

INNOVATIVE WAYS OF SOLAR DEPLOYMENT

EURELECTRIC RESPONSE TO THE COMMISSION PUBLIC CALL FOR EVIDENCE

Eurelectric welcomes the Commission's commitment to remove barriers to the deployment of innovative ways of solar deployment. These methods harness the flexibility and adaptability of solar energy technologies, making them suitable for various uses and places while easing concerns about land use competition.

In this regard, Eurelectric response focuses on 3 major innovative methods: Agri-PV, Floating PV and PV for transport infrastructures.

AGRI-PV

For Agri-PV in particular, we would recommend the following 3 key lines of action:

1) Incentivise owners of agricultural land to engage in Agri-PV

The revised EU Common Agriculture Policy (CAP) 2023-2027 recognised the need to fight climate change through inter alia the uptake of renewables. Nevertheless, several National Strategic CAP plans and national policies do not give any attention to the role of Agri-PV as an innovative form of PV deployment supporting both electricity and crop production, which preclude farmers from optimising the use of their fields for multiple forms of production.

In this context we recommend policy makers to:

- i. Ensure that each farm with Agri-PV systems remains fully eligible for the CAP support without exclusion, avoiding potential conflict of interests between PV and agriculture.
- ii. Recognise the Agri-PV concept and consider it in the national CAP plans as a way for farmers to make their business more sustainable, reducing their emissions.
- iii. Consider also Agri-PV projects that extensify farming. Especially for areas where intensive agriculture takes place and its extensification is a relevant way forward for farmers.
- iv. Ensure that farmers keep existing national tax reductions also when they go for Agri-PV.
- v. Allow for co-financing of integrated solar projects - for instance, by combining agricultural subsidies, PV support schemes, and innovation grants.

2) Create an EU regulatory framework that facilitates Agri-PV

- i. Provide a pragmatic EU-wide definition for Agrivoltaic plants and keep land as agricultural land: The lack of definition of *Agrivoltaics* at EU level can result in alterations to land characterization when Agri-PV systems are implemented on agricultural land, impacting the eligibility of the landowner for agricultural subsidies. However, a strict definition will limit the development of the various types of innovative Agri-PV technological options instead of promoting them, which may jeopardise the realisation of the EU's solar targets.
 - ✓ The EU-definition should be as broad as possible by taking into consideration energy, crop, livestock, agricultural services, and biodiversity at the same time. Various technologies exist, including standard/ground-mounted, in-height, and vertical installations, all of which offer benefits and should be equally recognized in guidelines and legislations.
 - ✓ Also, a dual-use of the land through the production of renewable energy should be regulated, so the original status of the agricultural land is maintained. The definition should consider issues regarding the understanding of the use of land: whether it qualifies as agricultural or industrial land due to the installation of PV systems. A possibility is to regulate an appropriate land-loss ratio that allows for the preservation of Agri-PV areas as agricultural land: a maximum land-use percentage used for PV substructures and other aspects of the Agri-PV system could be considered. If the

projects stay below this percentage, the field is considered Agri-PV. And the function of the whole field remains agriculture.

- ii. Launch specific tenders for Agrivoltaics: Due to their higher costs compared to conventional ground-mounted or rooftop PV, it is challenging for agrivoltaics to be successful in regular PV auctions, in particular for non-standard installations. Eurelectric recommends issuing specific tenders or adding meaningful top-ups for Agri-PV, such as bonuses for agrivoltaics projects in conventional PV tenders. Such schemes should be reflective of the previously mentioned definition and facilitate deployment of various forms of AgriPV.
- iii. Create a database of Agri-PV projects in the EU. This can increase the knowledge of authorities, developers and farmers in the EU. Boosting the concept and maximize the lessons learned across borders.
- iv. Clarify certification for quality products (DOC, PDO, PGI...). There are several different farm products that benefit from quality labels. The awarding of these labels is subject to a certain number of criteria, linked in particular to the status of the farm. In this framework, the installation of solar panels on agricultural land benefiting from a quality label should not affect the award or the maintenance of the label. For this reason, it is important to clarify the criteria to allow agrivoltaic projects to be compatible with the maintenance of quality labels, if necessary, accompanied by studies to assess that agrivoltaic installations do not affect product quality.

3) Simplify permitting

Provided that the main function of fields within Agri-PV remain agriculture, boosting Agri-PV must be pursued with expedited permitting and accelerated grid expansion. In particular, the approval delays of environmental impact assessments and agricultural studies is holding projects back. Solutions include to implement RED III exemptions to project-level Environmental Impact Assessments (EIA) as long as a strategic assessment area-level has been carried out in advance. In addition, solar power plants under a certain threshold should not require a building permit to be installed and specific and shorter permit procedures for Agri-PV should be envisaged.

FLOATING PV

With regards to floating PV, we also see the economic and environmental benefits of supporting it. Hybridization with e.g., existing hydroelectric power plants leverage existing grid connection capacity and operating capacity, accelerating the deployment of clean energy.

As for how European legislators could help scaling-up floating PV, we would recommend the following:

1) Organize dedicated tenders for floating PV projects

Initial projects require some form of support to overcome barriers associated with the industry's relatively limited experience with this technology. We would recommend implementing specific tenders for floating PV. Today it is not possible for floating PV to compete against ground-mounted PV on equal terms.

2) Promote scientific studies

To ensure public acceptance and advance the understanding of the benefits of floating PV on the fauna and flora located around the installation, public scientific studies should be promoted by the European Commission and Member States.

Studies on the decarbonization of ports and island areas and the potential of co-location/hybridization with offshore wind farms could also contribute to the market uptake of this technology.

Thirdly, another area of study could be flood risk. Floating PV may be installed in former gravel pits in the major bed of a river, where flooding events pose a risk for the project. In some countries currently risk prevention regulations do not allow the installation of panels on these surface water bodies. One could define technical criteria to allow projects to be authorized after in-depth studies focusing on flood speeds and forces to be taken up by the anchor lines.

3) Encourage the development and installation of offshore floating PV installations

The development of floating photovoltaics systems for offshore use is still being studied, with first prototypes and pilot projects being installed. The structure is subject to wave motions, currents and potentially higher wind force, maintenance challenge, as well as higher risks of corrosion brought about by exposure to seawater. Policy should encourage the development and installation of pilot projects of offshore floating PV.

4) Generalise insurance coverage

When transformers are installed on floating platforms (often with less impact on the landscape than on land), insurance companies are reluctant to insure the project. It is necessary to generalise insurance coverage, regardless of the location of transformer substations, on the basis of in-depth studies and anchor reinforcements.

PV FOR TRANSPORT INFRASTRUCTURES (PV ALONG DIKES, ROADS OR RAILWAYS)

1) Centralise authorisation request across localities

The spread of linear installations over several kilometres and localities causes some difficulties: overlapping of policies and urban planning documents; multiplication of applications for authorization; instruction by different authorities depending on the geographical perimeter. Regulations should enable the pooling of certain procedures e.g., environmental impact assessment and public inquiry.

2) Facilitate the installation of PV across different land ownership regimes

Long-distance linear projects involve land under different ownership regimes (private property, public domain, concession). One could recommend to: a) Facilitate the agreement of the various owners or managers, as is the case for network infrastructures; or b) Generalise the possibility of multi-use of land for renewable electricity generation facilities in the lease agreements on the public domain (e.g., freeway or railroad concessions).

3) Adapt regulation to take fire risk into account

Fire regulations make no provision for photovoltaic power plants installed over long distances and accessible to the public. Regulations should be adapted to allow the deployment of linear power plants, with appropriate measures to take fire risk into account.

GRID CONSTRAINTS – A COMMON BARRIER ACROSS TECHNOLOGIES

Finally, similar to conventional PV installation, a common challenge that we see across most of these new forms of deployment is grid constraints in the form of network capacity planning or investment. Firstly, for most of them the geographical distance and sprawling installations complicates access to the grid. Network planning must incorporate these new generating projects to facilitate their integration into the grid. Secondly, it must be ensured that sufficient forward-looking investments are made in both distribution and transmission networks to transport the volumes that increasing PV will bring to end customers.

OTHER FORMS OF INNOVATIVE PV DEPLOYMENT

In parallel, Eurelectric also calls for the facilitation of other forms of innovative PV deployment. Alternatives to traditional PV panels that allow a more efficient use of space, typically where traditional solutions cannot be installed due to stability issues, for example, could also be promoted through this guidance. In countries with high population density and limited space for large-scale PV installations, lightweight PV solutions can play an important role in the further deployment of solar technology to meet the EU's 2030 targets. In addition, such solutions are part of a circular process as they are fully recyclable and use fewer raw materials such as steel and glass. However, these solutions – also manufactured in the EU – are usually more expensive than traditional PV panels and therefore face significant financial barriers as they are currently not economically viable. Eurelectric encourages Member States to promote, also through appropriate support mechanisms, such initiatives that enable (i) efficient use of space and (ii) circular production processes in the EU.