

# PVT 101

## MONOVALENT PVT SYSTEMS FOR HEAT SUPPLY IN RESIDENTIAL BUILDINGS

### PHOTOVOLTAIC-THERMAL MODULES

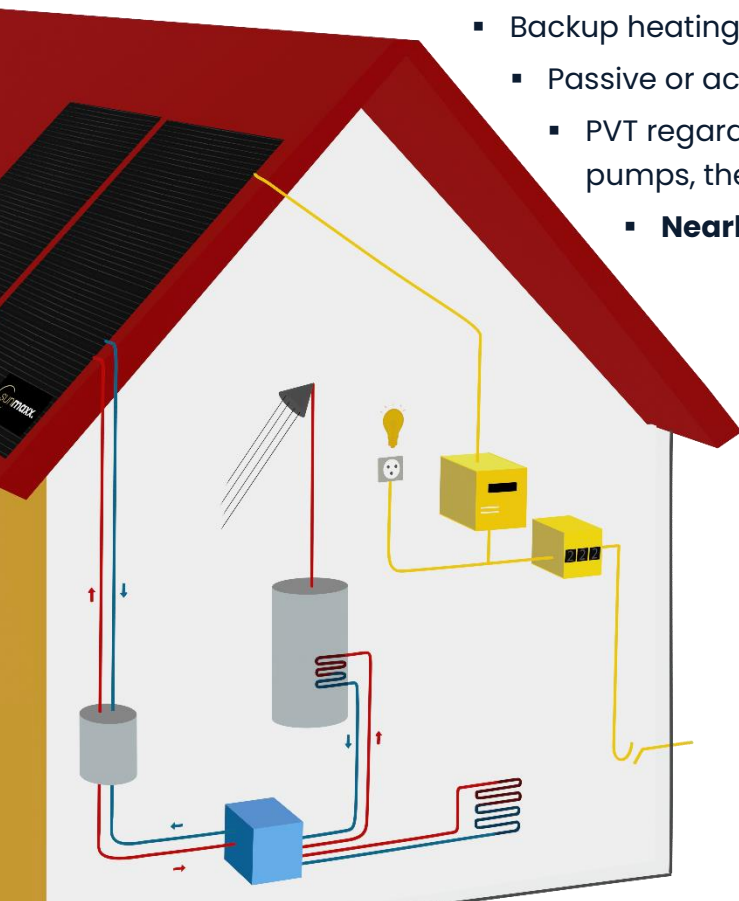
- Utilisation of solar and ambient energy for the provision of electricity and heat through PV cells and thermal management
- Innovative heat exchanger enables more than 80 % overall efficiency
- 5-10 % more electrical yield compared to PV
- Option for snow melting  
→ Electrical yield even in winter

### BRINE HEAT PUMP (HP)

- Increases source temperature (PVT) to required temperature (heating, domestic hot water)
- High efficiency compared to Air-HP and direct heating
- Applicable in old buildings, too
- Innovative inverter technology perfectly matched to PVT

### THE COMPLETE SYSTEM: PVT AND BRINE HEAT PUMP

- PVT heat is a noiseless, highly efficient energy source for heat pumps
- PVT supplies electricity for emission-free heat pump operation as well as household electricity and, for example, for charging electric vehicles
- Optional thermal source buffer tank, low-temperature heat can be stored easily
  - Backup heating (e. g. electric heater) for critical winter days
  - Passive or active cooling in summer
  - PVT regarded as an environmental measure for heat pumps, therefore fully eligible for funding in Germany
    - **Nearly self-sufficient, 100 % climate-neutral system**



### REQUIRED PVT AREA

- 4 m<sup>2</sup> PVT per kW heat pump output (rough estimate, not replacing planning)
- Valid with reservation for heat pumps w/ -15 °C minimum source temperature

Heat output of the HP	Required PVT area	Number of PVT modules
8 kW	32 m <sup>2</sup>	16
10 kW	40 m <sup>2</sup>	20
12 kW	48 m <sup>2</sup>	24
16 kW	64 m <sup>2</sup>	32