

ETIPWIND'S RESPONSE TO THE EU CONSULTATION ON THE HORIZON EUROPE STRATEGIC PLAN 2025-2027

FEBRUARY 2023

The European Technology and Innovation Platform on Wind energy (ETIPWind) welcomes the opportunity to input the Horizon Europe Strategic Plan 2025-2027.

[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. It informs 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.

ETIPWind recognises that the EU R&I policies have been instrumental in advancing wind energy technology in Europe, clearly envisioning its significant role in today's and future energy system. However, the wind supply chain is currently struggling as a consequence of various factors stemming from the poly-crises Europe is facing. First from the pandemic, then from the uneven global recovery and the subsequent supply chain bottlenecks, then from the energy prices spike due to the invasion of Ukraine, and finally due to assertive US industrial policies.

This requires an **EU-coordinated policy response, including R&I policies** to secure Europe's global technology leadership. There has never been a stronger need for a forward-looking EU industrial R&I policy than today. In the next few years, the economic shape of the net zero age will be firmly set, in the own words of the EU's President Ursula von der Leyen. Horizon Europe must be part of this.

The Horizon Europe strategic plan should continue spearheading the fight against climate change and against the loss of biodiversity, as well as securing the supply of sustainable and home-grown energy. But it should respond more flexibly and decisively to the challenges Europe is facing today. This makes the case for more assertive and targeted R&I priorities. This paper summarises ETIPWind views on how to do this.

1. A forward-looking strategic Horizon Europe:

Horizon Europe should prioritise R&I investments in addressing the societal challenges related to the **fight against climate change** and **securing Europe's strategic autonomy of energy supply** through the use of renewable energy. Historically the EU has led the former, but it has come short in the latter.

While renewable energies have received public support in R&I and deployment for more than a decade, the EU has withdrawn its R&I efforts too soon from technologies that demonstrate fast uptake. This is the case of wind energy, which has seen a decrease in the amount of EU R&I investments.

Disclaimer

The EU can compete in mature industries such as aviation and automotive because of its sustained efforts to support R&I. If the EU is to deliver on its commitment to be a global leader in renewables the same logic should apply to wind energy technology.

Addressing climate change and securing Europe's strategic autonomy needs concerted EU action on wind energy, starting from a stable and predictable regulatory framework all the way to an industrial policy that underscores continued investment in R&I and which allows it to sustainably industrialise, scale up, operate in an integrated energy system, and thrive in happy coexistence with nature and society.

The scientific areas which Horizon Europe has demonstrated to be strong for wind energy are aerodynamics, weather conditions, mechanical and electrical design. Scientific areas that have been traditional strong in Horizon Europe, but less applied to wind energy are power electronics, energy system integration modelling and environmental protection sciences.

The scientific areas which Horizon Europe has been weak for wind energy are digital sciences, manufacturing process such as automation and robotics, marine sciences (oceanography, naval engineering) and material sciences.

2. Bringing R&I solutions to reality this decade:

The **renewable based electrification** of the European economy is the most transformative change EU R&I policies must get right.

The EU has committed to cut greenhouse gas emission by 55% by 2030, a key milestone in reaching climate neutrality in 2050 as enshrined in the European Climate Law. The European Commission's impact assessment of this law shows that direct electrification, complemented by the indirect electrification of hard-to-abate sectors, are the most cost-effective and energy efficient ways to achieve net-zero by 2050. Therefore, over the next 10 years, Europe must develop the R&I solutions and swiftly deploy the existing ones, that will allow it to electrify most of its energy **end uses**.

In addition, the Russian invasion of Ukraine has evidenced the need to secure the **supply of energy** too. Europe can do this by accelerating the deployment of home-grown renewable energy such as wind and solar PV. Wind energy will become the number one source of electricity in Europe shortly after 2025 and, according to the REPowerEU plan, by 2030 it'll meet 43% of the EU's electricity needs, from today's 16%.

However, the European supply chain of wind energy faces challenges to grow at the pace needed. One of them is the systematic lowering of investments in R&I from national governments and the EU. This also drags its global competitiveness. This is taking place at the time when Europe should be developing the R&I solutions to accelerate wind energy's deployment, notably the **manufacturing technologies** that will enable the European supply chain to **scale up**.

There are five mega trends in wind energy that such manufacturing and deployment solutions should address: 1) the scaling up of offshore wind, 2) the industrialisation of floating offshore wind, 3) the happy co-existence with the onshore environment and society, 4) the repowering of onshore wind, and 5) the circularity of wind energy.

3. Maintaining Europe's technological leadership and competitiveness in the next 3 years:

Disclaimer



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

The most important societal challenge in the next three years is to maintain Europe's **global technological leadership and competitiveness**. Europe's policy response to the effects of its various crises must be an EU-coordinated.

The Horizon Europe strategic plan should not be an exception. It should be aligned in the short term with the EU priorities of the **Green Deal Industrial Plan** and in the medium to long-term with the achievement of the **REPowerEU Plan** and the **Green Deal**.

Specifically in the next three years Horizon Europe should prioritise **wind energy** as a key and **strategic sector** as it is under the EU Industrial Strategy and under the new EU Energy Security Strategy. The rapid deployment of wind and other renewables is paramount for fulfilling these strategies. R&I in wind energy focused on faster methods for deployment, large-scale volumes of flexible manufacturing and logistics processes, as well as the development of new, alternative, sustainable raw materials are indispensable to breakthrough in the next three to five years. In addition, targeted R&I investments are urgently needed for **wind energy technology development**. The current state-of-the-art technologies will not be suitable for the wind energy capacity needed to deliver EU's energy and climate targets. New models that can be applied to bigger turbines and larger wind farms still need to be developed.

The Horizon Europe strategic plan 2025-2027 should also support the initial assessment of opportunities and challenges of increasing domestic supply and processing of **critical raw materials** for wind energy. While most of these are abundant and with established global supply chains (concrete, iron, and steel make up more than 90% of the mass of a wind turbine including its foundation), others are considered critical due to its limited availability, low refining and processing capacity, or supply chains not sufficiently developed to meet the future demand (aluminium, chromium, copper, manganese, molybdenum, nickel, and rare earth elements neodymium, dysprosium, and praseodymium).

Horizon Europe funding should also complement public funding programs **to support manufacturing capacity investments** in the EU e.g. via the national **Recovery & Resilience Plans**. And together with the upcoming Critical Raw Materials Act, it should aim to kick start local capacity for separating and refining imported rare earths and for **manufacturing permanent magnets**. Considering long lead times in establishing such industrial base, investments decisions must be taken already today. And establishing a **sustainable, science-based technology leadership** in these new industrial processes in Europe requires immediate action in R&I too. In particular on the circularity aspects of (re)-use of domestic waste streams of permanent magnets.

Horizon Europe should also prioritise the development of technologies, standards, and applications for the reuse, recover and **recycle of composite materials**, which are used in wind turbine blades.

To make Europe the first continent with a 100% renewable based energy system, Horizon Europe should not overlook the importance of R&I funding in **operations and maintenance of wind farms and their integration in the energy system**. The development of innovative solutions in these fields (e.g. digitalisation, control and monitoring, grid infrastructures, system operation, etc) is needed to build a European leadership in operating and maintaining an efficient, flexible and stable energy system.

Last, the Horizon Europe strategic plan 2025-2027 should prioritise more the cross-cutting themes of **skills, raw materials access and circularity, innovation for up scaling manufacturing process**, and research & innovation needed to **accelerate permitting** of energy infrastructure, for example digitalisation of government services, monitoring and verifying impacts (positive and negative) of renewable energy projects with big data, AI and other new technologies as well as their application to social sciences and humanities.

Disclaimer

4. How should Horizon Europe better support the wind energy supply chain?

The fourth pillar of the European **Green Deal Industrial Plan** presented in February 2023 stresses the need of resilient supply chains. While cemented on open global trade, the European Commission recognises the need to diversifying supply chains, including strengthening the domestic extraction, processing, and recycling of materials for clean technologies. The plan also proposes to strengthen European standards for clean-tech industries to scale up their technologies. This priority should be reflected in Horizon Europe strategic orientations.

We recommend that the Horizon Europe *Cluster 5 on climate, energy, and mobility* should refocus its impact on ‘efficient, clean, sustainable, secure, and competitive energy supply’ towards ‘**efficient, sustainable, resilient supply-chains for clean energy technologies**’. Security and competitiveness would be a natural result from refocusing such impact. Increasing EU independence from non-EU suppliers is crucial to position the EU supply chain and to safeguard Europe’s competitive advantage in clean energy technologies. This would support addressing the societal challenge of ‘Global competition for technological leadership’ which should take a more predominant role in Cluster 5.

We also recommend that the identification of priorities in the multi-annual work programmes should be done more transparently with stakeholders. The Programme Committee should be bound to public consultations individually as Member States, and as a group that co-decides with the European Commission. It also should have a direct influence in the national R&I budgets and policies linked to the priorities in the programme. For example, the National Energy and Climate Plans or the Industrial Strategies adopted at Member State level.

Going forward, the Horizon Europe strategic plan should try to further simplify the application, evaluation, and selection processes for projects. For many companies applying for EU funding represents more an administrative burden than a support worth pursuing. A two-stage application process might help to lower this burden and would encourage more stakeholders to submit their project ideas. Finally, more communication and dissemination of the work executed by CINEA would be very helpful to achieve this.

5. Beyond Horizon Europe, how could the EU funding landscape better support wind energy?

Overall, the EU funding landscape should be better integrated to work in stronger synergies and complementarities. The lack of cohesion of objectives, rules and administration of funding programmes are important obstacles for possible synergies between EU funding programmes. The European wind industry sees this as a barrier that deters the potential application of projects.

To scale up, the wind industry would be best supported by having joint calls with funding from various programmes in multidisciplinary projects that tackle the key priorities for the sector, from R&I to demonstration and all the way to deployment. EU funding should follow a **more cohesive, targeted roadmap** in which the supply chain, research centres and universities are able to work together on larger, long-term impactful projects that connect different funding programmes.

For example, Horizon Europe projects looking into the environmental impacts of offshore wind could be combined with projects from the European Maritime, Fisheries and Aquaculture Fund (EMFAF) focused on

Disclaimer

the protection of marine biodiversity. These projects could have links with projects using funds for demonstration, like the ETS Innovation Fund, or deployment under the Recovery and Resilience Facility and InvestEU. Likewise, projects addressing skills under ERASMUS+ could have a stronger link to the Digital Europe Programme (DEP) with projects on digitalisation of the energy system.

Importantly national funding programmes should be better aligned with the EU funding programmes' objectives and where possible create more synergies to maximise the investment resources in research & innovation. And national funding should be rooted to the actions set out in national policies, for example on the **National Energy and Climate Plans**.

In addition, **co-funded partnerships** between the EU, Member States and industry on wind energy could close the gap needed on scale and speed for wind energy and secure the competitiveness of its industry in Europe. Research & Innovation investments should be more, and more flexible to answer the wind industry's needs. Having a dedicated partnership on wind energy which manages targeted calls for proposals and steer projects through different EU funding mechanisms would be a step in the right direction.

To conclude, public support for R&I should focus on those technologies that will have a lasting positive impact on society. For the energy sector this means investing in those technologies that drive the wider energy transition and deliver tangible results in the short, medium, and long term.

The wind energy industry has firmly established itself as a strategic sector for the EU and is a safe bet for major investments. The sector has continuously outperformed initial expectations and will play a leading role in the European energy system. The EU has the best research and universities on wind energy and historically has been a world leader in scientific paper publications and patents on this technology.

The supply chain of wind energy in Europe is at risk today of losing competitiveness and its global leadership. It requires a coordinated policy response including a targeted R&I policy which makes a U-turn to the downward trend of EU investments in R&I from recent years.

Disclaimer