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## INTRODUCTION

**Building-integrated photovoltaics (BIPV)** are a type of RES to significantly contribute to efficiently produce renewable energy in the urban environment. They also help to **reduce carbon emissions and mitigate climate change** and can significantly contribute to EU-Building standards, such as zero-energy buildings (ZEBs) and near-zero-energy buildings (NZEBS).

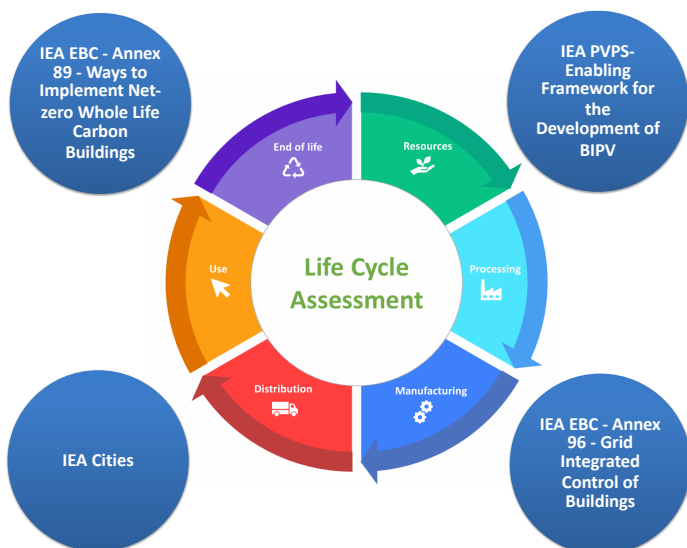
This study will gather information on the role of PV and BIPV in the energy performance and environmental labelling of buildings, e.g. LCA of buildings as described in normative regulations including **EN 15978**. Recommendations will be developed in collaboration with other IEA Annexes/Tasks regarding the role of PV in improving the energy performance and environmental labelling of buildings.

## AIM

As part of **IEA PVPS Task 15 – STA.2: BIPV in the environmental labelling**, international regulatory standards will be analysed to gain a wide understanding on global developments regarding sustainability labels and normative frameworks.

Furthermore, findings directly contributes to **IEA PVPS Task 15, Activity A1-2 BIPV Market Potential** due to overlapping interests including expert workshops and joint publications throughout the two IEA PVPS Tasks

## RESULTS



## CONCLUSION

- BIPV must be considered in terms of the energy performance and environmental labelling of buildings.
- KPIs regarding building physics need to be addressed as on top of LCA-indicators
- Exchanging ideas with different stakeholders from the buildings sector is crucial.
- Different types of BIPV (windows, roofs, facades) may need to be addresses individually

Survey to explore how photovoltaic systems are currently addressed in energy and environmental labeling schemes (app.10 min)



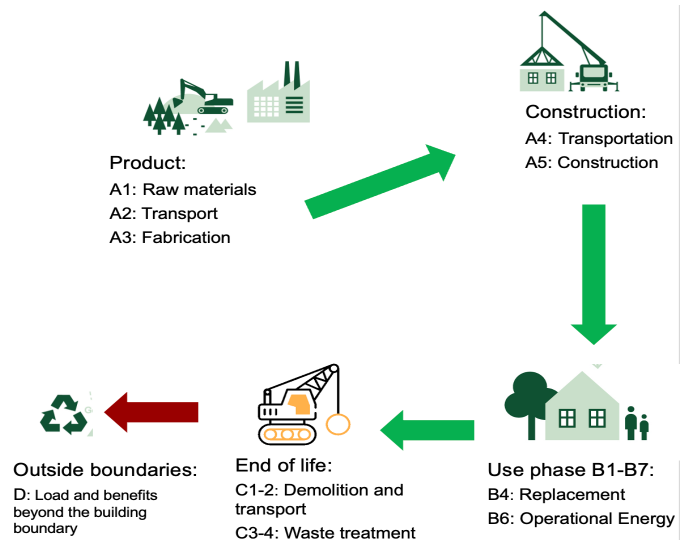
## Whole Life Carbon APPROACH

Calculate the Whole LCA of Buildings (EN15978:2011)

- National limits in EU required:2028 and 2030 (EPDB)
- Cradle to Grave approach, divided into phases
- Sums up all the loads and benefits of all materials, processes and utilities used for the building operation
- Environmental product declarations or national data

Only Phases A-C to be used for compliance with limits  
NB direct implementation of 15978:2011

- BIPV -full load of PV system
- Only CO<sub>2</sub> from operational energy (smaller fraction)



### National and International Regulations and Standards

- Europe – EN15978: As per 2024 this document specifies a calculation method based on life cycle assessment (LCA) and other quantified environmental data for evaluating the environmental quality of a building and its location.
- Europe – Waste of Electrical and Electronical Equipment (WEEE): This Regulation demands a minimum recycling-quote of 80% for any kind of electronical waste, including BIPV and BAPV modules, as well as any PV inverters.
- Austria– OIB-Guidelines: The uniform building regulations issued by the Austrian Institute of Construction Engineering (OIB) and adopted by the federal states in their building codes. They specify minimum requirements in areas such as fire protection, sound insulation, energy conservation, and structural stability.
- Austria – OVE E 8101: This standard contains requirements for the planning, installation, and testing of low-voltage electrical installations, including PV systems. These requirements apply, for example, to residential buildings, commercial and industrial premises, or office buildings.

For more information and publications contact the author, or scan the QR code  
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