

Factsheet Cowa COMPACT Cell 45

The compact buffer storage for utilising PV surpluses.



Cowa COMPACT Cell 45

Wide	600 mm
Deep	340 mm
Height	1400 mm
Weight	260 kg
Storage capacity fully charged ¹	11 kWh
Water-equivalent	350 L
Storage capacity per m ³	75 kWh/m ³
Pressure loss at max. volume flow	15 kPa
Possible water flow rate discharge circuit	20 L/min
Possible water flow rate charging circuit	30 L/min
Minimum operating pressure	1.5 Bar
Maximum operating pressure	8 Bar
Maximum operating temperature	75 °C

[1] Storage capacity calculated from state of charge > 55°C to temperature at outlet < 30°C.

The Cowa COMPACT Cell can be used as a buffer storage both with conventional hot water systems, without hot water preparation, and in combination with a Compact Cell 58 for hot water preparation.

The storage is extremely space-saving and, when fully charged, corresponds to a water-based storage with a nominal volume of around 350 litres. Thanks to the compact, cubic design and the top-mounted connections, the cells can be connected in parallel according to Tichelmann to expand the storage capacity in a modular and space-saving manner.

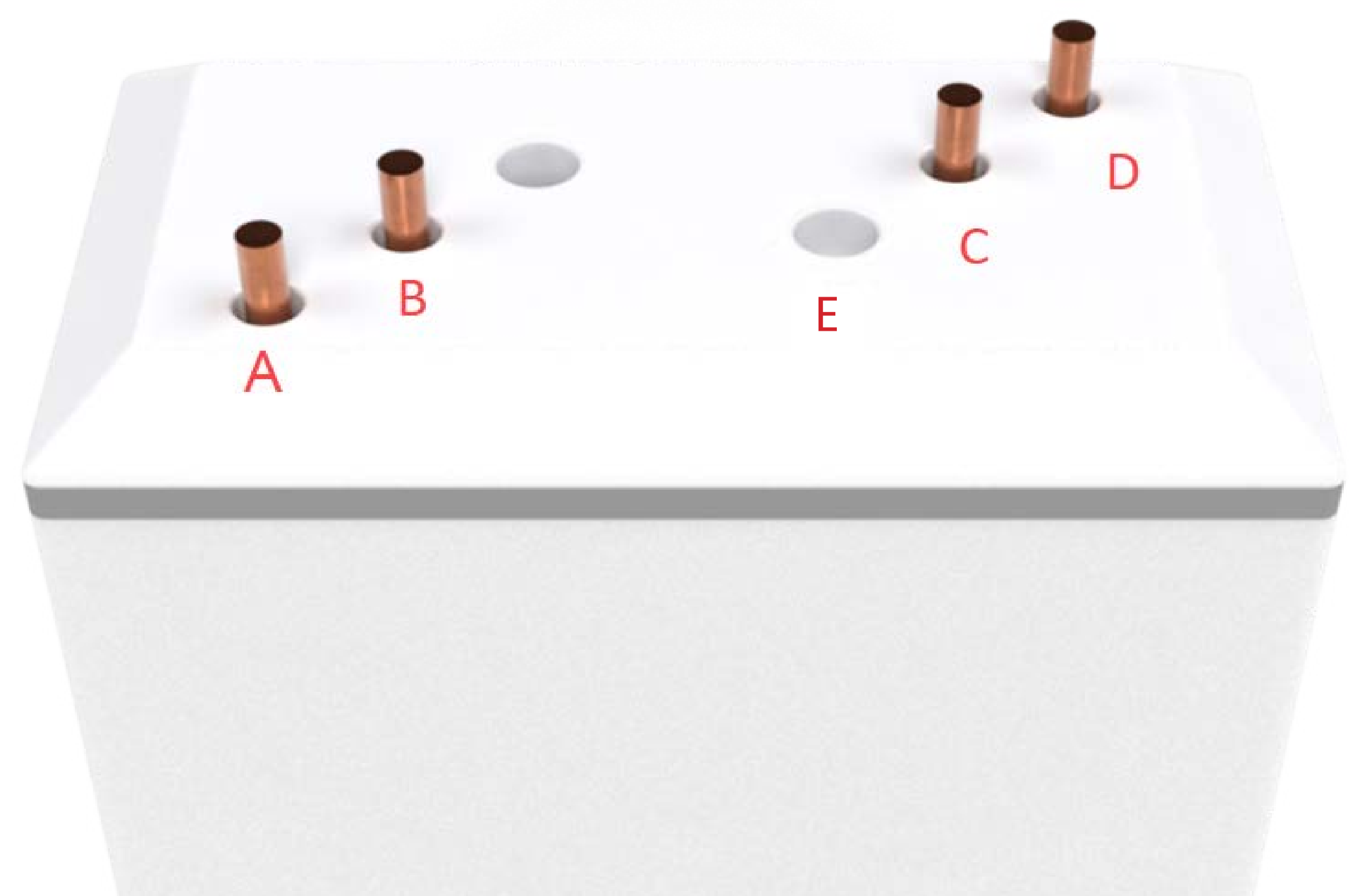
In sliding operation according to the heating curve, the Cowa COMPACT Cell 45 assumes the function of a hydraulic separation between the heat pump and heat output like a conventional parallel buffer storage. In addition, the passive capacity (in the sensitive area) of two cells is sufficient to provide enough energy for a defrosting process.

Connecting the cold and hot water supply lines

The Cowa COMPACT Cell has four connections. A&B are connected in parallel for the flow, C&D for the return connected in parallel.

A thermowell is pre-assembled at position E so that temperature sensors can be used.

A&B: Flow
C&D: Return flow
E: Position for temperature sensor





Hydraulic integration

The Cowa COMPACT Cell 45 can be used as a parallel storage tank, whereby it is integrated analogue to a parallel buffer in accordance with the DHW system module diagrams 1.5 (without DHW heating) and 1.6 (with DHW heating) including mixing group. The overflow valve in the return ensures correct flow through the cell in all operating states.

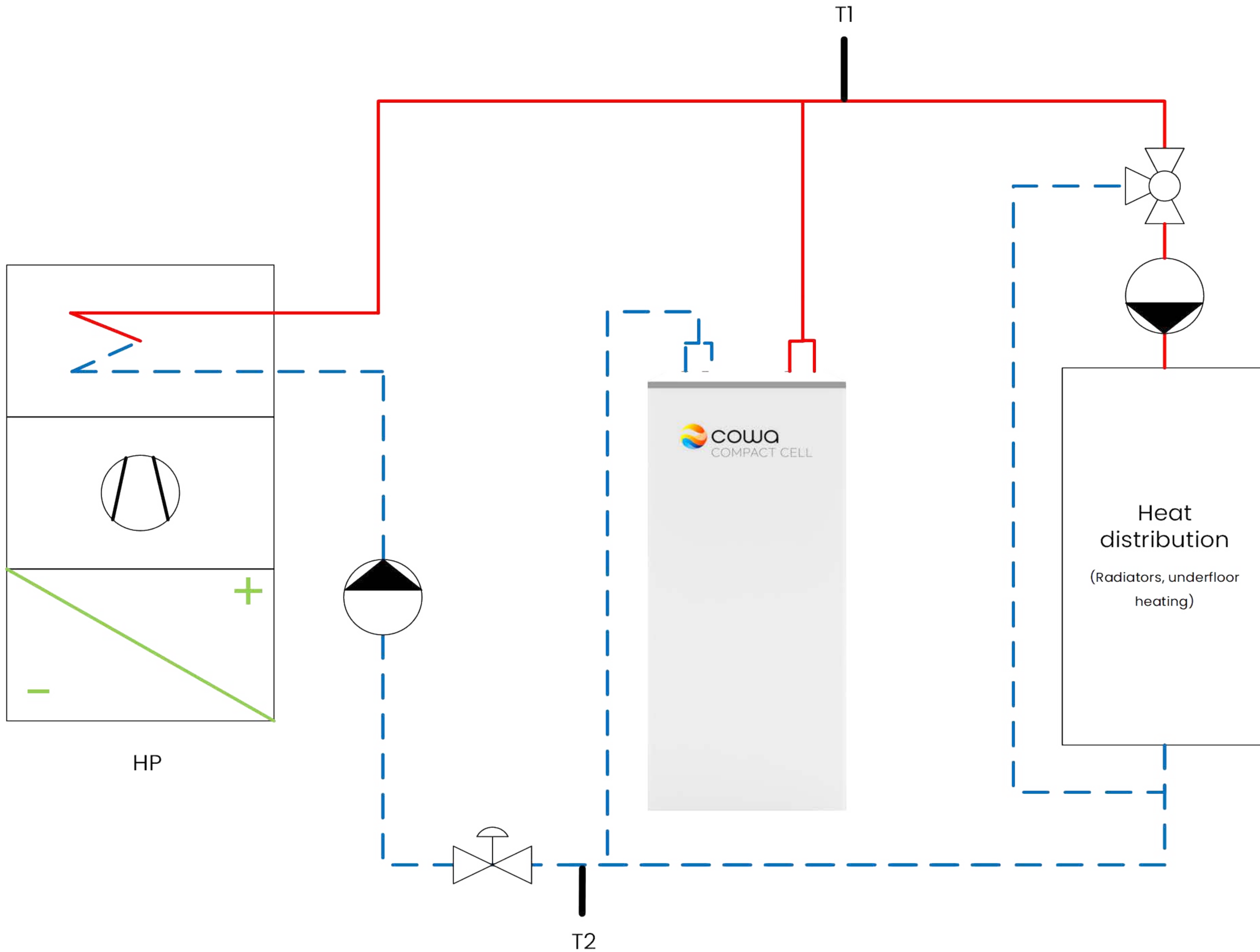


Figure 1: Hydraulic diagram of the Cowa COMPACT Cell 45 as a buffer storage only (WPSM 1.5)

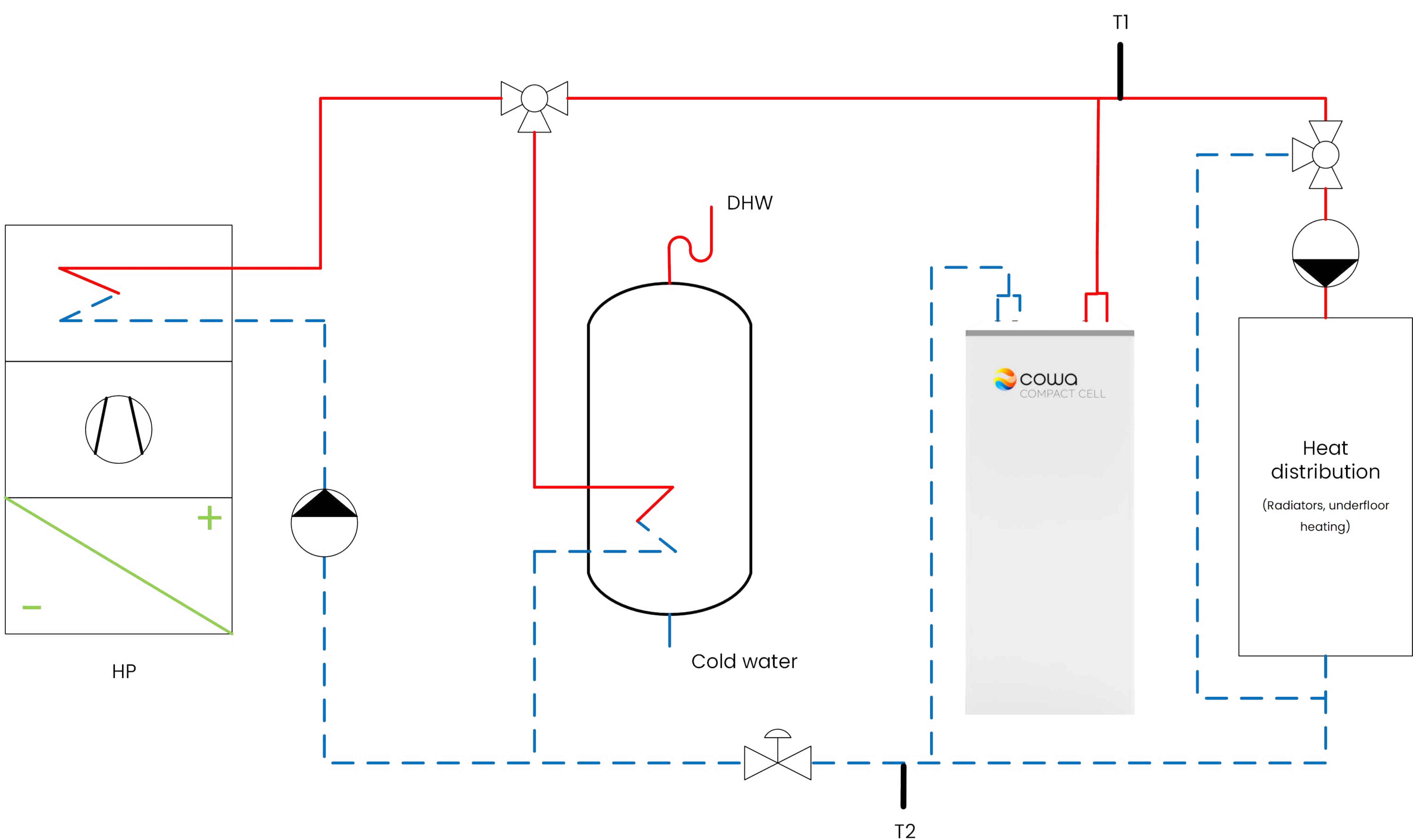


Figure 2: Hydraulic diagram of the Cowa COMPACT Cell 45 as a buffer storage with conventional DHW cylinder (WPSM 1.6)

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The Cowa COMPACT Cell 45 can also be combined as a parallel storage unit with the COMPACT Cell 58 for the provision of domestic hot water in accordance with WPSM 1.6.

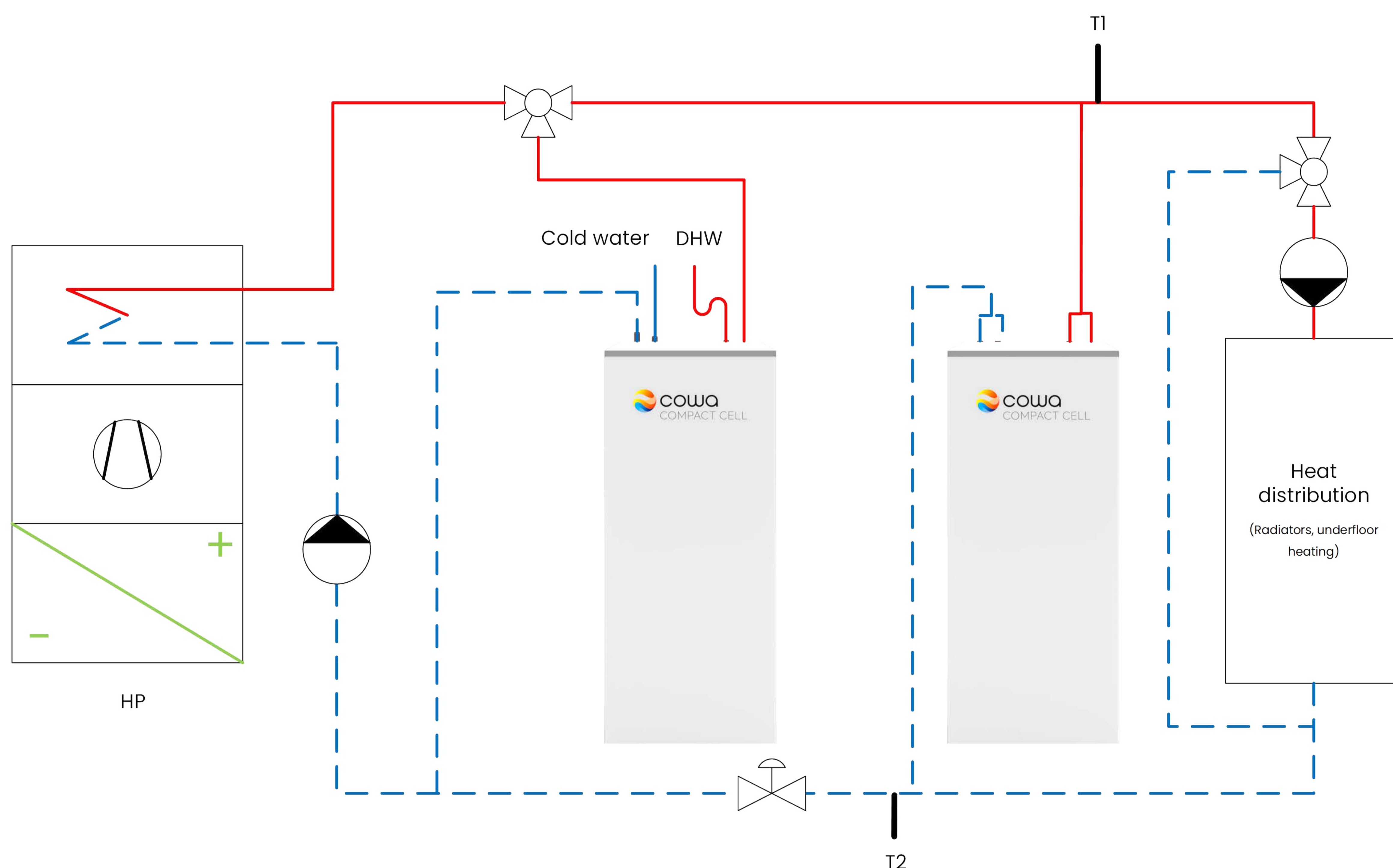
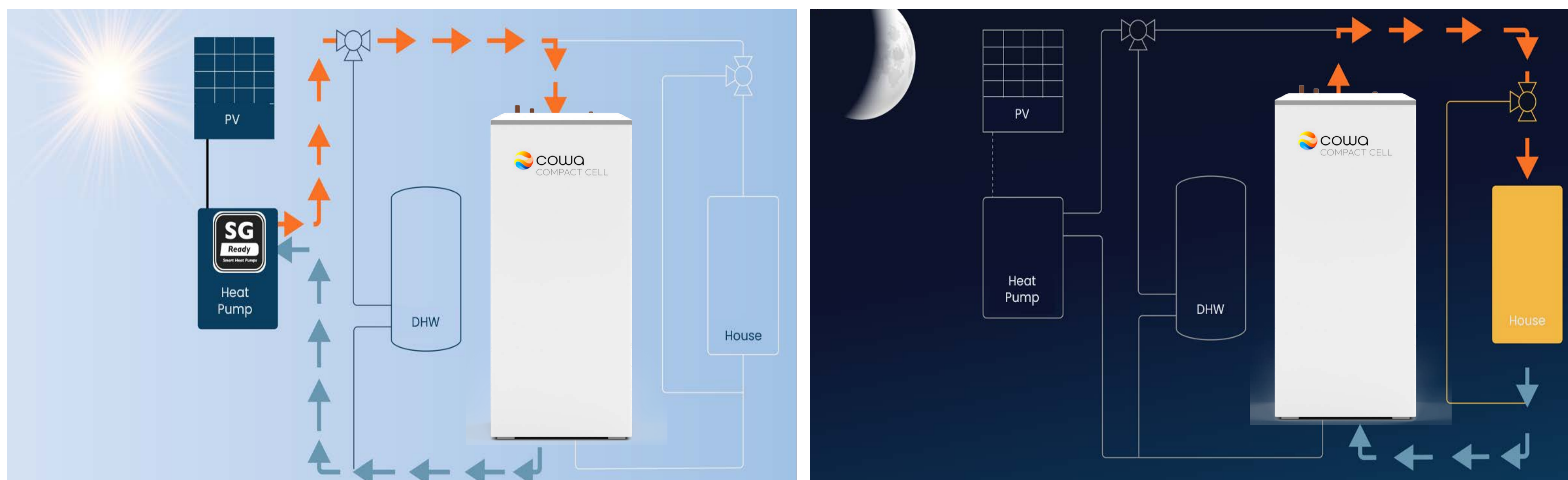


Figure 3: Hydraulic diagram of the Cowa COMPACT Cell 45 with Compact Cell 58 as DHW storage (WPSM 1.6)

If there is a surplus of photovoltaic energy, the setpoint in the buffer cell is increased to 55°C by intensifying the heat pump's operating mode, controlled via suitable interfaces such as SGrady or ModBus. The phase change material (PCM) in the cell melts completely, storing around 11 kWh of thermal energy. Discharging takes place at a later point in time as with conventional systems with an increase in the buffer storage temperature via the mixing group.



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