



## Introduction

- The life cycle inventory (LCI) phase of life cycle assessment (LCA) involves data compilation of materials and energy inputs, and emissions and product outputs for the complete life cycle of the system from cradle to grave
- These data are separately collected or modeled for the PV modules and the balance of system (BOS)

## PV modules

- LCI data are presented for commercial PV modules (multi-crystalline silicon, mono-crystalline silicon, thin-film CdTe, thin-film CIGS) and one emerging technology (thin-film perovskite silicon tandem)
- Data represent different geographic regions of module production and supply chains (Europe, China, North America, and Asia & Pacific)

## Balance of system

- BOS data are presented for structural and electrical components of roof-mounted and ground-mounted PV systems



- This report updates the 2015 version (IEA PVPS Task 12 Report T12-4:2015)
- LCI data tables are provided in section 3
- Updates are provided for:
  - Crystalline Si modules and supply chain (Section 3.1),
  - Thin film CdTe PV module manufacturing (Section 3.2)
  - Perovskite silicon tandem PV manufacturing (Section 3.4)
  - PV recycling (Section 3.5)
  - Low power (2.5-20 kW) inverters and Li-ion battery storage (Section 3.7)
  - Country-specific PV mixes (Section 3.9)
  - Water usage (Section 3.11).
- Electronic versions of LCI data tables are available at:
  - IEA PVPS (<http://www.iea-pvps.org>; select Task 12 under Archive)
  - treeze Ltd (<http://treeze.ch>; under Publications)

