



Looking beyond 2030: Driving innovation via the revised Renewable Energy Directive

The Commission's assessment of the 27 National Energy & Climate Plans is stark¹ – Member States are currently not harnessing R&I to deliver on their climate and energy objectives.

To reach climate neutrality by 2050, and to strengthen Europe's global leadership in renewables, new innovations must be brought to market this decade.

Technologies such as geothermal, solar heating and cooling, next generation PV, next generation heat pump technologies, floating wind, concentrated solar power, ocean energy and bioenergy can then:

- *diversify the post-2030 energy mix*
- *facilitate the decarbonisation of energy supply, including power generation, heating and cooling supply and the transport sector*
- *balance a grid with a very high penetration of variable generation*
- *create high-value jobs and contribute to Europe's technological and industrial leadership in the green economy*

The Renewable Energy Directive is key to stimulating innovation in the sector. The revised Directive should:

¹ European Commission's EU-wide assessment of National Energy and Climate Plans, Sept 2020

Include a 2030 sub-target for innovation in renewables (article 3)

A new 2030 sub-target for energy generated by innovative renewables would deliver national market-pull to complement the Commission's market push mechanisms. The current lack of market visibility for innovative renewables at national level is a policy disconnect which widens the 'valley of death'. It prevents innovative renewable technologies from reaching the commercial stage and hinders Europe's ability to transform its current technological leadership into growth and sustainable jobs when they are most needed.

A new 2030 sub-target for innovative renewables would:

- Complement "technology-push" subsidies delivered by research programmes with "market pull"
- Ensure some early market visibility for innovative technologies to allow them to secure the necessary private investment
- Ensure new renewable technologies can prove their viability at scale and continue their cost reduction journeys
- Deliver a more diverse range of renewable technologies that will facilitate heating and cooling decarbonisation, provide much needed flexibility resources and security of supply to post-2030 grid with very high penetration of variable generation, improving the overall resilience of Europe's energy system
- Reinvigorate the EU's renewable R&I activities and position the EU as the global leader in renewable innovation
- A sub-target in the range 0.5-2 percentage points in the share of renewable energy in final energy demand would be appropriate
- Convey a clear signal to investors.

See Annex 1 for how this would work in practice.

Reduce the cost of capital for innovative technologies (article 3)

The cost of capital is a clear challenge for innovative renewable technologies. Depending on the sector, interest and dividends can represent up to 50% of total project costs. Reducing the cost of capital is thus the fastest way to reduce the overall costs of innovative RES.

The Renewable Energy Directive should specify how the cost of capital for renewable energy projects will be reduced. Here are the two main options favoured by our sectors:

1. a renewed EIB/Invest EU mandate to support and de-risk investments in innovative renewable energy technologies / RES manufacturing
2. the creation of a European insurance and guarantee fund for innovative renewable energy technologies as part of an overall de-risking framework set up at the European level with a focus on the market uptake of renewable energy technologies

Maintain technology-specific tenders (article 4)

Technology specific tenders are the only way to bring the innovative new technologies listed above down the cost curve. They help promising industries achieve savings through scale and technology learnings, and deliver affordable, decarbonised and predictable energy for EU citizen in the medium term.

The Directive's provision for technology-specific tenders is essential to preserve innovation in renewables.

Accelerate permitting for demonstration / first of a kind projects (article 16)

Permitting is one of the main bottlenecks slowing down the roll out of innovative renewable energy technologies. The ability to quickly deploy and test new technologies is crucial to maintain Europe's global frontrunner position in renewables. Demonstration / FOAK projects are typically smaller than commercial projects – so permitting is a proportionally larger burden for project developers.

To accelerate the development of innovative technologies, permitting of demonstration projects should be limited to one year maximum.

Incentivise data sharing from operating plants

The gathering of vast quantities of data and use of new methods to analyse it is more common than at the time of RED II's preparation five years ago. The ability of large datasets to reveal cost-saving insights is understood.

RED III should encourage the owners of renewable energy installations for both power and heat generation to share high-quality data on plant operation on voluntary basis. The opportunity for a community of owners and the R&D institutes they may collaborate with to learn from each other will minimise the costs of reaching the 2030 goals.

This initiative extends the work started with NER300 and continued in ETS Innovation Fund to build Knowledge Sharing communities. It will contribute to the Common European energy data space²

Annex 1 – Operationalising a 2030 sub-target for innovative renewables

A binding EU sub-target for innovative renewables can be integrated into **existing Energy Union & climate governance**:

1. Member States use their NECP updates in 2023 to report planned deployments and support measures for innovative RES.
2. The European Commission assesses these planned deployments in line with the below definition
3. Member States update their NECPs based on the Commission's assessment.
4. If the EU-level 2030 target for innovative renewable deployment risks not being met, the Commission can ask individual Member States to take additional measures.

Definition of **'Innovative renewable energy technologies'**: Power or heating and cooling generation technologies that represent breakthrough solutions or are sufficiently mature to be ready for demonstration at pre-commercial scale.

² See [COM\(2020\) 66](#) – A European Strategy for data

A RES technology can be considered as innovative compared to the state-of-the-art if:

- it differs from that normally offered by existing vendors/technology suppliers;
- it is not currently offered by multiple vendors or it is not offered as a standard product from a single vendor;
- it is further advanced from previously conducted demonstrations;
- novel inputs and/or manufacturing techniques will establish or strengthen a clear strategic advantage for the EU

The **EU-wide target** should be set by reference to relevant ETIP³ forecasts of 2030 deployments of innovative RES and be expressed as a percentage point target of overall renewable energy target. ETIPs are currently collecting this data.

An EU-level **diversity criteria** would be required, to ensure that target for innovative RES is filled by a range of technologies.⁴

Non-renewable and low-carbon fuels, including so-called 'low carbon' fossil fuels, should not be included in any provision under the Renewable Energy Directive nor should they count towards the EU's binding 2030 renewable energy target.

³ European Technology & Innovation Platforms, set up by the Commission. Relevant ETIPs include Renewable Heating & Cooling, PV, Wind, Deep Geothermal, Ocean Energy & Bioenergy

⁴ For example, a maximum [Gini coefficient](#) could be required, to ensure a minimum range of technologies were deployed.