



## **Task 66: Solar Energy Buildings**

**Integrated solar energy supply concepts for climate-neutral buildings and communities for the "City of the Future"**

### **Subtask A: Boundary Conditions, KPIs, Definitions and Dissemination Highlights of the Activities**

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# Deliverables



- 1. Final List of KPIs**
- 2. Final Definition of Reference Buildings / Cases**
- 3. Industry Workshops**
- 4. Solar Energy Building promotion guidelines for investors, building owners and politicians**

# Final list of Key Performance Indicators



The KPIs collected/defined in this Task can be used to

- evaluate and compare different buildings/blocks/communities
- evaluate and compare different concepts in one building/block/community
- optimize components of the building in terms of energy use/flows, economics, ecological etc.

They cover the following aspects:

- Energetic and technical
  - Ecological
  - Economic
  - Sociological
- 17 KPIs

# Example: total solar fraction

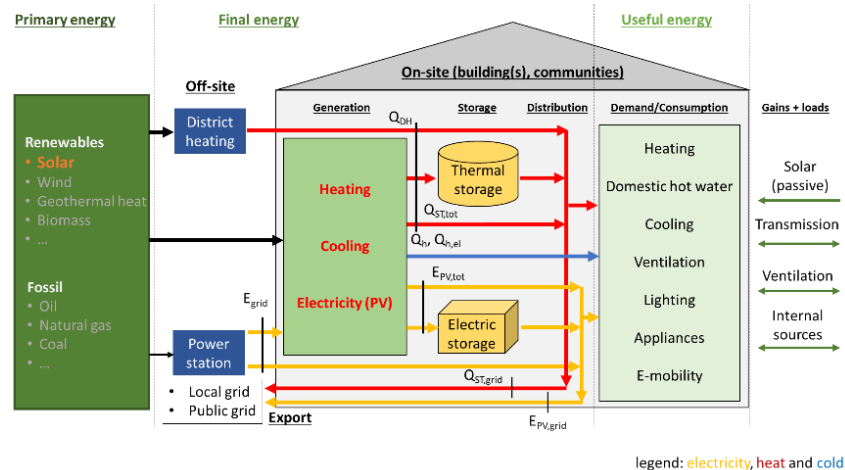


$$f_{sol} = \frac{E_{PV,tot} - E_{PV,grid} + Q_{ST,tot} - Q_{ST,grid}}{E_{PV,tot} - E_{PV,grid} + E_{grid} + Q_{ST,tot} - Q_{ST,grid} + Q_{grid} + Q_h - Q_{h,el}}$$

Fraction of self-generated and self-used PV electricity and solar thermal useful heat referred to the total energy used for household and technical purposes in the form of heat and electricity.

Energy supplied by solar part (PV or ST) of a system divided by the total system load (electrical and thermal).

Total solar fraction = LCF – Solar Load Cover Factor [%]



A Draft of the „Final List of KPIs“ is now available

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# Definition of reference buildings, building blocks and/or communities



**Why reference buildings, building blocks and/or communities?**

- 1. Comparing different energy supply concepts on the basis of clear and comprehensible boundary conditions.**
- 2. Elaboration of reasonable energy supply concepts for typical buildings, building blocks and/or communities in the participating countries based on representative samples.**
- 3. Validation and calibration of simulation models based on representative samples.**

**Method:**

**Definition of one or more country-specific reference building(s) for each of the country-relevant building types (single family, multi family, block, community) and related heating system(s) by each of the Task 66 participants.**

# Main advantages of country-specific reference building(s), building blocks and/or communities



- **Every country/participant can define reference buildings and relevant heating, cooling and HVAC systems that take into account the specificities in the country.**
- **Consideration of country-specific building characteristics and traditions (e. g. accounting for specific climate conditions) as well as standards and regulations.**
- **Enhanced usability of the results within the respective countries.**
- **Reflecting local conditions, country-specific buildings possibly boost the local market more than findings and/or statements derived from joint reference building(s) valid for all participating countries.**

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**Subtask A: Boundary Conditions, KPIs, Definitions and Dissemination**

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