

Customer: Energence
Country: United Kingdom
Solution: Ewon Netbiter



Benefits

- Remote control of air-to-air heat pump operation
- Data collection from multiple different types of meters and sensors
- Collected performance data accessed through Argos API by 3rd party



"There's no certified heat meters for monitoring the amount of heat going out through air. HMS Networks helped in making it possible"

Steve Harris, Technical and Policy Director, Energence Ltd..

Netbiter Argos enables Net Zero compliance in London's residential legislation

In the UK, the 2008 Planning and Energy Act enabled local authorities to require developers of new commercial and residential projects, to generate at least 10% of their energy needs from on-site renewable energy sources. However, authorities soon realized that monitoring compliance with this legislation, known as the «Merton Rule», was difficult.

In 2013, Ealing Borough Council, near London, added a legal condition, since called 'The Ealing Condition', that also required automatic remote monitoring of renewable energy production. This is where Energence, Future Focus Energy and HMS Networks come in.

Remote monitoring of heat pumps

Heat pumps have rapidly established themselves as the most efficient and environmentally friendly way of heating premises.

Steve Harris, Head of Technical and Policy at Energence, explains the data collection challenge involved: «It's very easy to meter a photovoltaic array, but it's a bit more complicated to meter a heat pump, and really complicated—in this case—to meter an air-to-air heat pump. That's why they have been excluded from many heat pump field trials. Although there is still no way to meter the output of air-to-air heat pumps to a certifiable quality, we needed a working monitoring solution that would enable developers to start making use of this developing and promising technology and satisfy the Ealing Condition, so we turned to HMS Networks & Future Focus Energy Ltd for help in making this possible.»



Since 2013, a law in the UK requires new buildings to self-generate at least 10% of the energy they consume. Netbiter Argos plays a crucial role in monitoring compliance with this legislation.

Netbiter gateways collect raw data from heat pumps to assess their performance

« HMS Networks & Future Focus Energy helped us develop a monitoring system to enable greater use of air-to-air heat pumps, something developers are very keen to do. Individual air to water pumps tend to be too powerful for modern apartments but smaller, individual air-to-air (tank top) heat pumps can be more appropriate. It can also be more cost-effective to install air to air systems than communal heating loops, and they are much easier to manage», says Steve Harris.

«The key criteria was that the Netbiter gateway could be pre-configured and programmed before it went to site, easily installed by a competent electrician, explains Paul Friday, Managing Director at Future Focus Energy Limited. Upon power up, the data will start pushing to the cloud. We had to have a facility for a SIM-card without relying on any third-party network services.»

Use of Netbiter's edge computing to generate value from data

Connecting the energy meters and sensors posed no technical problems. Davor Tonic, Business Development Manager at HMS Networks, explains: «The difficulty lies mainly in



Thanks to the flexibility of Netbiter Argos, HMS Networks was able to develop a customized solution for precise monitoring. This was achieved in collaboration with Energence, as well other partners such as Future Focus Energy Ltd. and Nilan England & Wales.

understanding how to perform the Coefficient of Performance (COP) value based on the data collected that Steve required. Now, we're only using a small fraction of the data available. If more data proves necessary in the future, we'll be able to use it.

Also involved in this project was Nilan England & Wales, the heat pump distributor who also gained additional information of their heat pump performance.

More about Energence

Energence was born in 2009 with the aim of helping to implement the Merton Rule. Its collaboration with Ealing Council began in 2013. This organization stands out for its expertise in the field of renewable energies.

The Energence Platform developed by this organization is an application of the «City Knowledge» concept of Urban Data Management developed by Prof. Fabio Carrera of Worcester Polytechnic Institute (Mass) and Massachusetts Institute of Technology.

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Learn more on www.netbiter.com

The Ewon Netbiter gateway and Argos cloud are the ideal remote monitoring solution for equipment installed in isolated locations. Thanks to industrial connectivity, it is no longer always necessary to send technicians on site to solve any problems that may arise, which drastically reduces support costs.

