Estimate the PV deployment potential of the Solar Mandate

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Summary: The analysis carried out assesses the solar PV deployment potential enabled by the implementation of the EPBD Solar Mandate across BREEZE pilot countries. Using detailed building stock data from France, Italy and Poland and using the European building-stock data, the task evaluates the suitability of public, residential, and non-residential buildings for rooftop PV and building-integrated photovoltaics (BIPV). This one pager is the summary of the ongoing work, while the detailed report is available on BREEZE website.

Methodology

The analysis estimates the additional rooftop solar PV potential for the EU and for BREEZE pilot countiries associated with the EPBD Solar Mandate across four building categories:

- **Existing public buildings**
- **Existing non-residential buildings**
- **New residential buildings**
- **New non-residential buildings**

For existing buildings, **EUBUCCO building-stock data** are used to estimate useful floor area based on building footprint and number of floors and to classify buildings according to the relevant EPBD size thresholds. For new buildings, **Eurostat building-permit data** (2021–2025) are used to estimate annual new construction.

Based on the analysis, suitable rooftop area for solar PV estimates 40% suitability for non-residential buildings and 25% for residential buildings.

A uniform PV power density of 234 Wp/m^2 is applied to calculate the potential installed capacity. The resulting capacity is allocated according to the relevant **EPBD implementation deadlines.**

Results

The analysis estimates the additional rooftop solar PV capacity that could be enabled by the implementation of the EPBD Solar Mandate across the EU and the BREEZE pilot countries. , while the timing of deployment reflects the progressive EPBD deadlines applying to different building categories. The results highlight the significant role that the EPBD Solar Mandate could play in unlocking additional rooftop solar capacity, with the existing building stock representing the largest source of unrealized potential.

European Union

The analysis estimates approximately 225 GW of solar PV potential by 2030 from implementation of the EPBD Solar Mandate. Existing buildings account for around 182 GW, making them the main source of the identified potential. The largest annual increase occurs in 2027, at around 76 GW, linked primarily to the requirements for large public buildings

France

Around **28.9 GW** of additional PV potential is identified by 2030. Existing buildings contribute approximately 19.1 GW, while new construction accounts for around 9.8 GW. Annual potential reaches its highest level in 2028, at around 8.7 GW.

Italy

Around **24.5 GW** of additional PV potential is identified by 2030. The potential is strongly concentrated in the existing building stock, which contributes approximately 22.6 GW, or 92% of the total. The largest annual potential occurs in 2027, at around 8.0 GW.

Poland

Around **14.1 GW** of additional PV potential is identified by 2030. The largest annual potential occurs in 2027, at approximately 4.1 GW, driven by the EPBD requirements applying to large public buildings.

*slight modification to the results may be portrayed in the detailed report

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