A residents guide to heating & hot water

HOW TO BE ENERGY EFFICIENT WITHOUT COMPROMISING YOUR COMFORT

Introduction

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Heat networks, also known as district or communal heat networks, provide an efficient and environmentally friendly way of delivering energy to buildings. Instead of every home needing its own gas or electric boiler, a central plant room generates energy into heating, hot water, and sometimes cooling, which is then supplied to all connected properties. Your heat network is managed by your heat supplier.

Heat networks explained

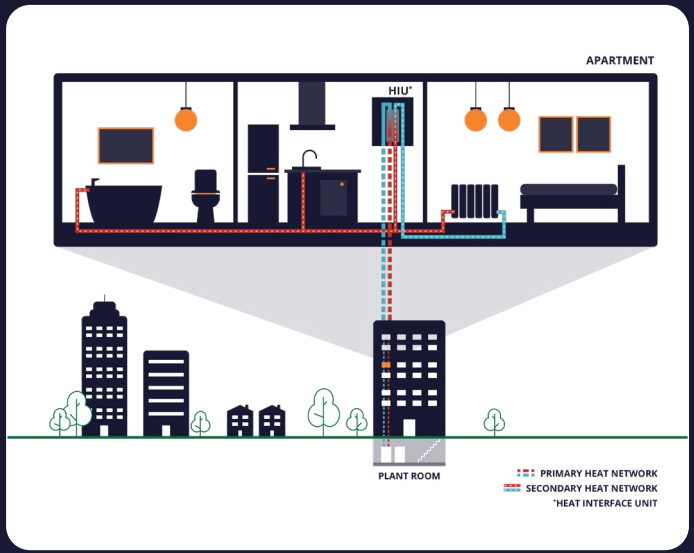
Your heat supplier, or building owner, manages the incoming bulk fuel supply to the central plant room, which uses low-carbon technology to produce heating & hot water via gas boilers, electric boilers, combined heat and power units (CHP), air source heat pumps or ground source heat pumps.

From the plant room, energy is distributed through a network of insulated pipes to a heat interface unit (HIU) installed in each property. This ensures a reliable and efficient supply of heating & hot water, delivered to your home as and when you need it.

Your HIU is connected to room thermostats and programmers, giving you full control over your energy use. A heat meter linked to your HIU measures the amount of heating & hot water you consume, so you only pay for what you use.

Where we provide billing services for cooling, you may also have a cooling interface unit (CIU), delivering cooling services alongside heating & hot water.

Please note, if you're connected to a district heat network then the energy centre may be located outside of your development.



Heating your home

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Heating in modern buildings

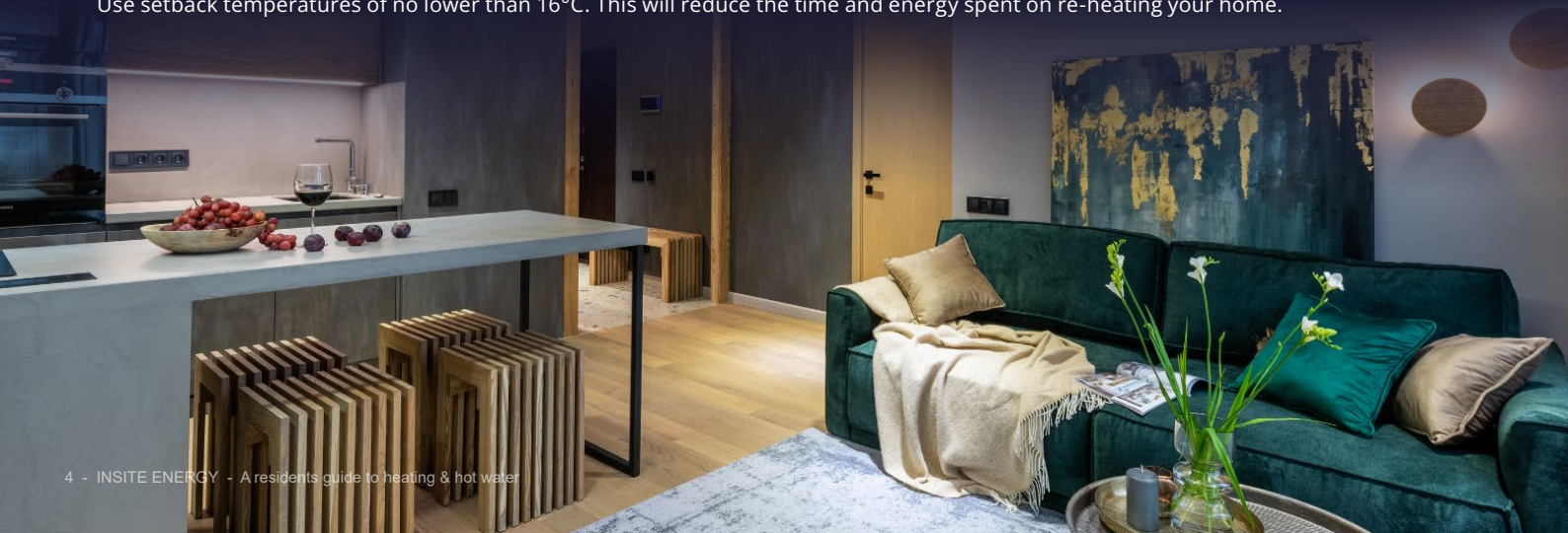
As new buildings are better insulated, often with double or triple glazed windows, there will be less heat loss. With less heat escaping the fabric of your home, less heat is required to keep your home at a comfortable temperature.

Consequently, lower temperatures are required in the radiators. This translates to a greater energy efficiency and lower energy bills. Because of this you may experience your radiators and underfloor heating feeling colder than you are used to.

Modern heating systems

Generally, modern heating systems will operate with lower temperatures than you may be used to. It can sometimes take a little longer to heat up your home. It is therefore best to avoid turning your heating on and off throughout the day and instead set the room temperature lower (known as 'setback temperature') when it would otherwise be off.

Use setback temperatures of no lower than 16°C. This will reduce the time and energy spent on re-heating your home.



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Care and maintenance of your HIU

Taking care of your heating system

It is important to bear in mind that, like a car, if your heating system has not been used for an extended period (i.e., over the summer) it may require some simple procedures to make sure it continues to run and to prevent service and maintenance visits. If the pump has been switched off during the summer, limescale may cause it to stick possibly resulting in intermittent heating & hot water. It is therefore good practice to “exercise” the pump periodically.

How to “exercise” your HIU’s pump

Turn on your thermostat to the maximum temperature. This will turn the pump on. Leave it running for 15 minutes before switching off the heating again. During the summer period, you can programme your wall-mounted room thermostat to do this once a week during the night, or while you’re away to avoid discomfort. If the pump does not turn on, you should contact your maintenance provider. We also recommmend getting your HIU serviced every 1-2 years.

How do I control my heating system?

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Wall-mounted room thermostats

Wall-mounted room thermostats tell the pump within your HIU when heating is required, essentially switching it on to send hot water to the radiators or underfloor heating systems. In large apartments, you may have more than one wall-mounted room thermostat. This means that the heating has been divided up into heating zones. Heating needs can then be scheduled separately within these zones.

Fig. 1: An example of what your thermostat might look like

Tip: Try setting the heating schedule to suit your needs. This could be by reducing room temperatures while you're away, at work or at night, and setting the thermostat to holiday mode if you are away for extended periods of time.

Please refer to your manufacturer's guide for specific information on how to use your thermostats.

Underfloor heating (UFH)

UFH systems are typically slower responding than common radiators and so take longer to heat up your home. So, to keep the most comfortable temperatures, the UFH system should ideally be kept on consistently, apart from when you are away for longer periods, such as a weekend.

The wall-mounted room thermostats will automatically control the temperature in the apartment, switching the heating on and off to keep the desired room temperature.

Fig. 2: An example of what your UFH controller might look like

Thermostatic Radiator Valves (TRVs)

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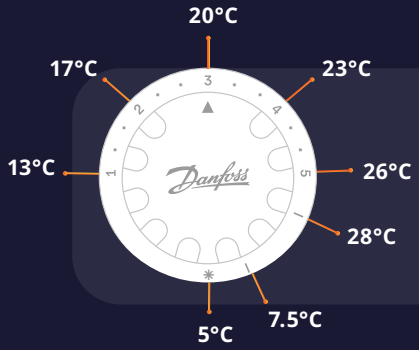
TRVs control the heat in rooms without wall-mounted room thermostats. TRVs have an inbuilt temperature sensor to make sure that the room is always at your desired temperature. If it is cold outside, they automatically make sure the heat in the radiators is turned up. Vice versa, the heat will be reduced should there be internal heat gains, e.g. from people in the room or the sun shining in. If you think your radiators are colder than they used to be, try checking the temperature in the room with a thermometer.

Understanding your TRV settings



The lines between each number correspond to a single degree. Increasing by 1°C can increase your energy consumption by 5%.

The numbers on a TRV correspond to an approximate room temperature setting between 7-28°C.

Recommended room temperatures

Try setting the below temperatures in your home, either through your wall-mounted thermostats or TRVs:

Bathroom	22 - 24°C	Approx. TRV setting 4-5
Living room	21 - 22°C	Approx. TRV setting 3-4
Kitchen	18 - 19°C	Approx. TRV setting 2-3
Bedroom	16 - 18°C	Approx. TRV setting 2

Tip: Lowering your room temperature by just 1°C can save you 5% on your heating bill.

How are your radiator valves connected?

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Radiators traditionally used to have both input and output connections at the bottom of the radiator (BBOE, see figure 3), often with high temperatures (82°C) running through the radiator and with no control of the rate of water flow.

Now, by having one connection in the top of the radiator and the other in the bottom (TBOE, see figure 4), the flow through the radiator, can be controlled maximising the heat delivered to the room.

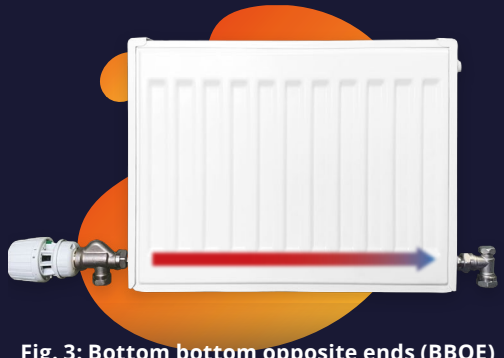

Fig. 3: Bottom bottom opposite ends (BBOE)

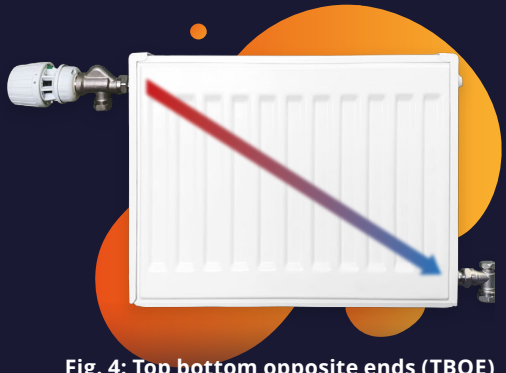

Fig. 4: Top bottom opposite ends (TBOE)

Tip: TBOE connected radiators provide a higher heat output of up to 15%!

Good to know: To reduce excessive energy usage, modern heating systems are sized to specific temperature sets. This may mean that you won't be able to achieve very high room temperatures during the coldest days of the year.

How will I know if the flow through my radiator is 'controlled'?

Your radiator should feel warm where the radiator valve is installed and cool at the opposite end. This means that all the heat in the radiator has been transferred into the room. If the radiator is the same temperature all over then it has not been balanced correctly and will not be efficient.

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Troubleshooting your radiators

If you have one or more radiators that are cold and have no heat entering them, then there may be three causes:

1. Stuck TRV spindle

Sometimes the spindle on the radiator valve can get stuck, which means that the flow through the radiator could be restricted.

2. Blocked TRV

Because the flow has been restricted through the radiator to maximise the heat efficiency, the opening (orifice) of the TRVs can be small. Debris from radiators may therefore occasionally get stuck here.

3. Air

In periods where heating is not required, air pockets can form, which may prevent the water flowing through the radiator.

Follow the proceeding set of instructions to troubleshoot these issues.

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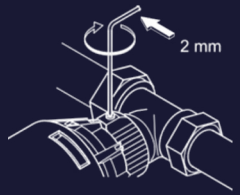
Before you start

Turn your wall-mounted room thermostat to the maximum temperature and check that the pump within your HIU is on. It may take a few minutes for the pump to turn on. If the pump does not turn on you should contact your maintenance provider.

⚠ Please avoid changing any settings on the pump.

Follow these steps to un-stick the spindle

1. Wait for 30 minutes to allow for the heat to circulate round your heating system.



2. Identify problematic radiator(s) and remove the white thermostatic sensor head from the radiator valve, either by using an Allen key to loosen the screw, or by holding the base of the thermostatic sensor head and twisting gently until it clicks and pops off.

3. Gently knock the side of the radiator valve with a small spanner or Allen key.

4. Push the spindle up and down until it begins to loosen and moves easily.

If heat does not enter your radiator following step 4, then the radiator valve may be blocked.

Follow these next steps to unblock the valve

5 Make note of the setting on the green dial adjacent to the silver arrow (figure 4) on the radiator valve.

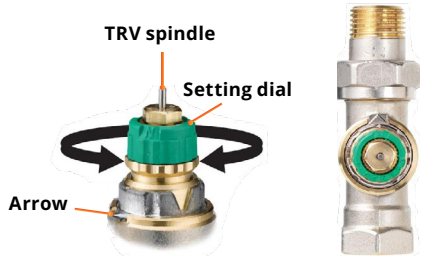


Fig. 5: Radiator valve

6 Turn the flow setting to fully open (position N on the dial) for 10 seconds. The radiator valve will then be flushed.

7 **Return the green dial to the original setting.**

It is important to set the radiator valve to the original setting otherwise you'll have too much flow going through your radiator, which may result in increased heat usage and discomfort.

8 Finally, replace the head either by tightening the Allen key or via the snap-on function.

How to remove air from your heating system

1 Ensure that the heating has been on for at least 30 minutes, or until the system is fully hot.

2 Switch the heating off via the wall-mounted room thermostat, and leave the air within the system to settle for an hour.

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3. Open the air vent on the top corner of the radiator using a radiator key. Whilst holding a cloth underneath, turn the radiator key anti-clockwise to open.

4. You'll then hear air leave the radiator with a hissing or spluttering sound.

5. When there is no more air, water will start to come out. Use the cloth to absorb any water. It is therefore important to close the air vent as quickly as possible by turning the radiator key clockwise.

6. After removing the air from the radiators, check the pressure gauge on the front face of your HIU. The pressure should be between 1 and 2 (1.5 Bar). If the pressure is below 1, you should contact your maintenance provider to re-pressurise and re-fill your space heating system.

7. If the heating system is correctly pressurised, turn the room thermostat on. Heat should now enter all radiators.

If these steps do not solve the issue of 'cold' radiators you should contact your maintenance provider.

Energy saving tips

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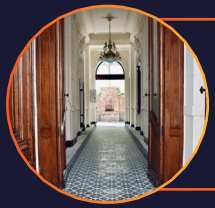


3°C set back

Lowering your room temperatures by just 3°C while you're away, or during the night, may be more efficient than switching off the heating entirely.

1°C lower at home

Lowering your set room temperatures by just 1°C can save you up to 5% on your heating bill.

Close the doors

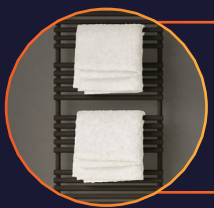
Different rooms have different uses, and so will require different temperatures. Closing the door between rooms will ensure the best comfort and energy savings.

Never below 16°C

Room temperatures below 16°C can lead to mould or damp, which may damage your home and cause illness. Exposure to mould has also been linked to an increased risk of asthma.

Close the blinds

Closing blinds or curtains (that don't cover the radiators) during the night will help keep the cold out and the heat in. Don't forget to let the sunshine in in the morning!



Towel rails

Towel rails are designed to dry towels and not to heat bathrooms, if you use them to heat the room, make sure that they are uncovered and used sparingly to avoid high energy bills.

Washing up

Hot water isn't necessary for washing dishes. Most dishwashing liquids can clean sufficiently at lukewarm temperatures, such as the ones you might use to wash your hands.

Take short showers

Avoiding baths and keeping shower times to just 4 minutes can lower your energy bills by at least £95 a year.*

*Estimated annual savings for an average household. Source: Energy Saving Trust.

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Too much moisture

Condensation or mould in the corner of your windows is a sign of too much moisture in the room. If you encounter this, try to ventilate the room more often.

Airing out

Air out your home 2-3 times a day for 5-10 minutes, making sure that all thermostats are off. This will introduce dry air into your home, which is quicker and easier to heat up.

Don’t cover your radiators

Covering or blocking your radiators will stop the heat from getting out into the room. This will reduce the efficiency and increase your heating bills.

Use all radiators

If you have more than one radiator in a room, it is more efficient to have them all set to the same temperature setting.

Open your windows

Only open your windows throughout the day if the temperature outside is above 17°C, or the walls, and furniture will be cooled. This will take time and energy to heat up again, which may increase your heating bills.

Avoiding mould

To avoid mould, bedrooms that are kept colder during the night should be reheated during the day. Bathrooms where the window is left open during the day should be reheated overnight.

Don’t dry clothes on your radiators

Avoid drying clothes on your radiators. This will reduce the heat output and efficiency, and also expel a lot of moisture into the room which can cause mould.

Feel your radiators

Your radiator should feel lukewarm or cold at the bottom connection where the water leaves the radiator. If the water is hot, this means you’ve not used all the heat available. This is inefficient and may mean that your heating bills are higher than they should be.

Dry your clothes outside

Cold air tends to hold less humidity and be dryer. This means, in many cases, a cold, dry winter day can cause clothes to dry faster than warm, humid summer days.

Keep a blanket on the sofa

We tend to get colder quicker when sitting still and watching TV. To avoid having to turn the heating up, have a cosy woollen blanket ready on the sofa.

Setting your room temperatures

What temperature should my bedroom be?

Sleeping in a colder room can improve your sleep quality. Try setting your bedroom temperature to 16-18°C, approximately setting 2 on your TRV.*

What temperature should my kitchen be?

Because the oven and electrical elements give off heat, try setting your kitchen temperature to 18-19°C, between setting 2 and 3 on your TRV*.

What temperature should my living room be?

When sitting still in the living room we can often get cold quickly. Try setting your living room temperature to 20-22°C, between setting 3 and 4 on your TRV*.

What temperature should my bathroom be?

As we're often lightly or undressed in the bathroom, the temperature should be a little warmer. Try setting your bathroom temperature to 23-24°C, approximately setting 4 on your TRV*.

See page 7 for more information on your thermostatic radiator valve settings.

Want more tips? Scan the QR to visit our website.

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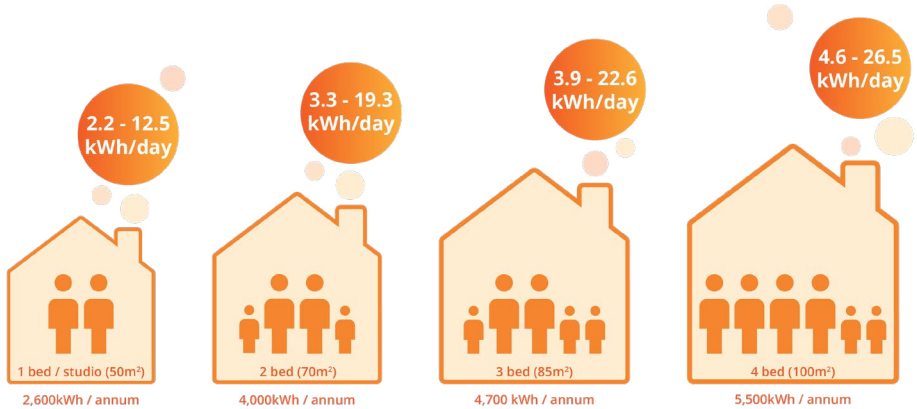
Is what I'm consuming normal?

If you're on credit billing, you can find how much you've used each month on your bill. If you're on pay-as-you-go, you can view your usage on your in-home display. All residents can also see their yearly consumption on their annual account statements.

According to **Ofgem**, the typical household in the UK uses 11,500 kWh of gas in a year. Heat networks are an efficient, low carbon method of delivering heat to buildings, so most heat network residents should see lower consumptions than this.

To give you an idea of how much energy you should be consuming based on the size of your property, we've pulled together the below averages based on an industry standard for residential energy use. Of course, your consumption will vary based on your lifestyle, your building, your home's size and how many people you live with.



This data is based on an industry standard for energy use within residential dwellings and should only be used as an indicator. The daily usage bracket has been calculated using estimate consumption from June (lowest consumption) to January (highest consumption).

This document has been adapted from an original version produced by Kurve Technologies Ltd. It has been modified to suit Insite Energy's requirements with some imagery provided by SAV Systems.

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Rev.2 2025