



SolarPower Europe Response to Inception Impact Assessment on the **Energy Performance of Buildings Directive 2010/31/EU**

Solar Power Europe's recommendations for the Energy Performance of Buildings Directive 2010/31/EU:

- **Introduce requirements to deploy on-site solar PV and storage on all suitable buildings.**
- **Design Mandatory Energy Performance Standards that incentivise integrated building renovations, with a focus on final energy consumption reductions.**
- **Require renovation budgets to reserve a minimum share to deploy on-site solar and storage.**
- **Promote “time-of-use” energy efficiency in buildings.**
- **Require Member States to deploy on-site solar and storage as part of their National Long-Term renovation Strategies.**

The **revision of the Energy Performance of Buildings Directive 2010/31/EU (“EPBD”)** will be essential to achieve increased 2030 climate and energy targets, be on track to achieve climate neutrality by 2050, and achieve the objectives of the **Renovation Wave**, specifically the objective to reduce 60% building-related emissions by 2030 compared to a 2015 baseline.

To achieve the objectives of the **Renovation Wave**, the **EPBD should accelerate the deployment of on-site solar across the EU, including Building Integrated Photovoltaics (“BIPV”)**. Building envelopes (both roofs and façades) represent a significant potential to deploy decentralized renewable energy capacity and support the achievement of the EU's renewable energy ambition. BIPV combines these advantages with passive and active measures of energy efficiency on already built surfaces.

Analysis carried out by SolarPower Europe showed that the share of renewables in EU final energy demand should be of at least 45% by 2030, requiring the deployment of at least 870 GW of solar capacity by 2030. Conservative estimates carried out by the Joint Research Centre indicate the solar rooftop generation potential of the EU's buildings is 680 TWh, equivalent to 24.4% of current electricity consumption¹. Two thirds of this potential (467 TWh) could be generated at a cost lower than today's residential tariffs. The solar potential of EU buildings is even greater if we consider that BIPV allow solar to be deployed throughout the building envelope. Today, the BIPV market in Europe stands at approximately 200 MWp per year. The European BIPV market represents an annual opportunity of almost 600 million € in 2020, and by 2023 this market value could almost triple and reach more than 1500 million € in the best-case scenario².

In parallel to on-site solar, the **EPBD should accelerate the deployment of distributed storage in new and renovated buildings**. The combination between smart solar & storage allows prosumers to reach a 60% to 90% rate of electricity

¹ JRC (2019). A high-resolution geospatial assessment of the rooftop solar photovoltaic potential in the European Union

² SUPSI & Bequereel Institute (2020). Building Integrated Photovoltaics: a practical handbook for solar buildings' stakeholders https://solararchitecture.ch/wp-content/uploads/2021/02/BIPV_Status_Report.pdf



self-consumption³. Increasing the roll out of decentralised loads would increase the potential for buildings to provide flexibility services, enhancing the smart management of an increasingly renewable energy system and reducing grid-related costs.

Overall, accelerating the deployment of on-site solar and storage will have positive effects on job creation, unlocking significant potential for sustainable investments, and support a resilient green recovery. As shown by the IEA, investments into rooftop solar offer the highest level of jobs created of any power generation technology⁴.

The on-site solar and distributed storage sectors are SME heavy and contribute to the creation of local, qualified, and sustainable jobs. Solar PV creates more jobs than any other energy industry driven in part by rooftop solar⁵. Furthermore, 3 out of 4 solar jobs in the EU are downstream jobs, which are local and cannot be relocated⁶.

The revision of the Energy Performance of Buildings Directive should:

1. Introduce requirements to deploy on-site solar PV and storage on all suitable buildings.

The revised EPBD should lay binding requirements to **ensure that all buildings in the EU, both new and existing are equipped with on-site solar PV and storage**. Such requirements must be technically and economically feasible and be designed in accordance with local energy demand load profiles with a view to integrate end-use sectors. If deployment of on-site solar and storage is not technically and economically feasible, **Member States should require that all new and renovated buildings are “solar ready”**, ensuring that on-site solar and that flexibility assets can be deployed in the future.

This measure should be introduced as a **new article in the revised EPBD to require Member States require the deployment of on-site solar and storage as part of their building codes**. They could be modelled on existing requirements for Member-States to ensure that non-residential are equipped with building automation and control systems (EPBD, Article 14.4) and residential buildings are equipped with electronic monitoring systems and effective control functionalities (EPBD, Article 14.5).

There is a growing trend to introduce on-site solar requirements in the EU and the world. Mandatory requirements to deploy on-site solar have been introduced in France⁷, Tübingen⁸ (Germany), Utrecht⁹ (the Netherlands). Beyond the European Union, requirements for on-site solar have been introduced in California¹⁰ (including storage) and New York City¹¹.

Requirements would complement the introduction of local-level renewable energy capacity and flexibility targets in the context of integrated urban and energy system planning as proposed by SolarPower Europe for the revision of the Renewable Energy Directive¹². This would ensure that:

- excess generation of individual buildings with a high solar potential can be stored or used in flexible appliances or to compensate lacking generation of other buildings,
- buildings with only a small potential for generation compensate by providing additional flexibility, while other buildings generate a higher share of renewables.

³ SolarPower Europe (2020). European Market Outlook For Residential Battery Storage, 2020-2024. <https://www.solarpowereurope.org/european-market-outlook-for-residential-battery-storage/>

⁴ IEA (2020). Sustainable Recovery. <https://webstore.iea.org/download/direct/3008>

⁵ EY & SolarPower Europe (2017). Solar PV Jobs & Value Added in Europe

⁶ SolarPower Europe (2019). Solar Jobs Factsheet

⁷ France (2019) LOI n° 2019-1147 du 8 novembre 2019 relative à l'énergie et au climat (1), Article L111-18-1. <https://www.legifrance.gouv.fr/loda/id/LEGIARTI000039358684/2019-11-10/>

⁸ PV-Magazine (2018). Tübingen führt Photovoltaik-Pflicht ein. <https://www.pv-magazine.de/2018/07/05/tuebingen-fuehrt-photovoltaik-pflicht-ein>

⁹ The Guardian (2020). Utrecht rooftops to be 'greened' with plants and mosses in new plan <https://www.theguardian.com/world/2020/mar/27/utrecht-rooftops-greened-plants-mosses-vertical-forest>

¹⁰ California Energy Commission (2019). Building Energy Efficiency Standards for Residential and Nonresidential Buildings for the 2019 Building Efficiency Standards. <https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf>

¹¹ Urban Green Council (2019). NYC's Sustainable Roof Laws.

https://www.urbangreencouncil.org/sites/default/files/sustainable_roof_laws_brief_final_12.11.19.pdf

¹² SolarPower Europe (2021). Response to the Consultation on the Review of Directive 2018 /2001/EU on the promotion of the use of energy from renewable sources



This approach would unlock synergies with the framework for collective self-consumption and renewable energy communities, in addition to accelerating system efficiency gains from the deployment of on-site renewable electricity capacity.

2. Design Mandatory Energy Performance Standards that incentivise integrated building renovations and focus on final energy consumption reductions.

The introduction of Mandatory Energy Performance Standards (MEPS), highlighted as a central element of the EPBD revision, is an **opportunity to incentivise integrated building renovations and accelerate renewable based electrification of buildings and other end-use sectors.**

An EU-level framework for MEPS should be established for focus on reducing final energy demand. A useful model is the French “Decret Tertiaire”, which introduced requirements for tertiary buildings with a surface above 1000 m² to gradually reduce their final energy consumption, with milestones established for 2030, 2040, and 2050. The focus on final energy demand would encourage fuel switch in non-residential buildings and promote the use of renewable energy in HVAC and transport in the buildings.

If minimum requirements for renewable energy consumption in buildings are introduced in the revision of Directive 2018 /2001/EU on the promotion of the use of energy from renewable sources (“REDII”), MEPS based on final energy consumption could be used to establish the amount of renewable energy generation required to cover 50% of the total energy consumption of the building and all activities (industrial/economic) taking place within that building by 2030.

3. Require renovation budgets to reserve a minimum share to deploy on-site solar and storage.

The **EPBD should reserve a minimum share of renovation budgets to deploy on-site solar and storage.** Targeted support should be provided to low and middle-income households, to deploy on-site solar as part of their renovation projects. Additional support could be provided for the deployment of innovative clean energy technologies, such as BIPV, distributed storage capacity, advanced energy management systems, or appliances that maximise the use of excess solar electricity.

4. Promote “time-of-use” energy efficiency in buildings.

Energy efficiency is today viewed in a static manner and does not address the possibility that buildings can contribute to energy system integration by exporting energy or taking up load to balance the system. The revision of **the EPBD should integrate the notion of “time-of-use” to energy efficiency.** This would reflect the time-based element of energy usage that considers an increasingly variable energy mix, rewarding the provision of dynamic energy services, such a demand-side and supply-side flexibility.

5. Require Member States to deploy on-site solar and storage as part of their National Long-Term renovation Strategies.

The **EPBD should require that Member States' Long Term Renovation Strategies (LTRS) include an overview of concrete policies and a timeline of actions to deploy on-site renewables and decentralised storage.** Currently member States are only required to provide an overview of national initiatives to promote smart technologies (EPBD, Article 2a.1.(f))

In their LTRs, Member States **should outline the measures to remove barriers that impede the deployment of on-site solar and storage.** These measures should seek to reduce administrative burdens for the deployment of on-site solar, including the exemption to require a construction permit for rooftop solar, and ensure third-party ownership of prosumer installations is allowed. Member States should also seek to harmonise standardisation procedures for innovative construction products, such as BIPV,

National Long Term Renovation Strategies should **also include plans to deploy both on-site solar and storage integrated on all suitable buildings.** Five EU Member States included targets for prosumer development within their NECPs (AT, FR, HR, EL, HU), 3 countries present target for prosumer development in public buildings (BE, LU, ES), and six countries present trajectories for prosumer development (CZ, EE, IT, LT, RO).