

Hill of Banchory ESCo Limited

Providing Energy for the Future



Hill of Banchory ESCo Limited (HoB ESCo) is an Energy Services Company (ESCo) working to provide an environmentally friendly, sustainable heat supply for houses in the Bancon Homes Hill of Banchory Development.

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Hill of Banchory, Picture courtesy of Bancon Homes

Contributing to a low carbon economy

The present use of carbon-based non-renewable energy is unsustainable because of the resultant CO₂ emissions, which the UK government plans to reduce by 60% from current levels by 2050 (note¹). Building Regulations will require new houses to be 'zero carbon' by 2016. A zero carbon home produces zero net emissions of CO₂ from all energy use in the home.

Our plant will generate heat and electricity using wood as fuel sourced locally from forests and sawmills. Wood is a renewable fuel and is 'carbon lean' – although CO₂ is released into the atmosphere when burnt, an equivalent amount has been taken from the atmosphere during growth. Space heating and hot water accounts for 83% of domestic energy use (note²). Accordingly, using wood to generate your heat will go a long way to achieving carbon zero homes. Electricity produced will be supplied onto the National Grid.

Note¹ DTI White Paper: *Meeting the Energy Challenge*, 23rd May 2007,

<http://www.dti.gov.uk/energy/whitepaper/page39534.html>

Note² DTI (2002). *Energy Consumption in the United Kingdom*. <http://www.berr-ec.com/cgibin/perlcon.pl>

Securing your heat energy supply

With an ever-increasing proportion of UK energy being met from abroad and political instability in many of the energy producing countries, it is vitally important to source domestic supplies of energy for our own security.

Our plant will use around 8,000 tonnes of wood per annum sourced from local forests and sawmills. With a long tradition in forestry, Royal Deeside has a potential sustainable supply of 200,000 tonnes per annum (note³). We will develop long-term partnerships with local producers to ensure an uninterrupted supply of heat to your home.

In the event of woodfuel supply failures the plant will switch to a standby gas-fuelled boiler which will continue to generate heat to meet your energy needs. As in other Bancon Homes, an electrical immersion hot water cylinder will be installed to provide backup should the supply of hot water to your home be interrupted.

Note³ Scottish Sustainable Development Commission (2005). *Wood Fuel for Warmth*. <http://www.sd-commission.org.uk/publications.php?id=248>

Supplying your home with space heating and hot water

It is planned that HoB ESCo will supply hot water to your home, providing heat energy for space heating and domestic hot water via a District Heating Scheme, comprising a biomass Combined Heat and Power (CHP) plant, pipe network and heat exchangers.

Initially heat will be generated by a centrally located temporary gas boiler and distributed as hot water to your home. It is envisaged that your heat energy will be generated by the biomass CHP plant by early 2010.

Vital Energi will install the pipe network. Vital Energi are the UK market leaders of district energy provision and Scottish and Southern Energy, one of the largest energy companies in the UK, has a 30% stakeholding in their business. Vital Energi has 25 years' experience with district heating, and has been involved in 49 schemes, working with public sector clients such as NHS Trusts and Local Education Authorities, as well as community housing schemes in Scotland such as West Highland Housing Association in Oban and Fyne Homes in Lochgilphead.



Hill of Banchory, Picture courtesy of Bancon Homes

How will space heating and hot water be provided to your home?

Hot water will be produced initially by a temporary gas boiler and distributed to your home via a network of underground insulated pipes. On completion the CHP plant will fulfil this role.

When the pipes enter your home a heat exchanger will transfer heat from the district heating system to your domestic hot water and heating system. No water will be transferred to the building's system. Incoming mains water will be instantaneously heated thus avoiding the need to operate a hot water storage tank.

The heating system will offer all the advantages of a gas or oil heated system with the heat exchanger taking the place of a boiler.

This system will be backed up as in other Bancon Homes by an electrical immersion hot water cylinder.

Advantages of a Combined Heat & Power (CHP) District Heating Scheme

District heating is not a new concept and there are many district heating schemes in the UK fuelled by gas and oil. Given the stricter building regulations being introduced on carbon emissions, there is a shift towards renewable sources for such schemes. In Scotland, woodfuel provides an obvious source and there are currently four operational schemes –

Location	No. of Homes	Size of Boiler (kW _{th})	Operational
Whitegates, Lochgilphead	50	460	2004
Glenshellach, Oban	90	650	Phase 1 - 2004 Phase 2 – 2007
Aviemore	130	500	2007
Pulteney Town, Wick	500	6,000	2008



Whitegates, Lochgilphead, Picture courtesy of Vital Energi Ltd.

Our CHP district heating scheme will produce heat and electricity simultaneously, advantages of which include –

- ✓ Lower CO₂ emissions
- ✓ Reduced maintenance costs against individual boilers
- ✓ You only pay for what you use – inefficiencies in generating the heat are not your problem
- ✓ All the advantages of gas systems without the need for a boiler or flue
- ✓ Competitive and sustainable it will not be susceptible to wildly fluctuating gas or oil prices as recently experienced when there are global political or financial problems
- ✓ Heat is instantaneous – available when needed
- ✓ Reliable and safe form of heating – no fumes or flames
- ✓ Uses a readily available sustainable fuel source

How much will you pay?

With steep increases in the price of fossil fuels in recent years, the cost of woodfuel is now competitive with energy generated from fossil fuels such as mains gas, currently priced at an average 3.04 pence unit cost, including standing charge (note⁴). At this price and the following average annual heat consumption, indicative household annual heating bills would be:

Dwelling	2-bed house	3-bed house	4-bed house
Average Annual Heat Consumed (kWh)	10,500	14,500	18,500
Average Unit Cost (p/kWh)	3.04	3.04	3.04
Indicative Annual Heating Bill	£319	£441	£562

Our heat energy and standing charge will be priced competitively – we aim to be the cheapest local supplier of heat energy.

Consumer Agreement

The Consumer Agreement sets out the general terms and conditions for the supply of your heat energy.

As noted on first page of this document, if the supply of heat energy to your home is interrupted, and we are, temporarily, unable to supply heat energy to your home the electrical immersion hot water cylinder installed can be used to provide you with hot water.

In the event that we are permanently unable to continue to supply heat energy to your home, we will remove the heat exchanger in your home and replace it with a gas boiler, including any remedial works required, at no cost to you.

Note: Your home will already be connected to the mains gas supply for cooking purposes.

HoB ESCo is a newly formed, wholly owned subsidiary company of North Banchory Company Limited (NBC). It has been established for the specific purpose of installing and operating the District Heating Scheme at the Hill of Banchory.

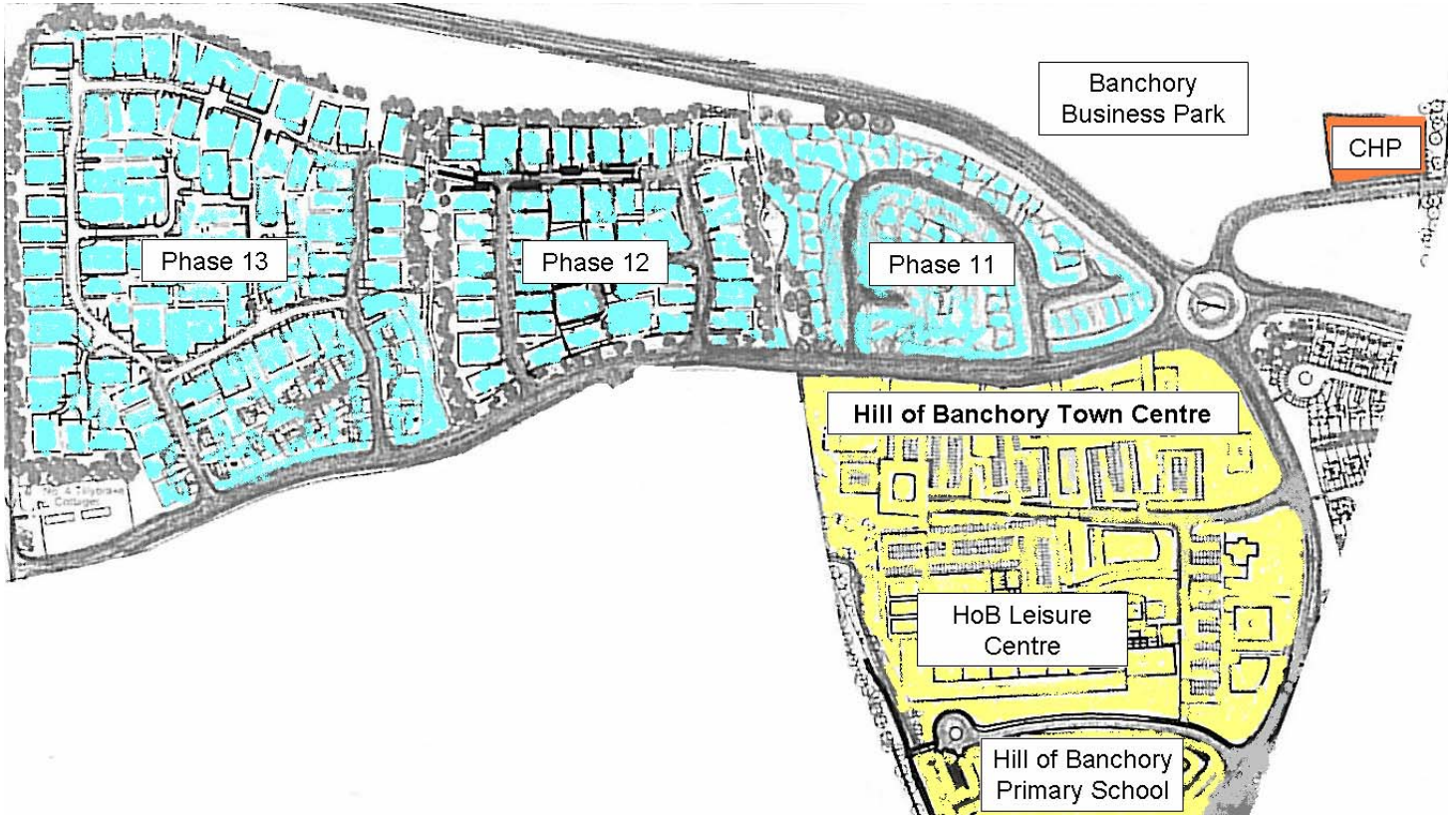
NBC is a local, family-owned, company established over 10 years ago and is responsible for the development of the Hill of Banchory.

Note ⁴ BERR (2007). *Quarterly Energy Prices*. December 2007. <http://www.berr.gov.uk/files/file43302.pdf> (Prices differences may apply regionally and across energy suppliers).

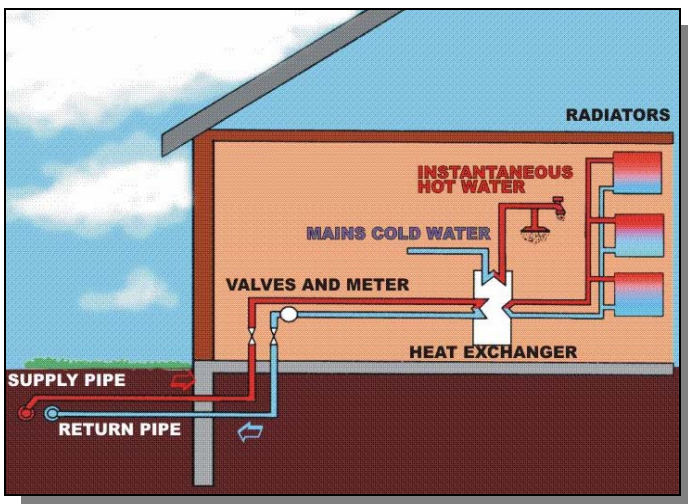
Frequently Asked Questions

Question	Answer
How long is my space heating and hot water contract?	HoB ESCo will supply your space heating and hot water for an initial period of 3 years.
How much will I pay?	Our heat energy and standing charge will be priced competitively – we aim to be the cheapest local supplier of heat energy.
How will my heat usage be measured?	A heat meter is attached to the heat exchanger. Heat meter readings will be taken by HoB ESCo.
How will I be billed?	You will be sent a quarterly bill.
How will I pay?	As noted, above you will be sent a quarterly bill, however, you will have the choice of paying by – <ul style="list-style-type: none"> ▪ Monthly standing order; ▪ Quarterly direct debit; or ▪ Quarterly cash or cheque
What if I want to switch supplier?	You will be free to switch supplier at the end of your initial 3-year contractual period although this could affect the building's Standard Assessment Procedure (SAP) rating. SAP is the Government's recommended system for energy rating of dwellings and is used to fulfil requirements of the Building Regulations.
Do I require a boiler in my home?	No. Hot water is piped to the Heat Exchanger in your home from a 1.1 MW _{th} central boiler.
How is heat energy transferred to my home?	Heat is transferred from the Heat Exchanger to your home's internal wet system.
Who owns the Heat Exchanger?	The Heat Exchanger is owned by HoB ESCo who is responsible for its servicing and maintenance.
What if there is a fault with my Heat Exchanger?	Bancon Homes have supplied a thermal tank with electric immersion heater as backup.
How do I report a fault or problem?	Faults or problems should be reported to our 24-hour helpline. The number will be printed on your bills and correspondence from us.

Hill of Banchory map & District Heating illustrations



HOW DISTRICT HEATING WORKS

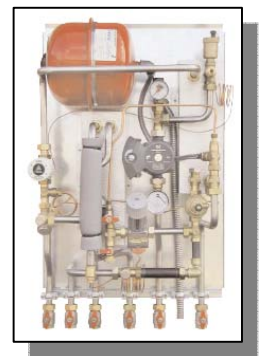


Picture courtesy of Shetland Heat and Power Ltd.

EXAMPLE HEAT EXCHANGER



Picture courtesy of Eric Wells, Aberdeenshire Council



Picture courtesy of Vital Energi Ltd.

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