connectpoint VEOLIA

ConnectPoint for Veolia Energia Warszawa

Monitoring of the Warsaw District Heating Network

Realised within the project „Intelligent Heat Distribution Network"

Veolia Group has been present in Poland for over 20 years. Warsaw District Heating System is the biggest district heating system managed by Veolia and at the same time the second biggest centralised system in Europe.

Veolia Warsaw is among others:

More than 5,000 heating chambers

in which metering equipment and shut-off & control equipment are installed, with which the company controls the system

3 pumping stations:

Gołędzinów, Marymont and Batory

5 heat sources

under the management of PGNiG and MPO

190 km2 area

supplied with heat

Over 16,800 district heating substations

responsible for supplying heat to over 18,600 buildings in Warsaw

Over 1,700 kilometres of district heating network

(3,400 kilometres of piping)

900 highly specialised employees

overseeing the infrastructure

Needs of Veolia Energia Warszawa

The main objective of Veolia was to centralize and increase efficiency of management of Warsaw District Heating System, including increasing efficiency and quality of services.

The means to achieve this goal was to implement a solution for collecting, analysing and displaying data from all existing systems. It is the centralised, real-time information on each network element that allows efficient management of the entire district heating system.

Industry challenges

The Polish district heating sector is facing the necessity of transformation resulting from stricter environmental requirements and increasing costs of purchasing CO_2 emission allowances. On the other hand, customers constantly expect a high quality of heating supply without shoutdowns and failures. Optimising the operation of district heating networks is becoming a priority for the entire sector, for both economic and environmental reasons.

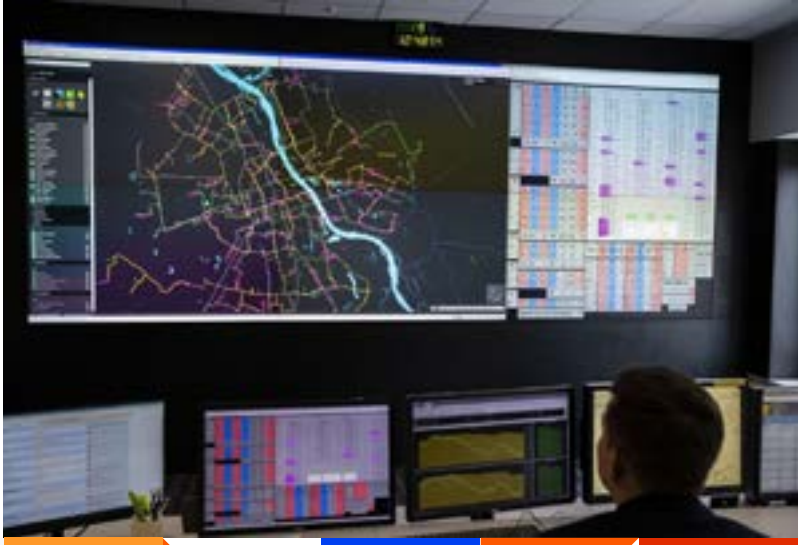
Solution provided by ConnectPoint

ConnectPoint has delivered and implemented the following solutions, which it maintains and continues to develop:

01. **Central Measurement Data Repository (CMDR),** based on OSIsoft PI, which collects all measurement data from elements of the Warsaw Heat Distribution Network in real time.

02. **The Main System DOD (Dispatcher Operation Dashboard)** - it presents real-time data from the Central Repository of Measurement Data (CMDR) and business systems. The information provided allows for optimal control of the district heating network and efficient response to all events.

03. **Smart RDM** - A system for managing and distributing reports in an organisation. Relevant persons in the company instantly receive the latest versions of specific reports thanks to a subscription system.



Key features of the DOD system

- **Map views on more than 40 layers** covering the infrastructure of the District Heating Network with visualisation of various types of data, including pressure distribution, supply and return temperatures;
- **Strategic diagram of the district heating network** showing the live condition of individual network elements, such as fittings or main network chambers;
- **Digital dispatcher's work log** integrated into the telephone exchange;
- **An alarm management module** that allows for intuitive, map-based creation and management of alarm rules;
- **Integration with billing systems,** asset management, a field crew management application and Decision Support System;
- **An integrated system for the management and handling of outages and planned shutdowns** that makes it possible to manage current network failures and to plan the shutdown of individual parts of the network.

Benefits of implementation for Veolia Energia Warszawa

Thanks to the system implemented, Veolia has gained an intelligent district heating network, enabling flexible and efficient management, in particular:

- A single decision centre and quick access to real-time information from all systems for everyone in the company;
- Digitalization of processes - automatic collection of data, calculation of indicators (such as the number of customers cut off by an outage) and sending them to the relevant systems;
- Faster and more effective management of breakdowns thanks to the ability to remotely control some of them, thus better redistributing staff to field tasks;
- Improved customer service resulting in fewer complaints due to flexible response to current heat demand and faster reaction to breakdowns;
- Accelerated speed of information distribution in the organisation thanks to the Smart RDM application;
- **Providing heat in a more environmentally and economically sustainable way, i.e:**
  - a reduction in carbon dioxide emissions of at least 14,500 tonnes per year,
  - reduction of heat loss in the transmission system and reduction of power consumption by the pumping stations.

About ConnectPoint

ConnectPoint is an IT company that supports the process of digitalization in industry, energy sector and public utility segment. It specializes in IT/OT and IoT integration and combine industry knowledge with expertise in the field of OT, Big Data, GIS, Business Intelligence and Machine Learning. It builds systems that allow for effective cooperation between Operations, IT and Business.