climate-neutrality.



WG1 – Industrialisation, scale-up, competitiveness



By 2050, the European wind industry is healthy and competitive at the global scale.

Policy / Capacity targets R&I milestone / Key activities Other needs

Wind energy is 50% of the EU's electricity mix.

Net-zero industrial processes

2025

2030

450 GW of installed

wind energy

capacity in the EU

2035

2040

2045

2050

More auctions

Policy, regulatory measures to support deployment

> Demonstration of holistic turbine deisgns

1st fully automated production line for select components

New standardised designs for largevolume (semi)automated manufacturing

Supply chain ramp-up: manufacturing capacity, and infrastructure, installation, transport are ready for largescale deployment, etc.

Development of risk coverage mechanisms

EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON WIND ENERGY

Deployment of a strategic network of European large-scale testing and demo infrastructures

Significant reduction of OPEX thanks to higher reliability and optimised lifetime

A significant part of the European wind production lines are based on automated processes

KPIs to measure R&I impact

Industrialisation, scale-up and competitiveness:

Turbine manufacturing capacity (MW per year). E.g. by 2030, Europe has doubled its wind manufacturing capacity. Installed capacity.



WG2 - Optimisation and further digitalisation of Operations & Maintenance



By 2050, the European industry harnesses the full potential of AI, digitalisation, automation with high cybersecurity standards.

Policy / Capacity targets R&I milestone / Key activities Other needs

2025 2030 2035 2040 2045 2050

Robust and adaptive cybersecurity protocols for windfarms and connections are under deployment.

Data sharing, interoperability/ standardisation/ harmonisation

New standardised design guidelines are adopted for optimised O&M.

Al driven solutions for operations (e.g. advanced sensors) are derisked and readily available for adoption.

Resident robotics for offshore applications are widely, commercially available.

All current wind farms are serviced by a range of autonomous solutions.

Logistics at offshore windfarms and ports utilize low-carbon, autonomous solutions as 'business as usual'.

Digital twin technologies for windfarms are fully established Implementation of continuous health-monitoring for the whole turbine

Autonomous inspection solutions are embedded into the standard toolkit for all wind farms.

Predictive maintenance methodologies are widely adopted for the full wind farm(s)

Autonomous repair solutions are widely utilized on wind farms.

1st example of selfassembling and selfmaintaining/repairing turbine

KPIs to measure R&I impact

Optimisation and further digitalisation of Operations & Maintenance:

- Generation loss in MWh in the year based on wind turbine component downtime
- Cost-reduction of O&M activities (€/kW)



WG3 – Wind energy system integration



By 2050, wind is the backbone of a climate-neutral energy system centered around electrification.

50% of the EU's electricity

34% electrification by 2030 2025 2030

425 GW by 2030

2035

2040

Hybrid plants fully

established

2045

2050

Harmonisation of legislation for crossborder exchanges

> A real-life, large-scale project of HVDC multiterminal. multi-vendor systems

1st energy hub and energy island projects are demonstrated and fully operational

requirements

Demonstration of grid stability services Large-scale demonstration of grid forming

> Advanced modelling of energy systems and grids is in place

Demonstration of solutions for offshore grid connections in deep water/at seabed

Appropriate market design remuneration of ancillary services

Energy system network (including DC grid, hybrid, and digital technologies) fully implemented

Wind energy is mix.

etipwind.eu

Policy / Capacity

targets R&I milestone /

Key activities

Other needs

KPIs to measure R&I impact

Wind energy system iintegration

> Increased share of wind energy integrated in the electricity mix.



WG4 – Sustainability & Circularity



By 2050, wind farms are fully circular and have a positive environmental impact.

Policy / Capacity targets R&D milestone / Key activities Other needs

Corporate targets on 100% circular wind turbines

Landfill ban

2025

Scale up recycling for blades

Market incentives for recycled materials

Improve business case for lifetime extension and refurbished parts

EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON WIND ENERGY

Demonstration project for magnets made with recycled content

2030

Wind farm
components have
an optimised
lifetime (extended
or smart
refurbished)

2035

Demonstration project for circular blades

2040

Pilot zero-

waste.

recyclable-by-

design, and/or

circular wind

turbines

Pilot innovative materials and manufacturing technologies to minimize waste

2045

Commercial deployment of zero-waste, recyclable-by-design, and/or circular wind

turbines

2050

Environm ent

Circularit\

Harmonised and flexible tool for measuring environmental impact of windfarms

Full scale deployment of low noise installation methods Demonstration of nature positive solutions post-decommissioning

New windfarms are net-zero or nature positive

KPIs to measure R&I impact

Sustainability and circularity

- Increase of circularity indicators for new turbines.
- > Life-cycle assessment tools shows a reduction of carbon footprint of wind farms.



WG5 – Skills and Coexistence



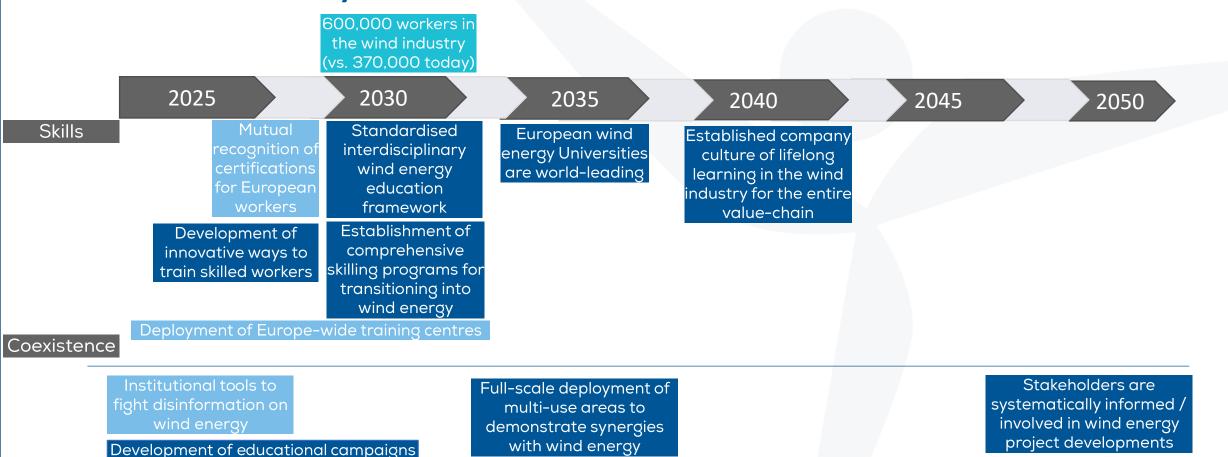
By 2050, society actively supports and recognises wind energy as indispensable for European prosperity and climate-neutrality.

to increase and improve engagement

Industry guidelines to manage all relevant stakeholder interests

EUROPEAN TECHNOLOGY & INNOVATION PLATFORM ON WIND ENERGY

Policy / Capacity targets R&I milestone / Key activities Other needs



KPIs to measure R&I impact

Skills and Coexistence:

- On skills: 75% of workers received trainings by 2030. This should increase to 90% by 2040.
- On education: At least 4 European Universities are in the top-10 of the global wind energy education ranking.
- ➤ On coexistence: By 2050 all wind energy projects clearly communicate the benefits of wind energy for society and environment.



Next steps and Closing remarks

ETIPWind Secretariat + Adrian Timbus, ETIPWind Chair

Next steps

ETIPWind roadmap:

- Roadmap first draft: ready by last week of February.
- > Review of the first draft by Steering Committee: until beginning of March.

Save-the-date:

- > Event at the European Parliament, 4 March (9:00-11:00), Brussels
- > ETIPWind in WindEurope's annual event in Copenhagen, 8 April

Sponsored conference session: 11:15-12:15

ETIPWind Steering Committee + CTOs meeting: 14:00-16:00



Thank you!

