The Reshoring of the Solar PV Supply Chain to Ensure the Open Strategic Autonomy of the EU

How to Improve the Funding Instruments to Speed Up Investments in the EU

The European Union (EU) will need at least 40 GW per year of photovoltaic (PV) panels made in Europe to reach its decarbonisation goals. European industry cannot meet this demand, a situation that opens a significant geopolitical risk, due to dependence on supplies from third countries. Therefore, there is a **strategic need to invest in the relocation of the solar PV supply chain in Europe**.

Considering the current state of maturity of the PV industry in Europe and the dominance of third countries, especially China, **investments to build and scale the industry in Europe at all steps of the value chain require de-risking, both for companies and financiers**. There is a **competitiveness gap between Europe and China** that stems from the fact that players from those countries benefit from lower CAPEX and OPEX thanks to an integrated and larger-scale model, fostered by industrial policy, including subsidies.

To advance an EU-driven agenda for a competitive integrated PV industry, it is essential to **support the reduction of production costs to bridge the gap with Chinese producers** and **increase market space for European solar panels**. These mechanisms should be set up in a way that creates **large economies of scale and scope** in Europe, without increasing the costs of decarbonisation or slowing down its speed.

This paper contains Enel's proposals to improve the application of some existing funding instruments and introduce some measures that would speed up the development of a pan-European PV industry. These proposals have been developed after contractive dialogue with stakeholders from the European Commission (EC) involved in the relocation of the PV supply chain, including DG CLIMA, DG ENER, DG GROW and DG TRADE.

Proposed Modifications to Existing Funding Instruments

Innovation Fund

The Innovation Fund (IF) can play a prominent role in supporting an EU solar PV supply chain. The award of two PV manufacturing projects in the framework of the two large-scale calls launched has been a positive signal. But this should be just as a starting point.

In this respect, the EC should consider the following improvements to this program in order to promote the realization of significant projects that could spearhead the growth of an EU solar PV supply chain:

- **Dedicated Calls for the PV sector:** considering the EU strategy on reshoring the PV supply chain, there should be dedicated calls/sections within the IF specifically addressing the projects in the PV value chain with a dedicated budget for this scope.
- **Aid Intensity:** currently, the IF corresponds up to 60% of the relevant costs. This percentage should be increased to reduce the investor’s exposure and, therefore, the risks. In a few words, make the

Innovation fund closer to the IPCEI, where 100% of the funding gap or the eligible costs are covered, whichever is lower.

- **Co-Financing:** in the case that the IF finances less than 100% of the relevant costs, the Fund should be compatible with all the other available funding tools (from the Member States and the EU) up to the complete amount of the expenses to allow possible combination of funds.
- **Additionality Premium**: provide some form of additional premium for those projects in which the beneficiary has already other initiatives over the PV value chain (i.e., the beneficiary is a module /cell manufacturer, and it submits a proposal for wafers/ingots production). This measure would reward those investors who decide to support the reshoring of the EU PV strategy and invest heavily in a sector exposed to extreme competition.

Important Projects of Common European Interest

Taking advantage of the experience from the successful Important Projects of Common European Interest (IPCEI) in batteries and hydrogen, a similar initiative for PV solar would accelerate the establishment of an EU PV supply chain. In this context it is of utmost importance that the initiative:

- **Follow a bottom-up approach,** including support for end products used in solar energy installations, but also for raw materials and processed materials used in manufacturing processes.
- **Not only aim at promoting the development of innovative solutions**, but direct financial resources to the scale-up of the industry, allowing manufacturing facilities to grow in terms of capacity produced.
- **Have a shortened implementation timeframe**. The EC should accelerate all procedures needed to launch the already announced PV IPCEI and it should be committed to complete the assessment of State aid notification within six weeks. To be effective, these measures should be complemented by more flexible State aid rules governing EU solar PV manufacturing, aiming at:
  1. **Overcoming the "assisted areas" eligibility criteria**: ensuring that all "green manufacturing capacities" have equal access to State aid regardless of the regions in which they are located.
  2. **Covering the maximum aid level which should be determined based on the identified funding gap and eligible costs,** reaching up to 100% of the eligible costs, provided that the amount of aid does not exceed the funding gap.

Additional Policy Instruments

It is important to ensure that the establishment and scaling of the PV industry in Europe does not reduce the speed of decarbonization. Therefore, the establishment of some changes in the IF and IPCEI should be accompanied by additional policy instruments that will promote the use of domestically and sustainably produced solar panels (i.e., demand side measures).

Tax Credits

On demand side, a suitable instrument that could serve this scope is the introduction of tax credits for purchasers of equipment and material produced in a sustainable way. Tax credits can be an interesting tool to drive capital investment in the creation of an EU PV industry, since it will encourage developers to purchase certified products from manufacturers, strengthening the growth and the development of the industry.

Additional tax credits could be envisaged for solar panels that are innovative, in the sense that they have an increased performance compared to standard panels. An example of such an instrument has been observed in

the recently approved Build Back Better bill in the United States. The Build Back Better legislation aims to ensure that clean energy technology is built with domestically made steel and other materials and will support this effort with the establishment of, inter alia, tax credits to direct capital towards the decarbonization and revitalization of domestic manufacturing.

Non-Price Criteria in Renewable Auctions

An additional instrument to serve the scope of establishing a robust EU PV industry, while not decreasing the decarbonization speed, is the introduction of non-price-based criteria in renewable auctions. The revised Guidelines on State aid for climate, environmental protection, and energy (CEEAG) have introduced a set of provisions allowing for support mechanisms to renewables, including PV solar electricity production, where needed. It allows for the use of market-based instruments, such as contracts for difference.

National Governments have the possibility to apply up to 30% of non-price criteria when selecting projects in renewables (RES) auction winners. Non-price criteria can refer to sustainable and innovative manufactured panels. Accordingly, EU PV solar panels could be included in the selection process.

A recent interesting example of an EU country applying such criteria in renewable tenders is France. The French competitive CfD regime used the minimum amount of price criteria for allocation set by CEEAG, 70%, in order to include 30% non-price-based criteria in the final score for a bid. “Local content” was also embedded in the remaining 30% of the scoring criteria and developers were incentivized to aim for 6% CAPEX and 3% OPEX allocation to French SMEs.

For the upcoming Normandy offshore wind tender, the French Government has secured notification from DG Competition regarding a tender design that includes 25% of non-price criteria. Local economic development will account for 10% of the non-price criteria, including again the support to French SMEs. A similar approach can be pursued at the EU level to ensure that part of those non-price criteria will be in every Member State dedicated to the support of the EU PV industry. A different venue could be based on price premium for PV panels with adequate sustainability criteria until 2025. After that date, all PV panels installed in Europe should satisfy sustainability criteria defined at the EU level.

For both demand side mechanisms -tax credits and RES auctions-, it is essential that an EU certificate is established that is able to verify that photovoltaic panels satisfy adequate sustainability criteria. Such sustainability criteria, defined on EU level, shall demonstrate that all production and manufacturing steps are compliant with EU human rights, circular economy principles and decarbonization targets.