

Heat Pump Awards 2026

Application submission

Modernisation of the central heating system at the District Office

Pansasonic | Building Solutions Award

1. Application overview

Award category	Building Solutions
Title of the project	Modernisation of the central heating system at the District Office
Organisation Name	Pansasonic
Exact address of the project	ul. Armii Krajowej 9, 28-300 Jędrzejów
Funding	EU funds
Organisations involved in the project	Instal House Centrum Grzewcze Sp. z o.o. Rodbud Zakład Usług Remontowo-Budowlanych Robert Dykiel
Project ending date	22/12/2025
Project website	No answer provided.
Sector of application	Commercial

2. Applicant & EHPA contact details

Full name	Marek Skrzypek
Email address	Marek.Skrzypek@eu.panasonic.com
Phone number	48886929240
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 project required providing at least 133 kW of heating capacity and replacing the heat distribution system, including radiators. The previous system relied on district heating. Significant savings were achieved after the first heating season.

Expected or achieved benefits

The project delivers significant economic, environmental and operational benefits. Operating costs have been reduced by more than 50%, while CO₂ emissions have fallen by over 40%. The cascade system provides reliable, uninterrupted heating, while the 100 kWp PV installation helps reduce electricity costs. The solution also improves energy independence and provides comfortable, stable heating throughout the office building.

Obstacles/barriers encountered during development

Challenges included adapting the radiator installation, replacing risers, converting existing spaces into a heat-pump plant room, providing electrical supply from another part of the building, and increasing the building's connection capacity.

Why should this project win an award?

This project proves that even a large public office building can move away from district heating and achieve over 50% lower operating costs and more than 40% lower CO₂ emissions. The use of eight Panasonic T-CAP heat pumps in cascade, supported by 100 kWp of PV, delivers reliable 24/7 heating while providing a scalable model for other public buildings.

4. Technical specifications

Capacity of unit(s)	8 × 16 kW units: WH-WXG16ME8 + WH-CME8 (x1) / CZ-RTW2 (x7).
Energy sources used	Energy source: electrically powered heat pumps, partially supported by PV. A 100 kWp rooftop photovoltaic installation with four inverters (1 × 50 kW and 3 × 15 kW) supports the system.
Coefficient of Performance (COP)	COP: 3.0
Service provided	Application: Heating.
Refrigerant type	R290

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

The system consists of eight Panasonic Aquarea T-CAP M Series air-to-water heat pumps, each rated at 16 kW (WH-WXG16ME8 + WH-CME8/CZ-RTW2), using R290 refrigerant and Panasonic compressors. The units are configured in a parallel cascade, providing a total nominal heating capacity of 128 kW. The system uses three 800-litre buffer tanks and a hydraulic separator. The heat pumps operate as a single-stage air-to-water system rather than a two-stage configuration. Panasonic documentation confirms the use of a Panasonic compressor and R290 refrigerant; detailed public documentation does not specify the heat-exchanger material, so this has not been stated.

5. Renewable energy integration and grid response

Integration of renewable energy sources

A 100 kWp rooftop photovoltaic system supports the heat pump installation by supplying renewable electricity to the eight Panasonic T-CAP units. This reduces the amount of electricity purchased from the grid, lowering operating costs and the system's overall carbon footprint. The integration of PV with the heat pump cascade improves energy efficiency and increases the building's energy independence.

Response to energy demand / smart grid integration

The system maintains comfortable temperatures throughout office areas, assisted by thermostatic radiator valves. The system responds to changing heating demand through a

weather-compensated heating curve, maintaining the required supply temperature. The three buffer tanks store excess thermal energy and support defrost cycles, while the cascade controller dynamically balances operation across all eight heat pumps. This allows the system to match heat production to demand efficiently while maintaining reliable operation.

6. Innovation, monitoring and replicability

General (all awards)

Why the project is innovative *(all awards)*

The combination of heat pumps, photovoltaic generation, energy storage used in a parallel project, and reactive-power compensation significantly reduces operating expenses while maintaining comfort across the entire office building.

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

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.

For Large Heat Pump or Building Solutions Award

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

Suitable for county offices, municipal offices and other public buildings after proper energy-demand analysis.

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

The concept can be replicated in many similar government and public buildings and expanded to cover domestic hot water production or operate alongside existing heat source

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

The main barriers are high upfront investment, adapting existing heating infrastructure, electrical capacity requirements and space for the heat pump plant room. These can be overcome through careful technical design, energy-demand analysis, available funding programmes and phased modernisation.

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

No answer provided.