

ETIP-PV supports “at least 5% innovative renewables” in Renewable Energy Directive revision

The European Parliament has made the good proposal that...

“In order to promote the production and use of renewable energy from innovative renewable energy technologies and to safeguard the Union’s industrial competitiveness, each Member State shall set an indicative target of at least 5 % of new installed renewable energy capacity between ... [entry into force of the directive] and 2030 as innovative renewable energy technology.” ([amendment to Article 3 of RED](#))

...defining an innovative renewable energy technology as one that

“improves in at least one way comparable state-of-the-art renewable energy technologies or makes exploitable a largely untapped renewable energy resource and involves a clear degree of risk, in technological, market or financial terms, which is higher than the risk generally associated with comparable non-innovative technologies or activities”; ([amendment to Article 2 of RED](#))

Boost to EU solar PV manufacturing

This amendment would benefit manufacturers of solar PV modules that use advanced cell technologies. Specifically, it would help those technologies that are beginning to be available but are yet to be produced in quantities and at prices that are competitive with dominant solar PV technologies, even if they offer a better return over the long term.

It would also benefit players upstream and downstream from cells, such as producers of silicon wafers via low-energy processes at one end to manufacturers of inverters or installers of floating or agri-PV systems at the other. PV integrated into building elements or vehicles are other growing areas.

Europe’s strategy to re-establish itself in PV manufacturing relies in large part on being first to market with innovative technology. The amendment could part be of the [Green Deal Industrial Plan](#) proposed by European Commission President Ursula von der Leyen. Innovative technologies, if/when they graduate to adopted technologies, will reduce material-use and space requirements per kWh, lifecycle CO₂ emissions per kWh or kW_p (see Box, at end) and improve levelised cost of electricity (LCOE).

How?

The target, if adopted, would put pressure on Member States to each put in place measures to reach the target. 5% of new capacity equates to tens of GW across the EU¹. Aid at the typical intensity of R&D programmes (say, 30% of CAPEX) would be too expensive for all this capacity, and is not needed. Instead, Member States will have to provide lower intensities of aid appropriate to technologies that are just starting to claim market share from incumbent technologies. Alternatively, they could create a regulatory environment equivalent to that financial support (for example, an exemption from possible changes in the EU’s electricity

¹ See the report [Deployment of innovative renewable energy technologies to 2030](#) (Oct 2022, 1-Tech under contract to EUREC)

market design that would reduce the profits generated by installations using those technologies) or technology-specific tenders for new capacity targeting innovative renewable energy capacity.

The amendment would put a requirement on all countries to reach the non-binding 5% target individually. By 2025, PV + battery systems are expected to be competitive with the average spot market price of electricity [even in as northern a place as Helsinki](#), meaning that installing innovative PV will be an attractive option across the EU for countries to reach their target.

If the amendment was referring to PV alone rather than all renewable energy technologies, ETIP-PV believes the target for innovative PV technology could be higher, closer to 10% of total new capacity. In new factories, this typically corresponds to the provision of space set aside for pilot production of new technology when conditions are right.

A role for ETIP-PV

A technology is only “innovative” for a certain period. ETIP-PV stands willing to work with Member States to propose a list of PV technologies that meet the requirements of the Article 2 amendment or to comment on a list proposed by Member States. We would be in favour of quite tight definitions, mirroring the approach in China’s ‘Top Runner’ programme, and of including modules produced with best-in-class resource- or CO₂-efficiency as innovative (Box).

ETIP-PV could do this as part of the NECP 2024-2029 preparation process, and three years later as a new exercise of the SET Plan². The SET Plan is a forum for clean energy technology research managers from across the EU to talk to European countries including all Member States, and the European Commission, about R&I priorities, so seems well equipped for this task.

ETIP-PV considers it important to support modules produced to a high environmental standard, and that modules having best-in-class resource-efficiency or representing the lowest embodied CO₂/kW_p, should always be considered ‘innovative’ even if produced in full-scale factories.

Box: CO₂ efficiency (emissions / W_p) as avenue for innovation

² As recommended in [this report](#), three years is neither too frequent to be administratively burdensome nor too infrequent to allow the state-of-the-art to overtake initially ‘innovative’ technologies