

Heat Pump Awards 2026

Application submission

A tenement house in the centre of Warsaw

Panasonic | Building Solutions Award

1. Application overview

Award category	Building Solutions
Title of the project	A tenement house in the centre of Warsaw
Organisation Name	Panasonic
Exact address of the project	Warszawa, ul. Traugutta 3
Funding	Private, Public
Organisations involved in the project	Zerowat.pl Andrzej Wysocki
Project ending date	01/04/2026
Project website	No answer provided.
Sector of application	Residential

2. Applicant & EHPA contact details

Full name	Weronika Woch
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Phone number	48538816199
EHPA member involved	None
Role of EHPA member	None

3. Project description and benefits

Project description (goal, problem addressed, and solution provided by the heat pump)

The investment was driven by rapidly rising domestic hot water (DHW) heating costs associated with a district heating substation. Heat pumps offer higher efficiency and lower DHW heating costs, especially when combined with photovoltaic panels and battery storage. The goal was to significantly reduce DHW heating costs while retaining the district heating substation as a backup source. Electricity from the PV installation further reduces operating costs.

Expected or achieved benefits

The project has reduced DHW heating costs and operating expenses without compromising user comfort. The combination of two heat pumps, a 10 kWp PV installation and 15 kWh battery storage also reduces the system's environmental impact and electricity costs. The existing district heating substation remains available as a reliable backup source, providing additional operational security.

Obstacles/barriers encountered during development

The main challenge was connecting roof-mounted heat pumps to DHW tanks located in the basement more than 20 meters below. Piping was installed in a shaft together with electrical wiring.

Why should this project win an award?

This project demonstrates an innovative and practical way to reduce DHW costs without replacing the existing district heating infrastructure. Two Panasonic heat pumps, supported by 10 kWp of PV and 15 kWh of battery storage, provide efficient DHW heating while the existing heat substation remains as a simple and reliable backup. The solution combines lower operating costs, renewable energy and operational security in a scalable model for other buildings.

4. Technical specifications

Capacity of unit(s)	2 × Panasonic Aquarea M Series TCAP, 16 kW
Energy sources used	Energy source: air.
Coefficient of Performance (COP)	COP A7/W35: 4,7
Service provided	Domestic hot water
Refrigerant type	R290

Heat pump details (compressor technology, heat exchanger, system configuration)

The system consists of two Panasonic Aquarea T-CAP M Series 16 kW monobloc heat pumps using R290 refrigerant. The units operate in parallel, providing a combined nominal capacity of 32 kW. The heat pumps use inverter-driven compressor technology and an air-to-water heat exchanger system. The units are configured as a single-stage cascade rather than a two-stage system. The available project documentation does not specify the heat-exchanger material, so this detail has not been included.

5. Renewable energy integration and grid response

Integration of renewable energy sources

A 10 kWp photovoltaic installation supplies renewable electricity to the heat pumps, while a 15 kWh battery storage system stores surplus PV energy for later use. This increases the use of self-generated electricity, reducing grid electricity consumption and operating costs. During summer, the heat pumps are powered predominantly by electricity generated by the PV system.

Response to energy demand / smart grid integration

The system maintains constant DHW tank temperatures from spring through autumn. During winter, operation is optimized through a heating curve to maximize heat pump efficiency and minimize costs.

6. Innovation, monitoring and replicability

General (all awards)

Why the project is innovative *(all awards)*

The project is unique because of the way the heat pumps were integrated with the existing district heating substation. A simple, reliable hydraulic arrangement allows seamless backup operation.

Monitoring approach (performance, cost, and carbon targets) *(all awards)*

The system is monitored through operating parameters and energy consumption data from the heat pumps, PV installation and battery storage. The data is used to optimise system operation, maximise the use of self-generated PV electricity and track energy costs. As the installation is relatively new, long-term performance and carbon reduction data are not yet available.

For Large Heat Pump or Building Solutions Award

Why the project serves as a model for others *(Large Heat Pump or Building Solutions Award)*

It can be implemented in any building supplied by a district heating substation and integrated into a modernized DHW or central heating system.

Potential for expansion to other locations/industries *(Large Heat Pump or Building Solutions Award)*

The solution can be replicated in other buildings supplied by district heating substations, particularly multi-family residential buildings. The combination of heat pumps, PV, battery storage and the existing district heating system as backup can be adapted to different building sizes and heating/DHW demands.

Barriers to replication elsewhere *(Large Heat Pump or Building Solutions Award)*

No answer provided.

Business opportunities for expansion, licensing, or commercial production *(Large Heat Pump or Building Solutions Award)*

No answer provided.

For Innovation Award

Technology/technique developed solely for this project *(Innovation Award only)*

No answer provided.

Differentiation from state-of-the-art solutions & market maturity *(Innovation Award only)*

No answer provided.

Regional benefits (energy savings, emissions, jobs, infrastructure) *(Innovation Award only)*

No answer provided.

Commercial potential *(Innovation Award only)*

No answer provided.