

## European Solar Manufacturing Council - Strategy Document

Strategic Perspectives for European Solar PV Manufacturing  
2020–2021



## European Solar Industry Renaissance

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ESMC is a new organization representing the interests of the European PV manufacturing industry. It is based on key industrial companies rooted in Europe, equipment manufacturers and world-class research centers, and established organizations active in the PV sector. It aims at promoting the interest of the PV manufacturing industry and its value chain at the European level.

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This document defines the strategy and course of action of the European Solar Manufacturing Council (ESMC). It focuses on making solar photovoltaics (PV) a central element of the energy transformation process in Europe, through a sustainable yet ambitious development of PV installations, jointly with a dynamic and competitive domestic manufacturing industry along the PV value chain in Europe.

To achieve these goals, the ESMC envisions a set of policies and regulations aiming at developing the PV market and the extensive redevelopment and growth of all segments of the PV value chain in Europe. This industry will feed the expected massive development of PV installations in Europe and globally.

## General structure of ESMC activities

### A. Support PV manufacturing in Europe through appropriate policies

The central point of ESMC activities aims at supporting PV manufacturing in Europe along the full value chain. This could be achieved by using smart instruments depending on the market and policy evolutions. A general set of industrial policies will be required and ESMC favours a systemic approach to EU-based production for the current and future energy system. It aims at creating a level playing field with foreign (especially Asian and American) competitors. To reach this objective, a set of policy instruments will be required:

1. **PV in the post-Covid-19 environment:** PV as a key enabling technology within the European Green Deal and Recovery Packages. Transfers from already existing R&D&I or development framework is essential. PV must be advertised as a clear and powerful solution to fight the economic downturn and mitigate climate change effects. In that respect, the existing and new stimulus packages must comprise dedicated lines for PV development, including manufacturing. As several countries have shown, the support for the energy transformation depends on the public acceptance of the measures and developments. PV doesn't escape this reality and well-paid jobs are part of the winning solution to public acceptance of the energy transformation. This comprises installations, but also industrial jobs and R&D&I jobs.
2. **Protect and build out strategically important value-chains locally:** the COVID-19 crisis illustrates the difficulties in several European countries to procure ad hoc equipment at a reasonable price, when traditional global trade options are under heavy pressure. Medical systems are just a part of the value chains, which must be preserved and reinforced in Europe in the coming years. Energy, food and military security are part of the fields of activity where such a regional and local focus is crucial, while maintaining an open economy. One cannot rely systematically on imports for key parts of the PV technology, as stated for a long-time by the European PV industry. As PV's share of the electricity mix is increasing and PV is becoming one of the most economic energy sources, it is

of strategic importance to have a regional and local PV value chain. One key element would consist in a fair tax system, which would not disadvantage local actors.

3. **Support technological evolution** by setting up dedicated schemes to ease the depreciation, re-usability and reconditioning of fast-changing equipment technologies.
4. **Sustainability policies** such as eco-design, green public procurement, ecolabel and energy label, or “environmental (CO2 content including transportation, scarce and hazardous materials etc.) and social footprint”: Simple but honest and traceable regulation schemes must be developed and applied to promote high environmental standards including carbon footprint. In addition to sustainability, social and quality standards are core elements of manufacturing in Europe. In this respect, the current work of the European Commission is an essential pillar to be supported and incentivized.
5. **Financing tools:** Public (Local, regional, national, European) and private financing tools will have to be fine-tuned to support local manufacturing. A special focus on the European Investment Bank (EIB) activities and rules of engagement are needed, combined with a novel, off-takers based approach, to de-risk the establishment of PV manufacturing. New investment schemes such as crowdfunding, Venture Capital, business angels or pension funds could be favoured, depending on the business segment and the technology novelty.
6. **Export facilities:** the EU PV market must be favoured by European manufacturers but should not stop at the European borders. In addition to tuning existing export policies and networks, an internal expert network – by invitation only or for members with special affiliation, plus the establishment of a database of experts and structures should support the industry with the right tools.

## B. Support PV manufacturing in Europe through appropriate market development

Market and industry developments can hardly be separated. A market development disconnected from industrial development would result in a continuous insufficient acceptance from the public and policymakers. As a result, market development should be developed in parallel and in symbiosis with manufacturing options, to maximize European based added-value and the creation of high employment possibilities.

Appropriate market development: PV as the key power generation source of the 21st century based on the following concepts:

1. **Wide-spread distributed PV:** self-consumption and energy communities, including novel decentralized and collective self-consumption concepts and peer-to-peer innovations.
2. **Competitive PV** is there, shifting policies to **accompany industrial PV development** in Europe, including tenders for utility-scale PV plants.
3. **Integrated PV: A double concept:** "PV everywhere" and "Dual Use-Territory (DUT)" including integrated PV concepts such as:
  - a. BIPV: PV in buildings: promoting BIPV in Europe and globally, including smart simplified BIPV regulations and products will create a brand-new market for PV development.
  - b. VIPV: PV in the automotive sector, accelerating the energy revolution though PV integrated in EVs with local PV-loading facilities. The use of PV embedded in EVs or to charge EVs with green electricity will contribute decarbonizing the automotive sector faster.
  - c. All other integrated PV concepts and dual-use ones such as Floating PV (FPV), AgroPV (APV), Anti-noise PV walls, PV on roads, PV above parking lots, etc.
4. **Connecting Information technology to Smart Grids**, digitalizing the energy systems including potential use of innovative technology to allow a seamless integration of high renewable energy shares in energy networks.
5. **Solar Fuels:** Green Hydrogen and similar clean synthetic fuels from Solar will allow fully decarbonizing the energy sector, and the industry at lowest cost!

## C. Alliance building

PV must be considered seriously and requires massive support from all industries and sectors that it will significantly reshape in the coming years. ESMC proposes to build powerful alliances, which will increase the added value of these sectors and drive the acceleration of their adaptation to the energy transformation.

1. **The energy sector at large:** energy companies should realize the opportunities PV offers, both in the power and general energy sectors.
2. **Building sector:** In addition to retro-fitting solar panels on rooftops, new buildings as well as renovation are part of the markets to explore for PV to massively develop in Europe, offering new opportunities and joining forces with the heating and cooling sectors, smart buildings, and energy communities. BIPV is only one of the multiple aspects of the inclusion of PV in the building sector.
3. **Transport sector:** VIPV can revolutionize transport, from automotive, motorbikes to aviation and the maritime transport sector. But it offers other possibilities to include PV as a part of its energy perspectives, e.g. via the integration of PV into the transport infrastructure such as roads, rail stations, sound barriers, EV charging stations and compensation areas.
4. **Heavy industries:** PV has a key role to play in decarbonizing heavy energy industries such as steel and concrete, through replacing carbon by green hydrogen, and in direct use of clean electricity.
5. **Energy vectors and storage:** this comprises but not exclusively the green hydrogen production and distribution and joined business models for PV. Connections with the transport, and building sectors are numerous and promising. The use of batteries and other storage systems in innovative business models will favour PV development.
6. **Telecommunications and ICT:** while smart grids concepts emerge to allow integrating a higher share of distributed variable renewables within the grids, the need for ad hoc communication tools implies to involve massively the existing ICT actors and connect the worlds of energy and communication.

## D. Support R&D for PV within the energy transformation

There is no industrial success without R&D&I properly funded and connected to the manufacturing industry. ESMC supports a massive plan for funding R&D towards new and innovative technologies and their path to market development. This can include specific policies to favour pilot projects in the industry. The key factors are as follows:

1. R&D activities focusing on cost reduction, efficiency increase, reduced use of unsustainable materials and scarce resources, eco-design of the products, re-usability, and recycling of products.
2. A balanced focus on existing technologies and promising new ones.
3. The smart use of the new Horizon Europe program and other support scheme facilitation.
4. Two-ways smart international cooperation.
5. R&D Interaction with other new technologies such as green hydrogen generation, ICT/digitalization, etc.



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