

# Lerwick District Heating Scheme

## What is District Heating?

District Heating uses a large centralised boiler (or other heat sources) and distributes the heat via insulated underground pipes to distant buildings.

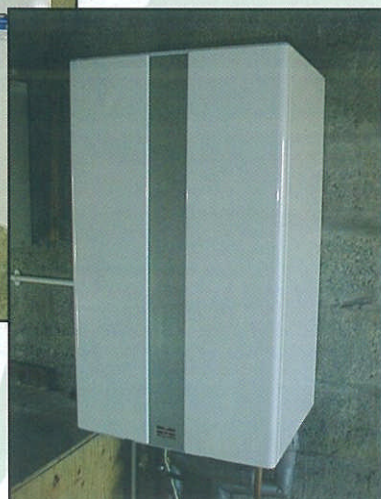
When the pipes enter a building a heat exchanger takes heat out from the district heating system and transfers it to the buildings internal wet water heating system. No water is transferred to the buildings system. Incoming mains water is instantaneously heated thus avoiding a hot water storage tank. The system offers all the advantages of an oil heated system with a heat exchanger taking the place of a boiler.

District Heating has been around for decades but has developed rapidly in Europe (in particular Scandinavia) since the oil crisis of 1973. In Denmark and Finland over 60% of homes are heated by district heating systems. District heating is sometimes called Community Heating by the UK Government. In the UK systems have tended to be restricted to large local government housing schemes. There are large successful schemes in the centre of Nottingham and Southampton heating domestic, public and commercial properties. The largest scheme is in Sheffield where the Crucible Theatre is one of its customers. There are numerous smaller schemes including one that heats 10 Downing Street. Many Ministry of Defence properties use heat from generators to heat other properties, Saxa Ford in Unst had such a scheme for many years.

In Denmark the majority of the heat comes from waste heat generated during the production of electricity. 60% or more of a power station output is often waste heat. In the UK normal practice is to dump this valuable resource to the environment. Utilising this heat can increase the power station efficiency up to 90% reducing carbon emissions and fuel consumption. Some of the heat networks are over 100km long. In our scheme the main heat source is the Energy Recovery Plant fuelled from municipal waste.



Heat Exchanger with cover open

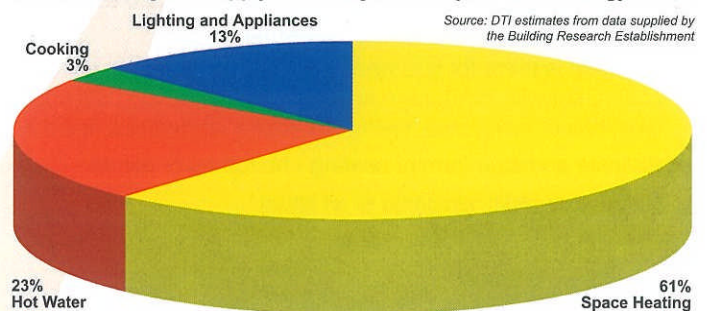


Heat Exchanger with cover closed

## How much will I save?

At a time when energy prices in the world are rising fast this is difficult to generalise. We are aiming to be cheapest available. But we are not completely immune from the price of oil as we depend on oil for back up facilities. Also we use electricity for pumping and electricity costs are effected by the cost of oil. As a result our costs will also be effected.

### District Heating can supply on average 84% of your home energy needs



### Electric Storage Heaters

Savings of 30% to 40% are common. The biggest benefit comes from the controllability - no more guessing what tomorrow's weather might be. If you have a good mains pressure no storage tank will be required.

### Standard Tariff Electricity

Savings of over 70% can be achieved on the heating costs.

### Oil Heating

Savings will depend on how efficient your boiler is, the current price of oil, maintenance costs etc. The best time to consider conversion to district heating is when your boiler is nearing replacement age. In the long term district heating offers you all the advantages of oil heating without the worry of steep rises in the price of oil on the market place. You can also forget about replacing the oil tank.

### Solid Fuel

These vary considerably in performance but there will be significant savings. The biggest advantage is removing the need to carry in buckets of fuel and cleaning out.

### Commercial and Industrial Consumers

The smaller users will enjoy the same pricing as domestic customers. The larger consumers will be able to negotiate long term deals depending on their demand, existing plant, and temperature operating regime.

### What happens if the Incinerator is out of action during maintenance or breakdown?

An oil fuelled boiler station has been constructed just north of the Hydro Electric Power Station at Gremista. The station becomes operational when the incinerator is down for maintenance or unable to supply enough heat to meet the demand. Other alternative heat sources such as waste heat from the Power Station are being considered for the long term future. We are planning to take over the former boiler plants at the Anderson High School and Montfield Hospital as backup further into the town and extend their life by decades.

## What are the advantages of District Heating?

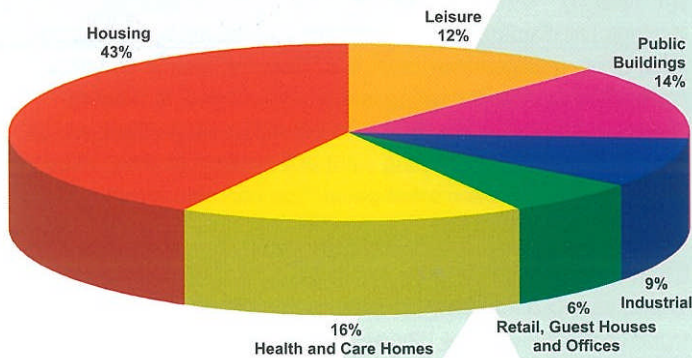
### For customers

- ✓ Lower heating costs - we are always aiming to be the cheapest.
- ✓ Reduced maintenance costs against a boiler system.
- ✓ Space saving (for larger users a heat exchanger will only take 10% to 20% of the space of a boiler). For domestic users the unit is normally wall mounted.
- ✓ Lower initial capital expenditure especially for larger users compared with oil or solid fuel.
- ✓ You only pay for what you use - inefficiencies in generating the heat are not your problem.
- ✓ It offers all the advantages of oil systems without the need for a fuel tank or flue.
- ✓ Competitive and sustainable it will not be susceptible to wildly fluctuating oil prices as recently experienced when there are political or financial problems.
- ✓ The heat is there for you when you need it - no more being caught out with no storage heating when a sudden cold snap develops or vica versa having the heater on during a fine day.
- ✓ Reliable and safe form of heating - no fumes or flames.
- ✓ Hot water readily available at all times (storage tank optional).

### For the Environment

- ✓ Conserves fossil fuels.
- ✓ Uses a readily available sustainable fuel source (waste products) that if put to landfill is costly and will still biodegrade to green house gases.
- ✓ Overall less pollution from more efficient continually monitored plant.
- ✓ Provides the opportunity of further renewable or waste energy sources to be used.

Where the Heat Goes To (as at 2005)



### For Shetland

- ✓ A sustainable benefit to the local economy.
- ✓ Provides local jobs.
- ✓ Reduces costs to local businesses, public building etc.
- ✓ Enhances its environmental image.

### For Britain

- ✓ Reduced dependency on oil.
- ✓ Reduction in carbon emissions.

## What are the disadvantages of District Heating?

### For customers

- ✗ The capital cost of conversion. If you already have a wet system then all you need is to change your boiler for a heat exchanger. If you have an electric system you will need to install a wet system. The cost is the same as installing an oil heated system less the cost of a flue and with fuel tank (possibly with bund).

### For the Environment

- ✗ The upheaval of laying the pipes. The routes are chosen to avoid the busiest roads as much as possible. The length of time taken for a house connection is about two weeks.



▲ Prepayment Meter (optional)

Typical House Entry ▶



## How do I apply and what happens?

- STEP 1** Contact us by phone or in writing requesting an application form. We can advise you then when a connection may be possible.
- STEP 2** On receipt of the application form we will arrange for a visit to determine suitability and where to install the pipes etc. We will advise on any grants available and when to apply.
- STEP 3** If found suitable we will send you an agreement. There is no commitment until the agreement is returned signed. Once signed we can programme the works.
- STEP 4** You will need to contact an approved plumber for installation of the heat exchanger and if necessary other fittings such as radiators.
- STEP 5** We lay in pipes as soon as practical. Our responsibility stops at the valves.
- STEP 6** Your plumber will undertake the internal works including installing our meter. The plumber will inform us when it is operational.

## HOW DO I APPLY?

Phone or write to request an application form

**Shetland Heat Energy and Power Limited**

Marina Business Park • Gremista • Lerwick • Shetland ZE1 0TA

Telephone 01595 697111 • Fax 01595 695072



Shetland Heat Energy  
and Power Limited



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