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ESMC PROPOSALS FOR THE NZIA IMPLEMENTING ACT

General remarks

We, the European Solar Manufacturing Council (ESMC), representing nearly the entire European solar photovoltaics (PV) manufacturing industry (almost 80 companies), urgently request the European Commission to swiftly adopt NZIA Implementing Act to safeguard EU PV module producers and associated parts of the value chain.

Due to current existential challenges in the global and the EU PV manufacturing industry it is an urgent need for NZIA to become effective without delay. Hence the application of resilience and sustainability criteria in auctions and public procurements should be promoted as soon as possible.

Currently, the concrete impact of NZIA for the competitive and sustainable EU PV manufacturing is not yet clear as presumably it will be applied gradually, and the Member States will have certain flexibilities. Consequently, the resilience and sustainability criteria should be designed in a way to maximise the potential for the European PV manufacturers to benefit from auctions, public procurements and other forms of public intervention.

Resilience and sustainability criteria should be defined individually for each Net-Zero technology to allow the Member States to apply the NZIA provisions in full scope and without any delay. Certain flexibilities among the Member States are unavoidable, however, well-defined criteria from the European Commission would allow Member States to apply the criteria earlier in harmonized way.

ESMC strongly advocate that the NZIA “single source” dependency specification, e.g. *“the obligation for the duration of the contract not to supply more than 50 % of the value of the specific net-zero technology from each individual third country as determined by the Commission”*¹ should refer to a country that has more than 50% market share which should mean the combined global market share of all the production, originating not only from within the third country's borders but also that produced outside of its national borders by entities controlled either directly or indirectly by companies based within that country.

Sustainability and resilience pre-qualification criteria and award criteria (Applies for Art. 25 and Art. 26)

Applicability of resilience and sustainability criteria should be based on two-tier approach — first of all as a pre-qualification criteria to be followed by an award criteria for those products that exceed the minimum pre-qualification criteria.

Resilience criteria:

The number of steps in solar supply chain completed in the European Economic Area (EEA) / “single source” dependency specification should be used as the basis for both the pre-qualification criteria and the award criteria. The steps should include metallurgical silicon, polycrystalline silicon, ingots, wafers, solar cells, solar glass, frames, back sheets, encapsulants, ribbons, junction boxes, final

¹ Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem and amending Regulation (EU) 2018/1724, [Regulation - EU - 2024/1735 - EN - EUR-Lex \(europa.eu\)](#)

module assembling and inverters. The different steps could be valued differently in, e.g., points or percentages, according to value and proportions so that weight is given to critical value chain steps at the same time preserving the existing parts of the value chain of the EU. Resilience criteria should reflect a minimum proportion (at least 35–50%) of the product value created within the EEA. A certain minimum threshold of points/percentages from the different value chain steps completed in the EEA should work as the minimum pre-qualification criteria. Higher score in points/percentages — higher awards after the minimum pre-qualification criteria have been met.

One example of such approach is the French *“Pacte de solidarité industrielle photovoltaïque”* endorsed on 5th April this year — an *InduScore* framework that distinguishing PV modules in four categories: *InduScore A* if 4 industrial steps have been completed in the European Economic Area (EEA), *InduScore B* if 3 industrial steps have been completed in the EEA, *InduScore C* if 2 industrial steps have been completed in the EEA, *InduScore D* if 1 industrial step has been completed in the EEA, *InduScore E*, if no steps are completed in the EEA². Another example is the amendments of the Austrian Renewable Energy Expansion Act³: *“If a photovoltaic system or an electricity storage system supported by an investment grant under Part 2 of this Federal Law is built with technical components with European (EEA) added value, a surcharge on the investment grant of up to 20% can be provided.”*

Resilience criteria is of particular importance for the PV inverters as current remote controllability of the PV inverters raises energy security risks for the EU. Resilience criteria for the PV inverters should be applied in such a way that it would prevent third countries from direct access to the control of the PV inverters installed in the EU energy systems. As an absolute minimum the data loggers for the PV inverters must be tamper-proof so that the inverter could not be controlled nor be switched off remotely by a third-party nation outside the EU.

Concerning the production of the inverters, at least 60% of the value added (in relation to the manufacturing costs) of an inverter must be created directly by the inverter manufacturer — or by Tier 1 supplier of parts and components — in countries that do not comply with the “single source” definition. Specific production steps can be defined that must be fulfilled: (1) The assembly of the inverter (“final assembly, final testing & packaging”) — 100%, (2) Assembly of printed circuit boards — 100%, (3) Production of the inverter housing, heat sinks — >80%, (4) Production of inductors — >50%, (5) Safety relevant components, power modules, DC disconnectors, EMC — >80%.

Proof of resilience:

The robustness of resilience criteria should be proven by an adequate and trustful framework to check the provisions of the country of origin. Verification process of the country of origin is critical. This should be done based on IEC 61215 and IEC 62730 certificates, as this is the existing procedure. In case of a need to check and prove further, the number of employees and materials used/imported in the production processes are the easiest way to prove the actual production within the EEA. Supplier (manufacturer) declarations could be an additional supportive element. Consequently, it should be evaluated only as a proof instrument for the accuracy of data on supplier side.

For cells and modules, the definition of resilience should entail that both the assembly process and the cell manufacturing process (1) are carried out within the EEA and, (2) are traceable and verifiable via a dedicated software system, e.g., *Manufacturing Execution System (MES)*.

² Photovoltaic industrial solidarity pact,
<https://presse.economie.gouv.fr/?p=127890&lang=fr&preview=1>

³ Renewable Energy Expansion Act, amendment (2608 dB),
<https://www.parlament.gv.at/gegenstand/XXVII/2608>

As soon as the requirements for a PV passport are established, it should be used to enhance the traceability and transparency of solar PV manufacturing.

Sustainability:

Minimum mandatory requirements should be applied according to five environmental sustainability criteria and one social sustainability/responsible business criteria:

- Carbon footprint: Carbon footprint calculation should be based on EPEAT methodology. Use of green certificates must therefore be limited — EPEAT allows up to 25% PPAs for example — in order to limit any distortion. Use of national grid mix emission factors for the carbon footprint calculation is the most practical method to avoid cheating. A strong mechanism of control and verification must be implemented.
- Compliance with EU Environmental Legislation: All imported solar products should comply with the same environmental legislation as the one applicable for European manufacturers. A strong mechanism of control and verification must be implemented.
- Efficiency of electricity production: Smaller land consumption, associated with a greater production of electrical energy during the lifespan of the solar power plant.
- Content constraints: Polymer coatings cannot contain halogens (such as fluorine, bromine, and chlorine) and be free of PFAS chemicals in the back sheet. Antimony-free solar glass should initially be encouraged and later obligatory.
- Recycling: Implementation of the CENELEC EN50625-2-4 and TS50625-3-5 standards.
- Social sustainability / responsible business conduct: No to forced labour made products. Leverage from the US UFLPA entity list and the EU database (once it is set up) on risk products and areas before the Forced Labour Regulation is enforced. Consider minimum standards of international labour standards and encourage compliance with EU Labour Legislation.

Verification and Enforceability of resilience and sustainability criteria

Criteria used to prove resilience and sustainability must be able to be checked by an independent, well established and reputable long standing verification organization (i.e., TÜV, VDE, Veritas, etc.). In order to deter any form of cheating, any party caught cheating on resilience, sustainability or any other criteria must be severely reprimanded, with fines and impossibility to sell or import goods in Europe for a period of, e.g., 3 years.

Other forms of public intervention (Art. 28)

Other forms of public intervention should describe the potential areas where the Member States could apply resilience and sustainability criteria — PPAs, residential sector and other potential areas. The effectiveness of NZIA will depend mostly on the extension of the areas where resilience and sustainability criteria could be applied.

Member States could link the VAT reduction or 0% of VAT to PV modules/systems for residential installations with the provisions of NZIA. The Member States would be applying reduced or 0% VAT to the PV modules / systems in line with sustainability and resilience criteria while for the rest the original level of VAT tariff would be applied.