



Greening the Cottage

Solar, battery and heat pump heating & hot water system

Our System

An integrated, self-sustaining home energy loop that generates, stores, and uses its own renewable electricity for heating and power.

- Our **Air Source Heat Pump** is the aroTHERM plus. This heat pump uses the heat energy in the outside air and converts it into usable heat for the cottage – heating the radiators and keeping the cottage warm. The temperature flowing through the heating system will be between 35-55 degrees Celsius compared to 60-70 degrees Celsius, which would be the case for a traditional fossil fuelled boiler system.
- We have 15 **Photovoltaic** Neostar solar panels in total, on both sides of the cottage roof. This is combined with a Sigenstor **Battery** for storage.

How the Components Work Together

- **Solar Panels (The Generator):** Convert sunlight into free electricity during the day to run household appliances and feed the energy system.
- **Battery Storage (The Reservoir):** Captures excess electricity produced by the solar panels during peak daylight hours instead of sending it back to the grid, holding it for use at night or on cloudy days.
- **Air Source Heat Pump (The Consumer/Heater):** Draws ambient heat from the outside air to warm your home and hot water. Because it runs on electricity rather than gas or oil, it is powered directly by your solar panels and battery.

Key Benefits to Highlight

- **Maximum Efficiency:** Air source heat pumps return 3 to 4 units of heat for every 1 unit of electricity they use. Pairing this high efficiency with self-generated solar power creates a clean, closed-loop energy cycle.
- **Energy Independence:** Smart controls or hybrid inverters coordinate the system so stored battery power or direct solar energy runs the heat pump, dramatically lowering your reliance on the national grid.