

Case Study - Waste to Energy

Lerwick District Heating Scheme, Shetland Islands

The Brief:

The implementation of an effective and dynamic waste to distribution system.

Britain's most northerly town, Lerwick is at the forefront of environmentally responsible energy provision. It enjoys its own advanced Waste to Energy plant (WTE) which provides heat and electricity to many of the area's 8,000 inhabitants. Crucial to this venture's success however was the design, specification and implementation of an effective and dynamic distribution system – and it was here that Vital Energi was able to help.

As further evidence of the project's innovative approach, it won the coveted Environment Award for Engineers 2000. This £6.5 million project has since become a benchmark against which many future CHP and District Energy schemes will be measured.

Our Response:

The large scale application of our full service capabilities and extensive experience.

Connecting the WTE plant to the end-user was no simple task. However thanks to our full service capabilities and our extensive experience, Vital Energi was able to realise this demanding brief – from design of the proposed solution, through to its eventual delivery.

We began by designing in detail a Peak Load Boiler Station, which included its own pump station and a 2 MW and a 6.5MW boilers. We then went on to oversee the construction, testing and bringing on-line of this advanced and highly functional facility. We also put in place the connection between this and the incinerator, and established the necessary cooling systems.

Over the years Vital Energi has supplied nearly 30km of pre-insulated pipework. This network of pipes allows the transfer of hot water from the boiler station to a large number of local properties – including over 800 homes and 100 community centres, schools, churches and commercial buildings. Following on from this, we sourced and installed state-of-the-art, ultrasonic heat meters, which would measure consumption amongst both Domestic and Commercial users. We also put in place an automatic data collection system for collating readings from each user.

Key Achievements:

Ultimately, the Lerwick District Heating scheme has proven to be a phenomenal success, with demand far exceeding supply. Since the original scheme was installed, Vital Energi's expertise has secured further contracts on the island and we are continuing to add new connections to the scheme for both residential and commercial customers.

The Benefits:

- CO2 reductions of 7800 tonnes pa
- Financial savings of £1.5 million pa
- A sustainable and long term solution for the town
- Thermal hot water storage reduces reliance on fossil fuels
- Affordable heating and hote water instantly and on demand



Client:

Shetland Heat Energy and Power

Timescale:

April 1998 to date
Ongoing programme connecting new buildings

Contract Value:

£6.5 million

Finance provided by:

Shetland Islands Charitable Trust

