

Climate Springboard

Heat

Simple steps to a smaller
carbon footprint



Welcome!

Here's the big picture: the Scottish government aims to convert 1 million homes and 50,000 non-domestic buildings to “zero emissions heat” by 2030. As a result, most people think this story starts and ends with one thing. Heat pumps.

They're not completely wrong! We are the generation that will lead the electric revolution and enjoy the benefits: cleaner air, warmer homes, lower bills and more energy security.

But it's not the full picture. Energy efficiency measures are a “critical precursor” to zero-emission heating systems. They make sure the switch is affordable. Well-insulated buildings cost much less to heat.

That's where this guide comes in. It contains 14 steps you can take to reduce your business's carbon footprint and heating bills.

Not ready for a heat pump yet? There's plenty you can (and should) do in the meantime. Most steps require little or no investment and are directly within your control. Complete each one in order.

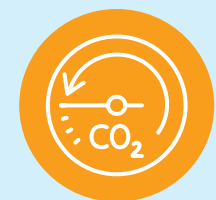
By the end, you will have:



Data showing how much gas you typically use on heating a month.

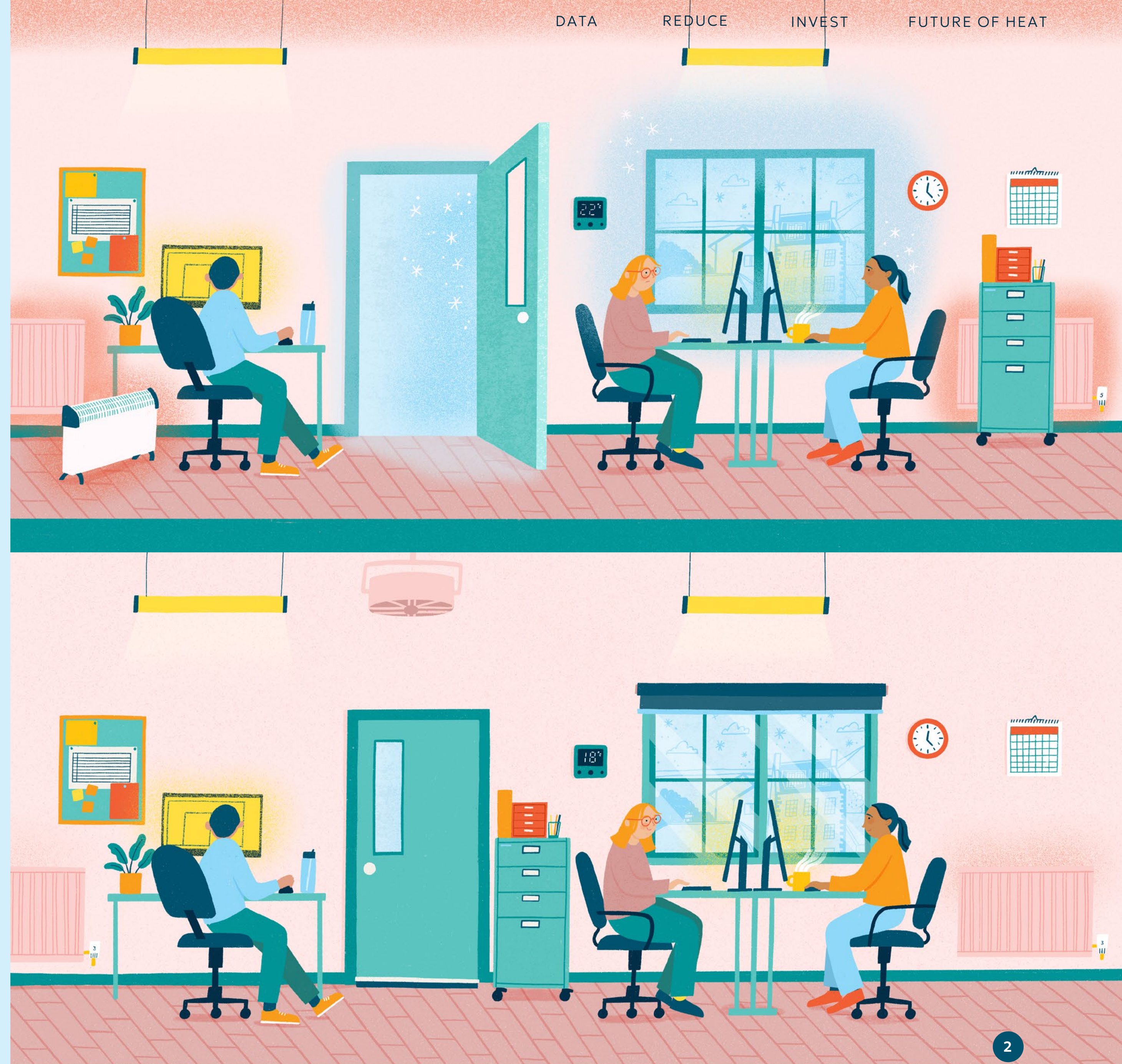


Started spending less money on fuel by heating your premises more efficiently



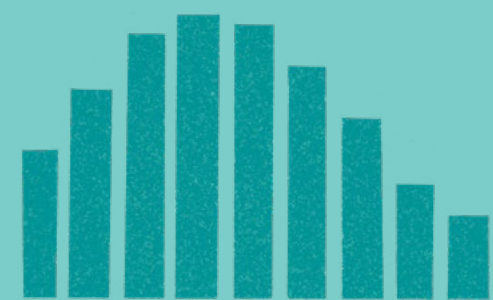
Reduced your business's carbon footprint, moving towards net zero

Once you're done, read Climate Springboard's business guides on [electricity](#) and [vehicles](#).



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Data

- Identify your meter type
- Find your data online
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- Look for patterns
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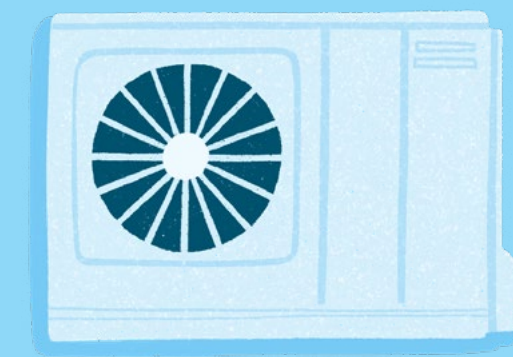
Reduce

- Tweak your boiler settings
- Stop wasting heat
- Use TRVs properly
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Invest

- Get an energy audit
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- Insulate roof, floor and walls
- Explore alternative tech
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Future of Heat

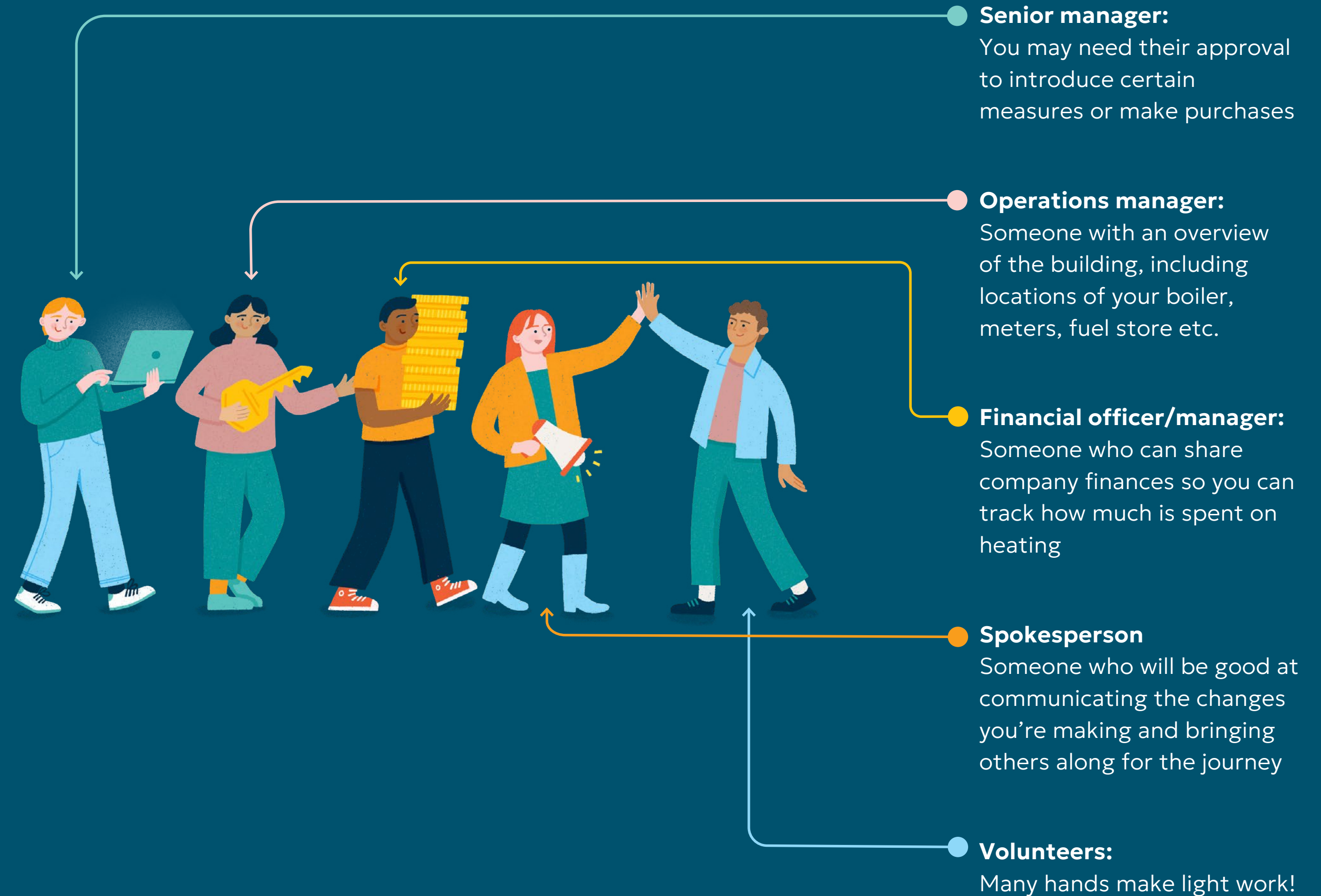
- Heat Pumps
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Get your team on board

Some of the steps in this guide can be completed by one person.

But many steps require you to work with colleagues to encourage small changes to their daily routines. Others might need you to spend company money or get permission to test things, like the boiler.

You don't need speak to *everyone* before getting started. But have the following people in mind:



Motivation

Even if your team is clued up about the climate emergency, they may still have reservations about changes to their daily routine. Old habits die hard.

From our experience supporting businesses, we recommend you...



Have in-person conversations. We respond much better to being spoken to directly than reading emails or posters. Give people space to voice any concerns – you might find they are just looking for reassurance.



Ask for ideas. People are far more likely to take ownership of a task that they suggested. Some of the most successful initiatives we've seen came from senior managers listening to their staff, rather than imposing top-down measures.



Communicate the bigger picture. Explain the connection between energy use, carbon emissions and your company's commitment to meeting Scotland's goal of net zero by 2045. Learn more about [drivers](#) here.



Talk about money. Businesses that fail to act toward net zero will pay the cost. And it's not just storm damage – reducing emissions now can help you to avoid regulatory fines and keep important contracts.

Incentives and competition

Consider rewarding teams or individuals based on their energy-saving achievements.

One Lanarkshire pub group, who completed Climate Springboard, had great success by inviting teams on different sites to compete to reduce gas and electricity use. It paid off: between 2019 and 2023, the firm saw their electricity use fall by 163,000 kWh (enough for a three-bedroom home for 42 years). The money saved easily paid for a £1,000 cash prize to the winning team.

CASE STUDY



In 2010, the UK Government cut its carbon emissions by 10% in one year by introducing an energy-saving competition between departments.



You don't need to use cash. The offer of treats, vouchers or simply bragging rights can motivate staff to take part.



Update staff weekly on how they're doing.

Write a short email sharing the figures for fuel use and estimated money savings. (This gives you an extra reason to keep on top of the data)

Data

Objectives:

By the end of part one, you will:

- ✓ Know how to record your fuel consumption
- ✓ Know how much fuel your business uses in an average week
- ✓ Have named someone as responsible for logging fuel data on a regular basis

What if you're not on gas?

Gas is the most common heating fuel in Scotland, so this section describes how to collect gas consumption data. Exactly how you collect data will be slightly different if your heating runs on oil, LPG or biomass, but you can follow the same steps.



STEP 1

Identify your meter type

 Time: 5 minutes

 Cost: £0.00

To start, locate the meter, which is often in a box outside the building or in a cupboard. Ask your operations/estate manager if you need help.

Work out which type of meter you have:
Smart or **Analogue**



If you're unsure, [this free tool](#) from the Citizens Advice Bureau tells you exactly which device you have. You'll need your postcode and the Meter Point Reference Number (MPAN) found on gas bill.

Don't have a smart meter?

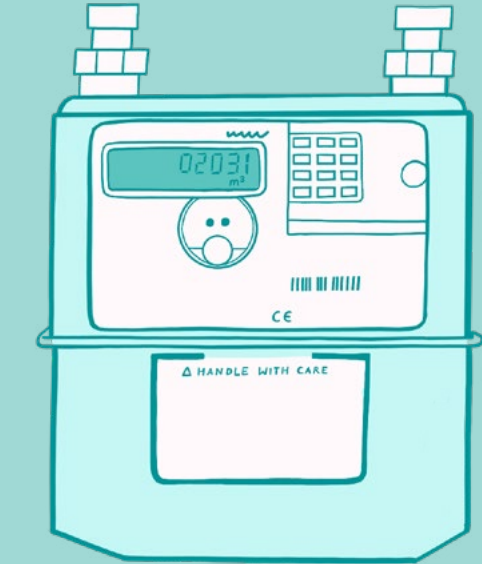
We strongly recommend you request one from your supplier. They are completely free with no upfront installation costs. Start by searching for your supplier on [Smart Energy GB](#).

You can contact your energy provider directly by phone or email – there's no need to go through an energy broker.

Smart meter:

It has a digital display. It automatically sends your meter reading to your supplier, typically every 30 minutes, which you can view online.

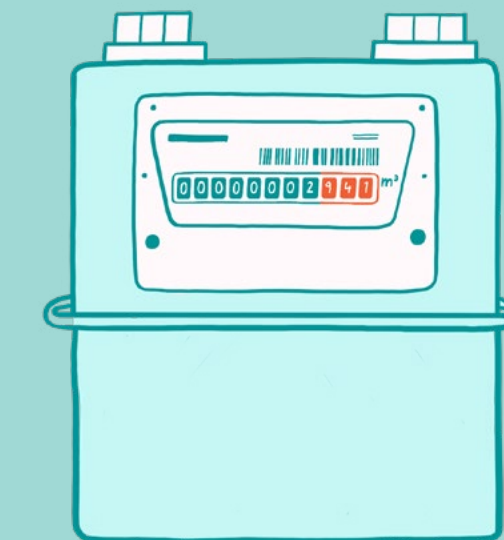
Go to [Step 2](#)



Analogue meter:

The oldest type of meter. It may have a digital or rotary display or a series of dials. You'll need to take manual meter readings.

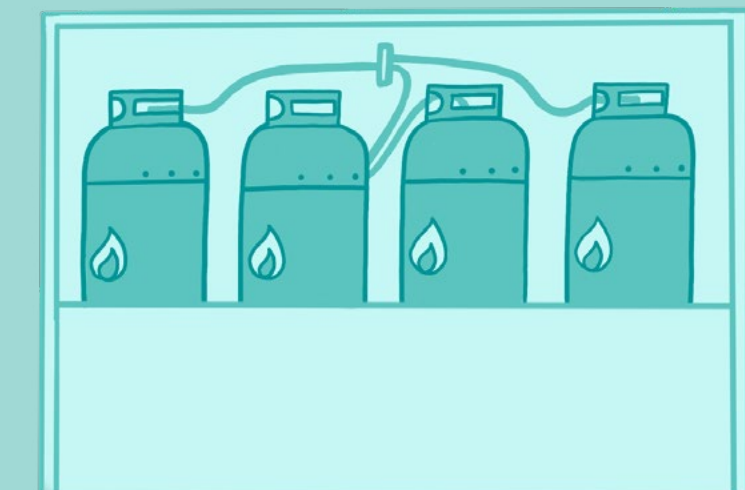
Go to [Step 3](#)



No meter:

If your heating runs on oil or LPG (liquid petroleum gas), you may not have a meter. You can estimate your usage based on the volume of fuel in each delivery. Consider buying a [smart fuel monitor](#), which costs around £100.

Go to [Step 3](#)



STEP 2

Find your data online



Time: 30 minutes



Cost: £0.00

If you have an analogue meter, skip this step. It explains how to find and download your fuel data if you have a smart meter.

1



Log into your energy provider's online customer portal

2



Look for a page with a name like 'My Energy Usage'. There, you'll see your monthly, weekly, daily and even hourly fuel use in kilowatt-hours, usually shown on a bar chart.

3



Many energy providers allow you to download the data for a specific time frame. For most it's that simple, move onto [Step 4](#)



I can't see any data on my account

Contact your energy provider by phone or email. If you've changed providers since the smart meter was installed, they may need to connect it to your new account.



My energy provider only provides the raw data

Try a free energy-tracking app like [Bright](#) or [Loop](#). It connects to your smart meter and lets you view your electricity data in a digestible format on your smartphone.

Alternatively, send us an email at climatespringboard@ed.ac.uk. We love hearing from businesses! We'll send you a video tutorial explaining how to create a simple chart from a daunting mass of data!

STEP 3

Start recording data

 **Time: 50 minutes**
(spread over a week)

 **Cost: £0.00**

If you have a smart meter, skip this step.

This step provides a timeline for taking manual meter readings. Once complete, you'll have enough data about your business' fuel usage to start taking action.



Start with a sprint:

Take five meter readings over three days. Once in the morning (ideally 9am) and once in the evening (ideally 5pm) on Days 1 and 2, then once in the morning of Day 3.



Slow down to a jog:

Continue to take one reading each day, at the same time, for a week.

Download our [Data Collection spreadsheet](#).
Record your data on the 'Heating' tab, which looks like this:

| | 9am (m3) | 5pm (m3) | Day usage (5pm minus 9am) | Night usage (next day 9am minus 5pm) |
|-------|----------|----------|------------------------------|---|
| Day 1 | 01223 | 01290 | 67 | 38 |
| Day 2 | 01328 | 01386 | 58 | 14 |
| Day 3 | 01400 | 01499 | 99 | 23 |
| Day 4 | 01522 | 01573 | 51 | 14 |
| Day 5 | 01587 | 01629 | 42 | |

- Enter your meter reading here
- Calculate the difference between meter readings to work out how much you use during the day vs the night
- Gas consumption is measured cubic meters (m³). If you want to convert it to kilowatt-hours (kWh), use [this online tool](#).

Keep it up

Continue taking meter readings **once a week** (and log them in the spreadsheet!). As you go, you'll learn more about how your business uses heating fuel.

Decide who is responsible for taking the readings. That might be you! It's easy to forget, so create a recurring event in your work calendar or make it part of your existing routine.



STEP 4

Look for patterns

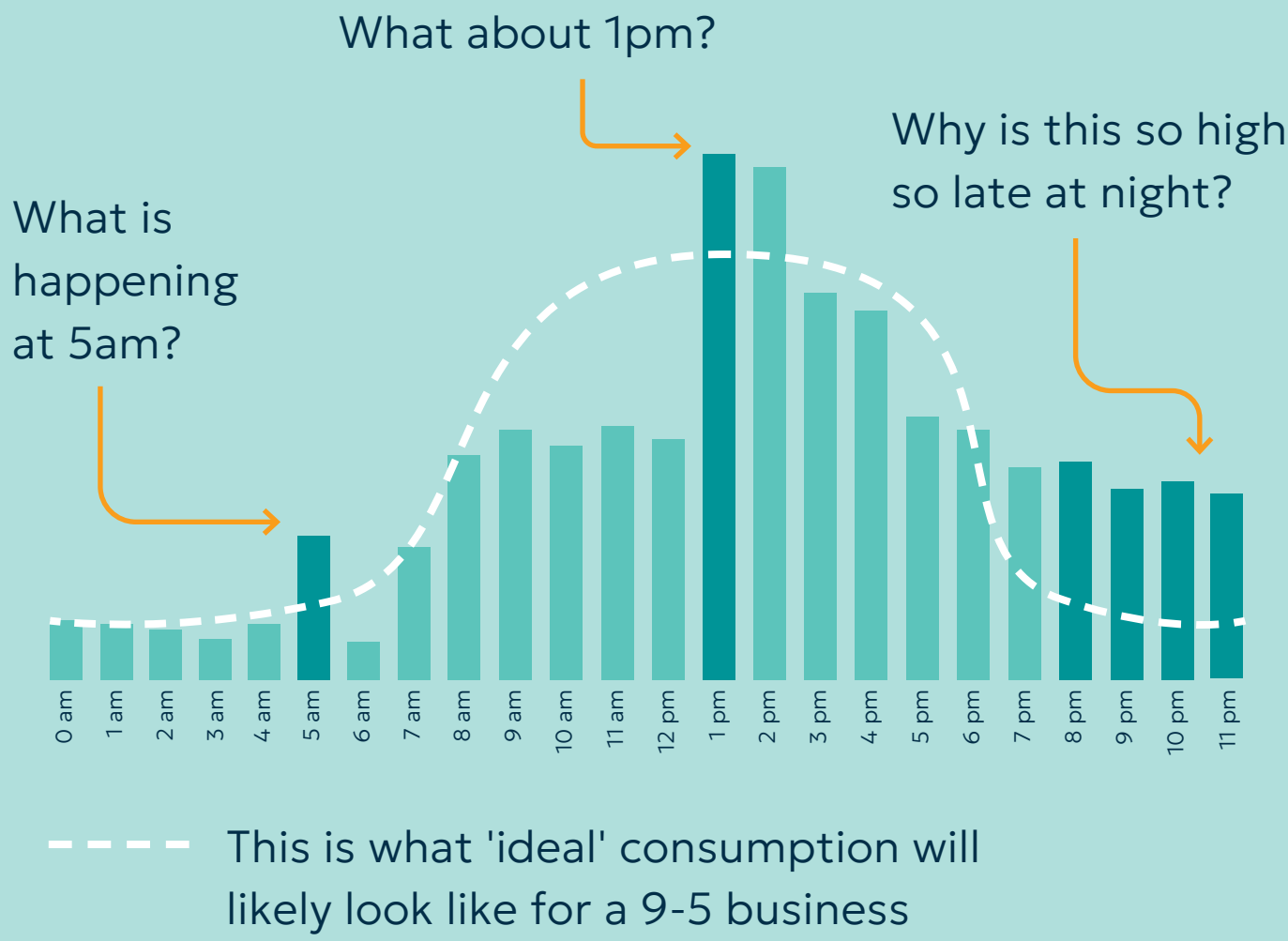
 Time: 30 minutes
 Cost: £0.00

This is where the magic happens. Once you understand your fuel usage patterns, you'll soon spot where you're wasting fuel, which will provide you with a list of quick, energy-saving wins.

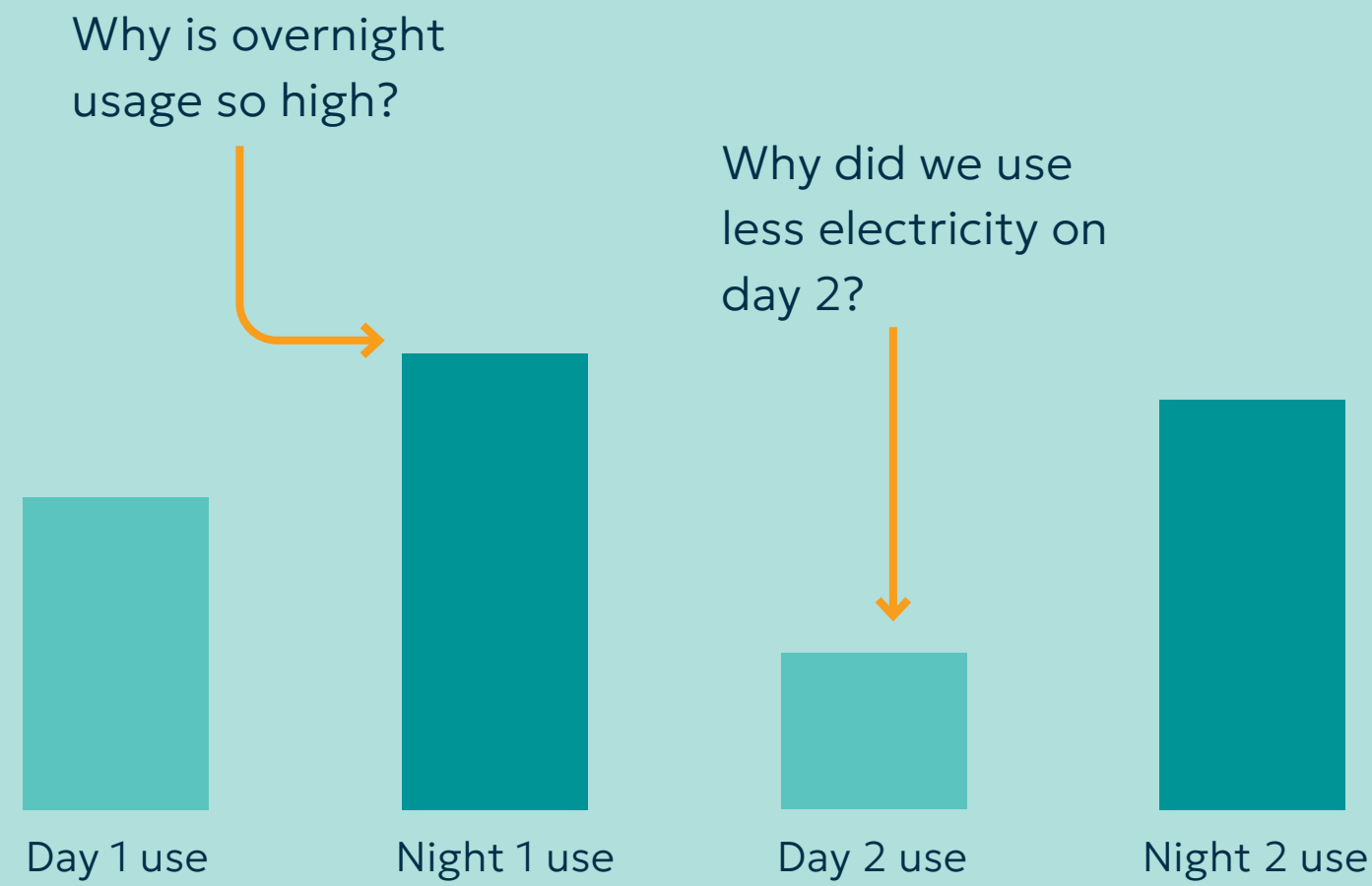
Open your energy provider's online portal or take the meter data you collected in the previous step and plot it onto a bar chart.



If you have a smart meter,
a 24 hour period might look like this:



If you have an analogue meter,
compare day and night readings to reveal patterns:



STEP 4

Look for patterns

 **Time: 30 minutes** **Cost: £0.00**

CASE STUDY

Jump Ship Brewing

In 2024, this Midlothian brewery started daily energy monitoring in order to understand which stages of the brewing process were most intensive. Thanks to this data, they realised they were wasting electricity by leaving the water heater switched on overnight – and have since automated the process.

Ask yourself:

Does it make sense? Your fuel use should match the daily and weekly rhythm of your business activity. For example, if your staff work from home on Fridays, your consumption should be much lower. If not, investigate why.

**What is happening overnight / on weekends?**

Your fuel consumption should be consistently much lower during unoccupied hours. If not, this could mean that the heating is being left on.



Are you seeing unexpected peaks? Most of time, this means the boiler is set to come on automatically at the wrong time – or needs repairing.

Are these numbers good or bad?

Good question! Many businesses see their gas consumption figures and don't know how to act on them. We recommend the [Energy Benchmarking Dashboard](#), created by The Chartered Institution of Building Services Engineers (CIBSE).

This tool gives you a sense of what is normal fuel usage for your premises, based on your size and sector. For example, a supermarket uses on average 261 kWh per square metre of floor space each year.



STEP 5

Read your bill

 Time: 15 minutes

 Cost: £0.00

OK, so this step isn’t strictly about cutting emissions.

But it proves an important point: understanding how much fuel you use gives you more control over how much you pay each month.



Efficient Energies

SAM ANDERSON (APPLE PIE LAND) LTD
UNIT 24
MIDLOTHIAN BUSINESS PARK
ORCHARD ROAD
MIDLOTHIAN EH54 XYZ

Account Number: 1234567

Invoice Number: 12345678931

Date (Tax Point): 14 October 2024

Supplied Address: 12 Apple Tree Terrace
Edinburgh
EH70 ABC

Enquiries:

if you have any queries regarding this invoice or your account in general, please call our Customer Services Help Line on 0800 123 1234 or write to us at Efficient Energies Power.

| Statement Section | FFL | CCL | VAT | Total |
|---------------------------------------|-----|-----|-----|--------------|
| Total balance from previous invoice | - | - | - | £1,212.01 |
| Payment recieved on 27 September 2024 | - | - | - | CR £1,212.01 |
| Balance Carried Forward | - | - | - | £0.00 |

| Charge Description | Reg ID | Period of Use | | Meter Readings | | Billed Units | Unit Desc | Price | Cost (£) |
|----------------------------------|--------|---------------|----------|----------------|----------|--------------|-----------|----------|----------|
| | | From | To | Previous | Present | | | | |
| Supply Number | S | 04 | 702 | D03 | | | | | |
| | | 15 | 0004 | 1234 | 234 | | | | |
| Meter No. 123456789 | | | | | | | | | |
| Units | 01 | 01/09/24 | 30/09/24 | 489243 E | 493432 E | 1 | 4,189.14 | 16.8199p | |
| Standing Charge | | 01/09/24 | 30/09/24 | - | - | 28.00 | Day | 13.4053p | 4.02 |
| Capacity Charge: 10000 | | | | | | | | | |
| Total (Consumption) 4,313.40 kWh | | | | | | | | | £704.61 |
| Total Other Charges | | | | | | | | | £4.02 |
| CCL at 0.775p/kWh | | | | | | | | | £33.43 |
| VAT at 20.00% | | | | | | | | | £150.56 |
| Total Gas Sales | | | | | | | | | £892.62 |
| Total Invoice Value | | | | | | | | | £892.62 |
| Balance Brought Forward | | | | | | | | | £0.00 |
| Balance Due | | | | | | | | | £892.62 |

There are two main ways that businesses typically pay more than necessary:

You’re paying for estimated, not actual usage

- Make sure you are paying for the fuel you use.
- If your bill says ‘estimate’ or ‘E’ next to the number showing your gas use (kWh), start submitting actual meter readings each month.

You’re on the wrong tariff

- If you let your tariff ‘roll over’ after the initial contract ended, you’ll likely be paying the highest rates.
- You should now have data on how much heating fuel you use and when. Use this to shop around for a better tariff more suited to your business’s needs.
- For example, if your business mostly uses energy at nights and weekends (this is common for restaurants, pubs, etc.) moving to an evening and weekend tariff could save you money.

Reduce

Objective:

By the end of part two, you will:

- ✓ Have a bird's eye view of your business' heating system and how it works
- ✓ Reduced the amount of heat loss from your premises
- ✓ Be paying less for fuel
- ✓ Have a warm, comfortable workplace



STEP 6

Tweak your boiler settings

 **Time: 45 minutes**

 **Cost: £0**

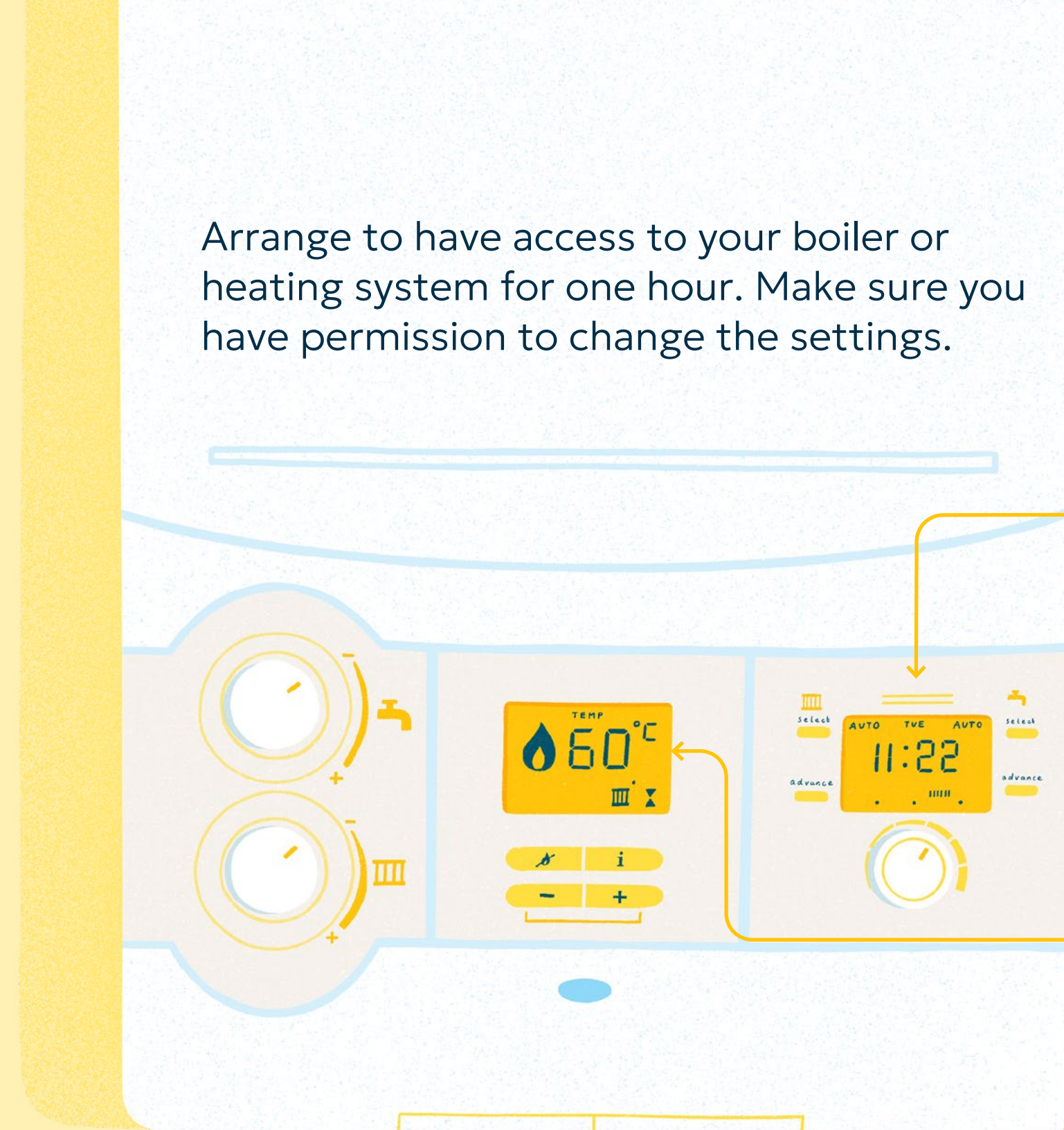
In one morning, you can quickly fix several common heating problems that lead to excessive energy consumption.

CASE STUDY

"It was super super simple."

In December 2022, a member of staff at [Pilton Community Health Project](#) in north Edinburgh reduced the flow temperature on their gas boiler. When they collected their energy data a year later, they realised this quick change had cut their gas use by 25%.

Arrange to have access to your boiler or heating system for one hour. Make sure you have permission to change the settings.



10 mins

Check the heating pattern

Review your boiler's current settings. It should not be on during unoccupied hours, i.e., nights and weekends, or warmer months. If it has a timer, make sure the heating is set to turn on an hour before people arrive for work and turn off an hour before people leave.

5 mins

Reduce your boiler's flow temperature

Boilers are more efficient at a lower flow temperature. Adjust the radiator settings using the buttons on your boiler, indicated by a radiator icon. Try 65 degrees for conventional boilers and 60 or 55 degrees for combi boilers.

30 mins

Set the right temperature

If you use a thermostat, make sure your workplace is set to a reasonable temperature. If you can adjust the heating in different rooms, set office areas to 18 degrees and corridors or receptions to 16 degrees.

Inform your colleagues about any changes and make sure to gather feedback. Are some areas now too warm or too cold? This info will be helpful when you come to draught-proofing and insulating.



STEP 7

Stop wasting heat



Time: 4 days

££ Cost: £0 - £300

Reduce the amount of fuel needed to keep your building warm. Send this list to your colleagues and ask for their thoughts and suggestions for how best to implement them at your company.

CASE STUDY

Lazy Day Foods

This Central Belt bakery decided to change the layout of their factory floor. The chocolate cooling tunnel, surrounded by hot equipment, was using lots of power to keep to temperature. By moving it closer to the wall – and the colder outside air – they saved on energy and coolant.

Ongoing

Shut doors and windows.

Put up posters near doors and windows as a reminder. For street-facing businesses, use friendly stickers to advertise that you are still open!

1-2 days

Fit draught excluders.

Draught proofing a small commercial building costs around £100, not counting savings. Start with this great four-page guide.

1 day

Review your workplace layout.

Separate any heating and cooling machinery (e.g. ovens and fridges) that are kept very close together.

1-2 days

Install thermal blinds or curtains.

Research has shown they reduce heat loss through windows by around 32%. Prices start at around £30 each.

1-2 hrs

Remove clutter around radiators.

Help your radiators to distribute heat more evenly and effectively by clearing away furniture, objects and dust.

1-2 hrs

Insulate your pipes.

Cover any exposed hot water pipes, especially those near the boiler, with foam insulation. It starts at around £1 per metre.



STEP 8

Use TRVs properly



1-2 Time: 1-2 days

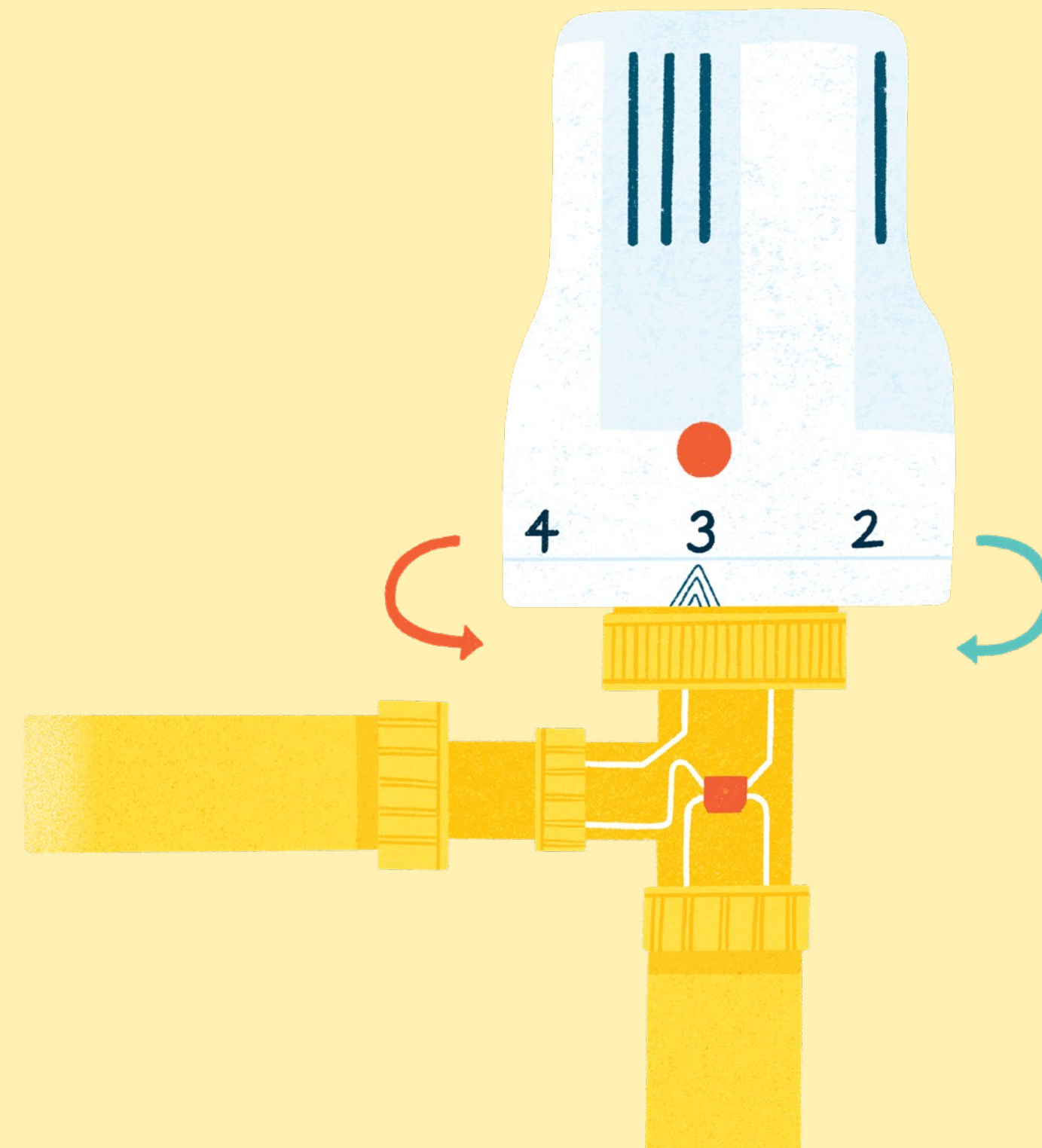


Cost: £150+

Your building might already be fitted with TRVs. Even so, you might be using them incorrectly and losing out on efficiency gains.

A thermostatic radiator valve (or TRV) is a small device that attaches to your radiator, replacing the manual on-off valve. It works like a mini thermostat, adjusting the heat output from each radiator to keep the room at a constant temperature.

This helps you spend less on energy, because you're no longer overheating individual rooms or heating areas that aren't in use, like corridors. Used properly, TRVs will reduce your gas consumption by 18% during the UK colder months.



Buying TRVs

Thermostatic radiator valves are widely available from plumbing suppliers and start from around £8 each.

Fitting your TRVs

If you want to install the valves yourself, watch this seven-minute video guide. You'll need some basic DIY tools and around 15 minutes per radiator. Alternatively, hire a plumber.

How to use a TRV

Set each room to the desired temperature by adjusting the numbered dial, which goes from 0 to 5. We recommend you set it to 3, which usually corresponds to 20 degrees. Double-check with your installer or refer to the valve instruction leaflet.

Your boiler will sense when the TRV closes and turn off or reduce the amount of hot water being sent to that radiator.

Turning your radiator up to the highest setting won't make the room heat up faster! It will just stay on longer, until the desired temperature is reached.

Consider placing stickers or labels on the valves indicating the appropriate setting (for the time of year), so that staff don't unintentionally set the temperature too high or low.

STEP 9

Basic maintenance

1.5 Time: 1.5 hours

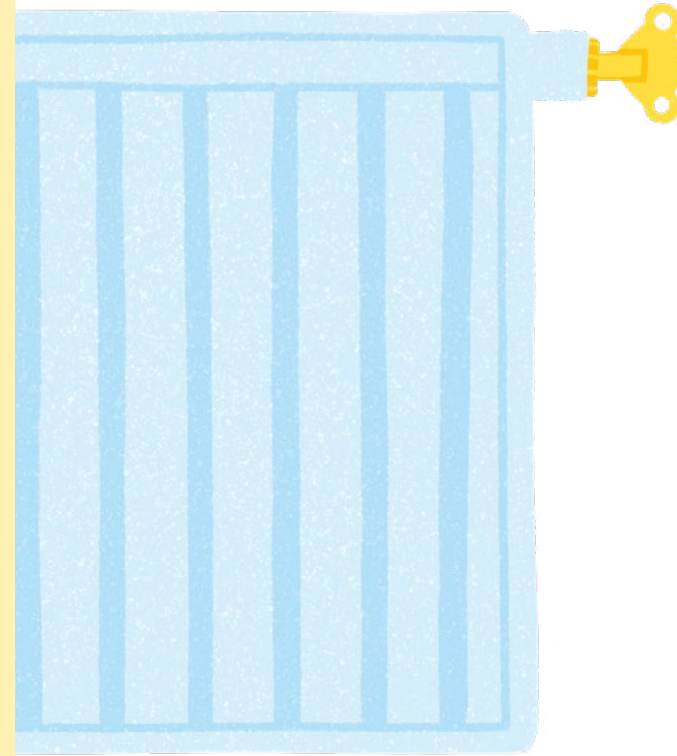
£ Cost: £2

You will need:

- A radiator key (£1)
- Plumbers tape (£1)

Air bubbles, leaks and deposit build-ups are common problems that cause your boiler and radiators to work less efficiently.

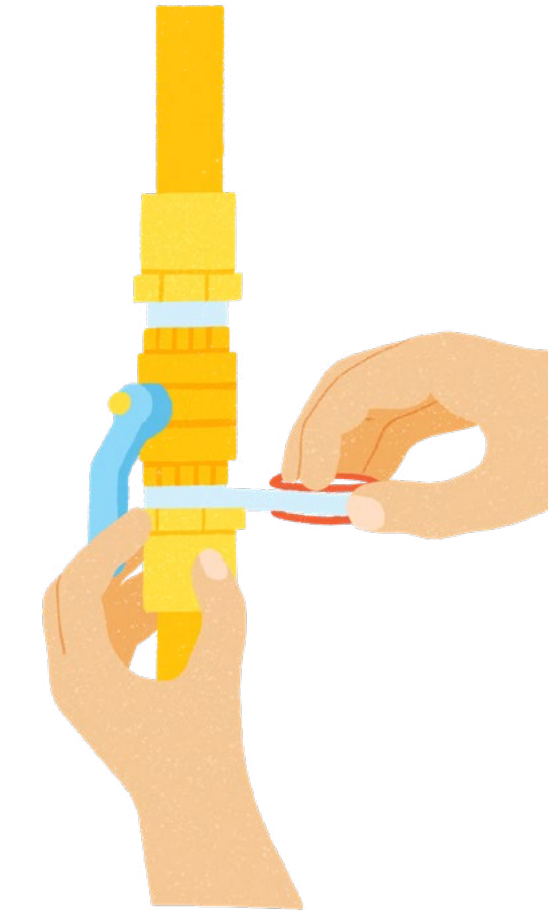
5+ mins per radiator



Bleed your radiators

Turn the central heating off and use a radiator key (£1) to remove any air bubbles. It should make a hissing sound. Stop when water starts to trickle out. Here's a [detailed guide](#). Do this regularly, as it helps your radiators to work efficiently.

5 mins per radiator



Fix leaks

Leaks in your plumbing mean your boiler has to burn more fuel to work properly. Place coloured paper under radiators valves to spot any drips and seal these with plumber's tape if required.

5 mins



Book a boiler service

Check when your boiler was last serviced; every 12 months is ideal. This will ensure optimal boiler energy performance as it cleans out deposit build-ups, which reduce efficiency.

Take the opportunity to speak to your plumber or heating engineer. Ask them for advice on how to make the most of the specific equipment you have installed. For example, air conditioners and warm air systems should be cleaned and have filters replaced regularly to prevent clogging.

Invest

Objectives:

By the end of part three, you will:

- ✓ Have created a free energy audit of your premises
- ✓ Have a well-insulated building
- ✓ Know where to go for funding to pay for more costly upgrades



STEP 10

Get an energy audit

1-6 Time: 6 weeks

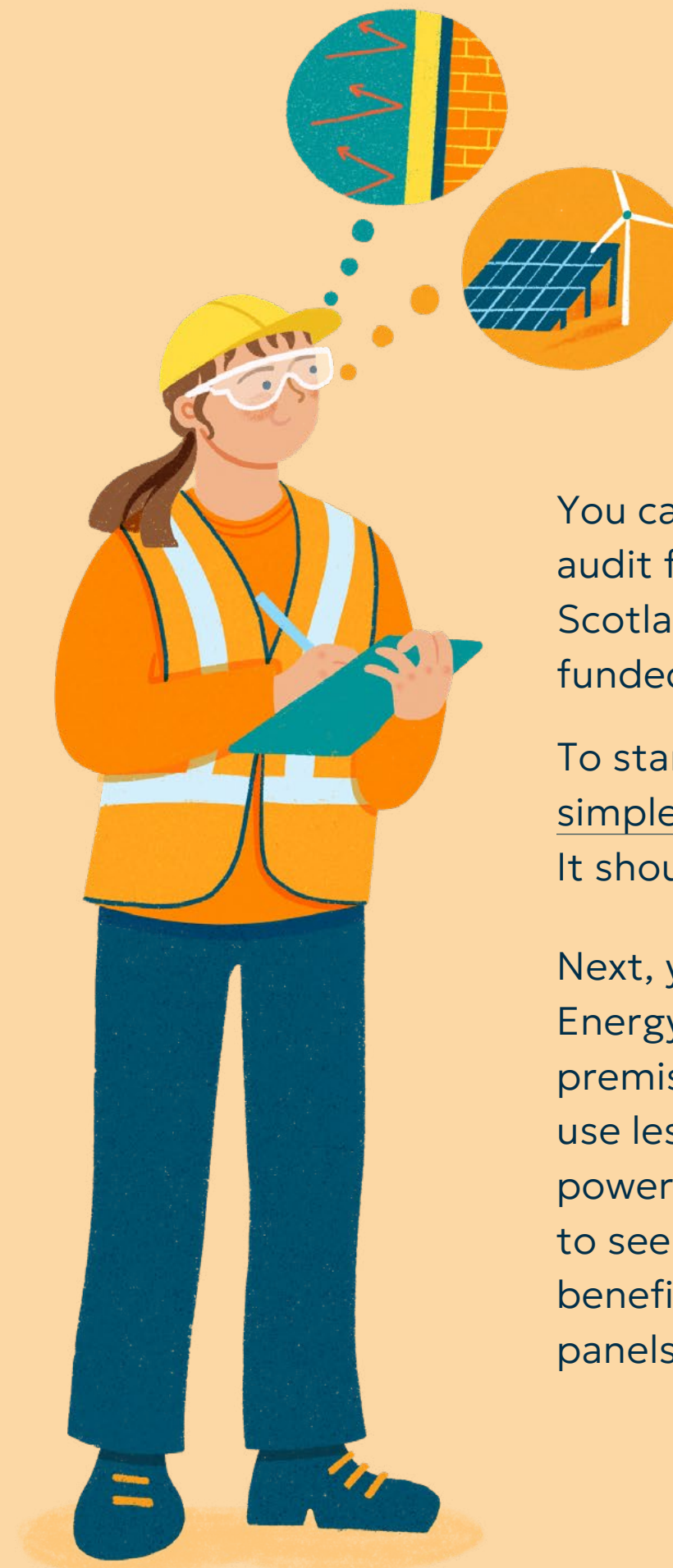
£ Cost: £0.00

Make sure that you have completed your 'housekeeping' steps from earlier in this guide to make the most of your audit.

CASE STUDY

CJM Accountancy

CJM requested an energy audit in 2021. The report recommended adding insulation, installing LEDs and replacing the boiler. They paid for the changes – worth about £7,000 – with a 0% interest loan and grant from Business Energy Scotland. The building's EPC score jumped from 91 to 69!



You can request a free energy audit from Business Energy Scotland (BES), a government-funded body.

To start, complete this [simple online form](#). It should take 5 minutes.

Next, you'll be assigned a Business Energy Adviser. They will visit your premises and show you how to use less energy to heat, light and power your business – and check to see if your premises could benefit from insulation, solar panels or a heat pump.

Your adviser will send you a detailed report, with:

- Tailored recommendations for how to save energy, e.g. insulate your roof
- Estimated costs for each item
- How long it will take to pay back, e.g. five years
- How much less CO₂ you would emit

This report will come in handy if you apply for a government loan or grant to fund your changes (see [Step 14](#)).

Businesses and charities can apply. You are eligible if you have:

- ✓ Fewer than 250 full time employees
- ✓ A turnover less than £42 million
- ✓ A balance sheet total less than £36 million.

STEP 11

Insulate windows



Time: Variable

££ Cost: £2 - £1200 per window

You have several options for improving the insulation of your windows, listed here from the cheapest and least insulating, to most expensive and most insulating.

Speak to your building manager about which type of window insulation best suits your workplace. You can get a government loan or grant to pay for upgrades – see Step 14.

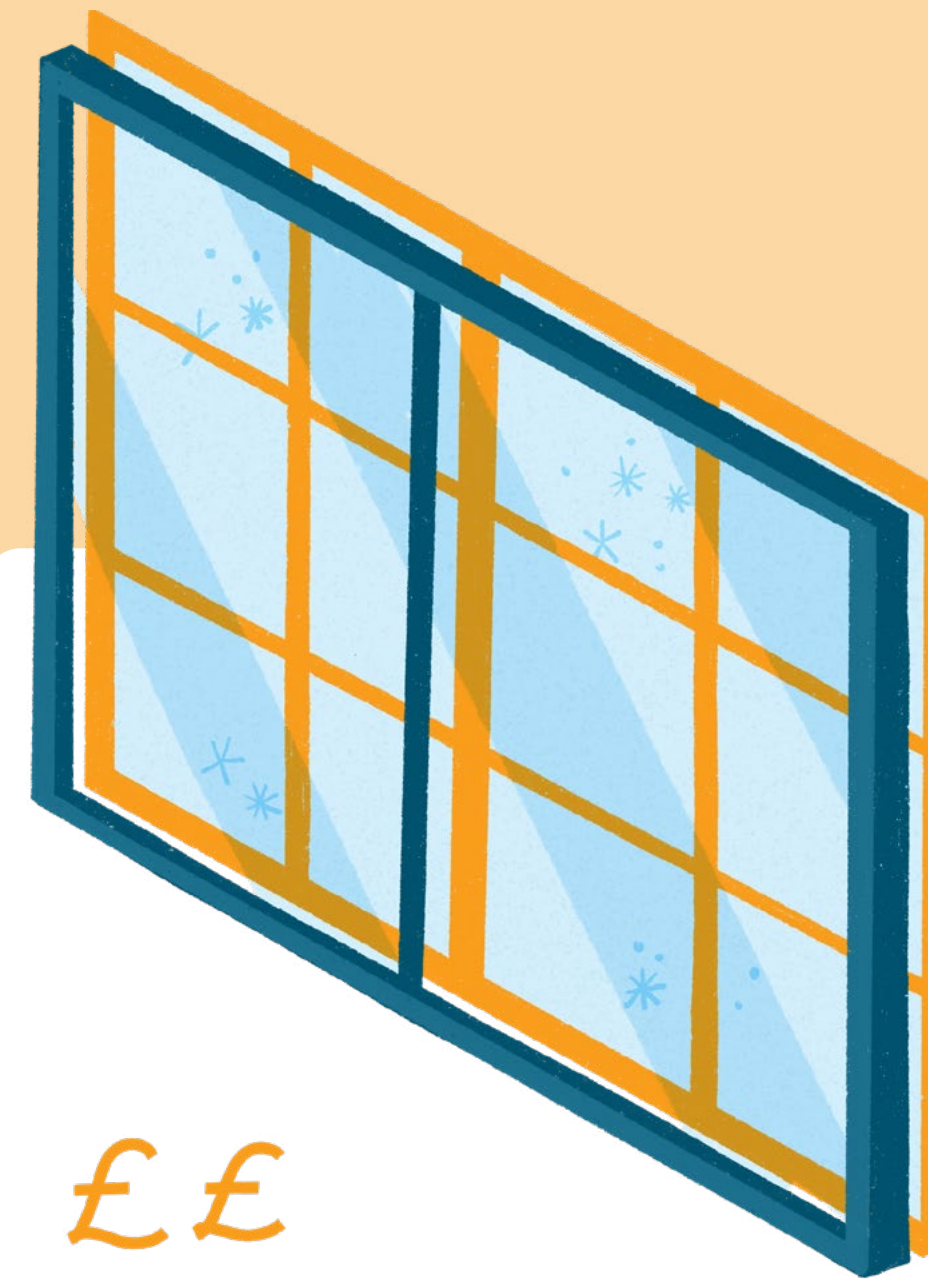


£

Window film

Thin transparent plastic film. You can install it yourself using strips of double-sided sticky tape around the frame of the window. The material looks like cling-film, but if fitted properly it is wrinkle-free and almost invisible.

- £1.25 per metre
- Easily removed, but not very durable

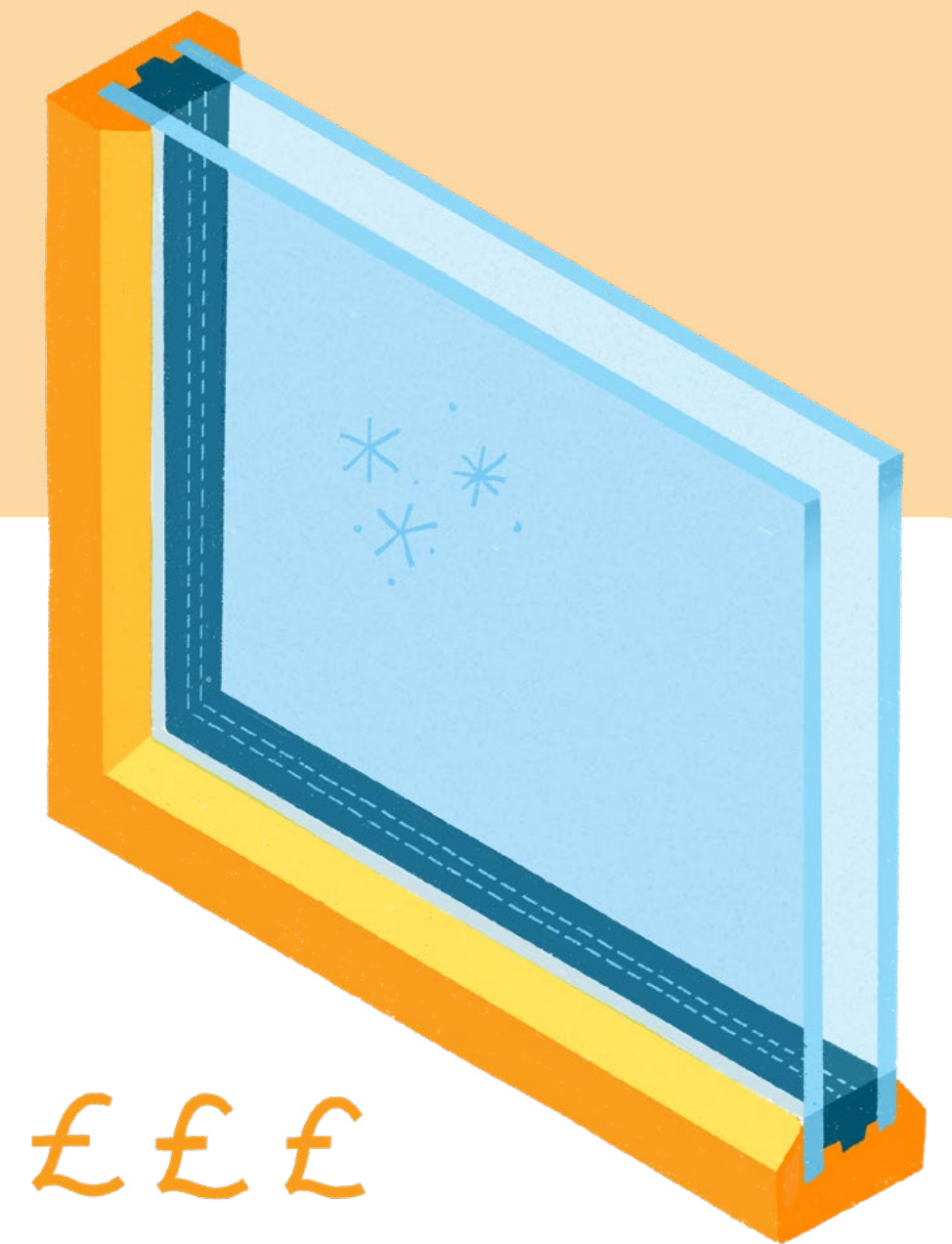


££

Secondary glazing

There are two types. A sheet of rigid transparent plastic fitted to the window frame using magnets, velcro or clips (temporary); or a separate pane of glass and frame fitted behind your single-glazed window (permanent).

- Temporary: £70 per metre, easily removed
- Permanent: £250-£500 per window, requires professional installation



£££

Double and triple glazing

Scottish regulations require all double-glazed windows to achieve a minimum energy efficiency level, so this a reliable way to insulate your premises. Good quality double glazing can be just as effective as triple glazing.

- £500 - 1,200 per window
- Reduces heat loss by 60-85%

When you're ready, look for installers on the [Glass and Glazing Federation](#) website.

STEP 12

Insulate roof, floor and walls



Time: 1-2 days



Cost: Variable

CASE STUDY

CJM Accountancy

Completed an energy-saving retrofit while refurbishing their Ayrshire office in 2021. Director Colin McNally laid roof insulation himself over one weekend. To disturb staff as little as possible, they replaced the lights with LEDs in two days at the same time as the office was repainted.

Your energy audit report ([Step 10](#)) may recommend specific improvements to your building's insulation, which can be paid for using a government grant or loan ([Step 14](#)). For example, cavity wall insulation.

However, there are basic low-cost insulation types that you can install yourself, if you are a competent DIY-er.



Loft Insulation:

This is typically blankets of mineral fibre, laid between the joists. Follow the steps in this [quick three-page guide](#).

- £10-30 per square metre
- Takes a few hours and lasts at least 40 years

Thermal wall lining:

This comes in 1cm-thick rolls like wallpaper. It's glued to the wall with a special adhesive.

- It costs around £8 per square metre
- Can reduce heat transfer through walls by [30%](#)

Thermal carpet underlay:

A sheet of plastic or rubber around 1cm thick, laid underneath carpets or rugs.

- £2-4 per square metre
- Can reduce heat loss by [5%](#)

STEP 13

Explore alternative tech

1-3 Time: 1 week to 3 months

££ Cost: Variable

If your business has more specific heating needs, here are three technologies that you can invest in to help shrink your emissions. If you're not sure where to start, speak to your Business Energy Scotland adviser during the audit ([Step 10](#)).

CASE STUDY

BODYHEAT system

In 2022, Glasgow venue and events space SWG3 installed a system to capture the heat emitted from the venue's (often dancing) visitors. The energy is stored in underground boreholes, before being used to heat or cool the venue later.

Air curtain

Typically used above open doorways, this device blows a stream of air downward that creates a barrier, preventing heat from escaping.

They are relatively inexpensive and are well-suited if you have areas that must be kept open to the outside for prolonged periods, such as warehouses or delivery bays.

Destratification fans

These fans work by circulating a column of air from the ceiling to the floor, helping to keep the entire room at a constant temperature.

They are best suited to rooms with high ceilings, like warehouses, climbing gyms or vehicle repair shops, where heat can collect at the roof level and easily escape.

Heat recovery unit

This device allows you to re-use heat that has already been generated (and paid for). It can be added to an existing ventilation system and can recover 95% of lost heat.

If you have areas with hot equipment – like whisky stills, ovens or washing machines – then this may be an effective way to repurpose that heat energy. They are best suited to properties with relatively good air tightness.



STEP 14

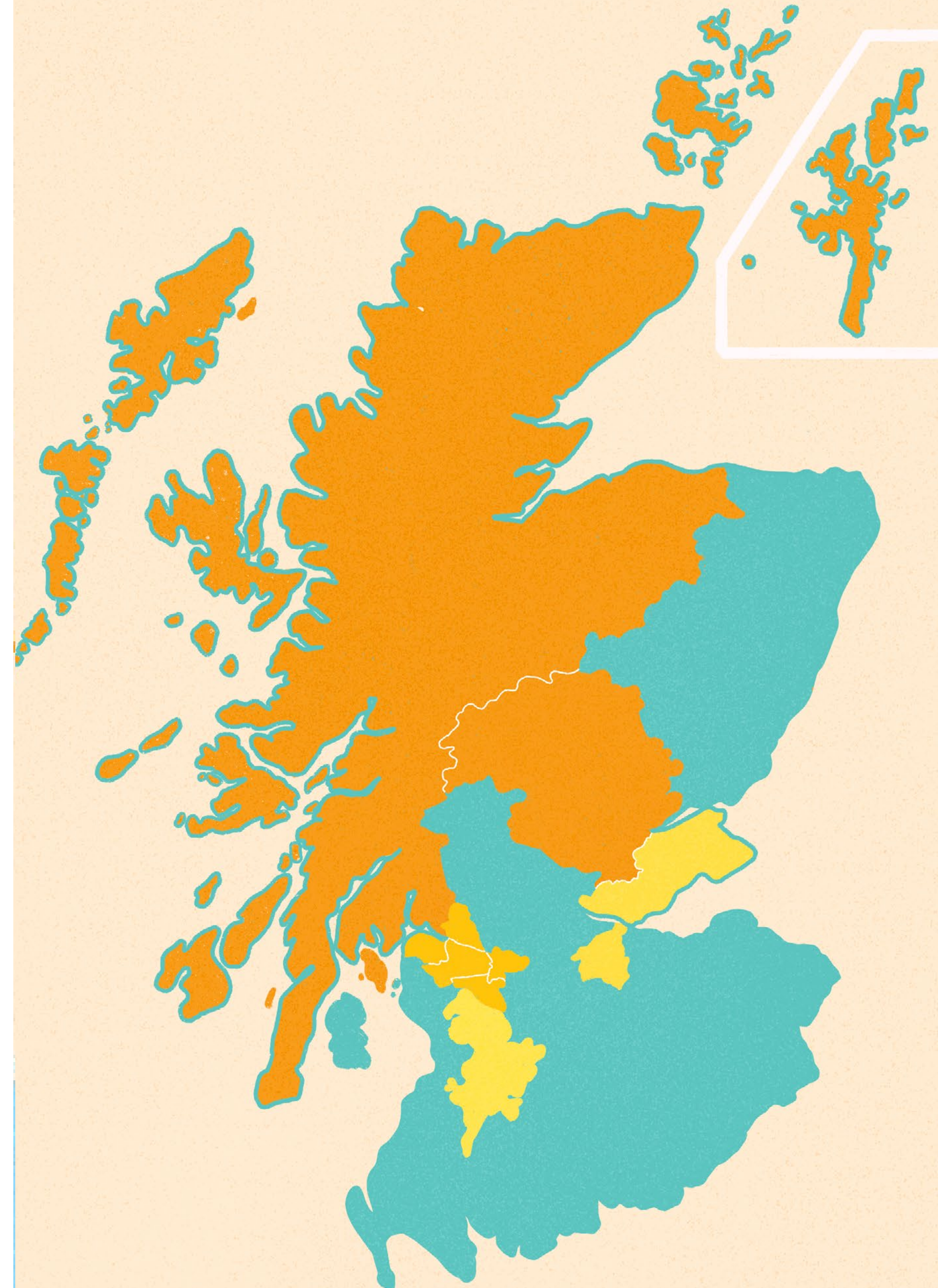
Get funding

 **Time: Ongoing**

 **Cost: £0.00**

The next step on your net-zero journey likely involves investing in technology or upgrades, such as solar panels or insulation.

Here are places you can go to get loans or grants to support:



Scotland-wide

Business Energy Scotland SME Loan Scheme - Interest-free loans up to £100k, grants up to £30k

Highlands and North

- Highlands & Islands Green Grant - Up to £250k
- Perth & Kinross Council Green Capital Development Grant - Up to £25k

East and South

- Fife Council SME Development Grant - Up to £2,850
- Invest in West Lothian Low Carbon & Energy Efficiency Grant - Up to £8k
- East Ayrshire Council Net Zero Support Grant - Up to £3k

Glasgow and West

- Glasgow City Council Green Business Grant - Up to £10k
- East Renfrewshire SBA Get To Zero grant - Up to £10k
- Renfrewshire Council Net Zero Grant - Up to £10k
- West Dunbartonshire Council Towards Net Zero Grant - Up to £10k
- Inverclyde Council Towards Net Zero Grant - Up to £10k
- Renfrewshire Net Zero Workforce Development Fund - Funded training

Check out Find Business Support for a regularly updated list of net-zero funding options.

Future of heat

This section will introduce you to two technologies that will become mainstream over the next few years: heat pumps and heat networks.

Not everyone will be able to swap to zero-emission heating overnight. Some buildings are easier to switch than others.

But don't let that stop you! Lots of businesses in Scotland are already having success, from the [Clydebank Leisure Centre](#) in Glasgow to [Dornie Croft](#) holiday homes in the western Highlands.

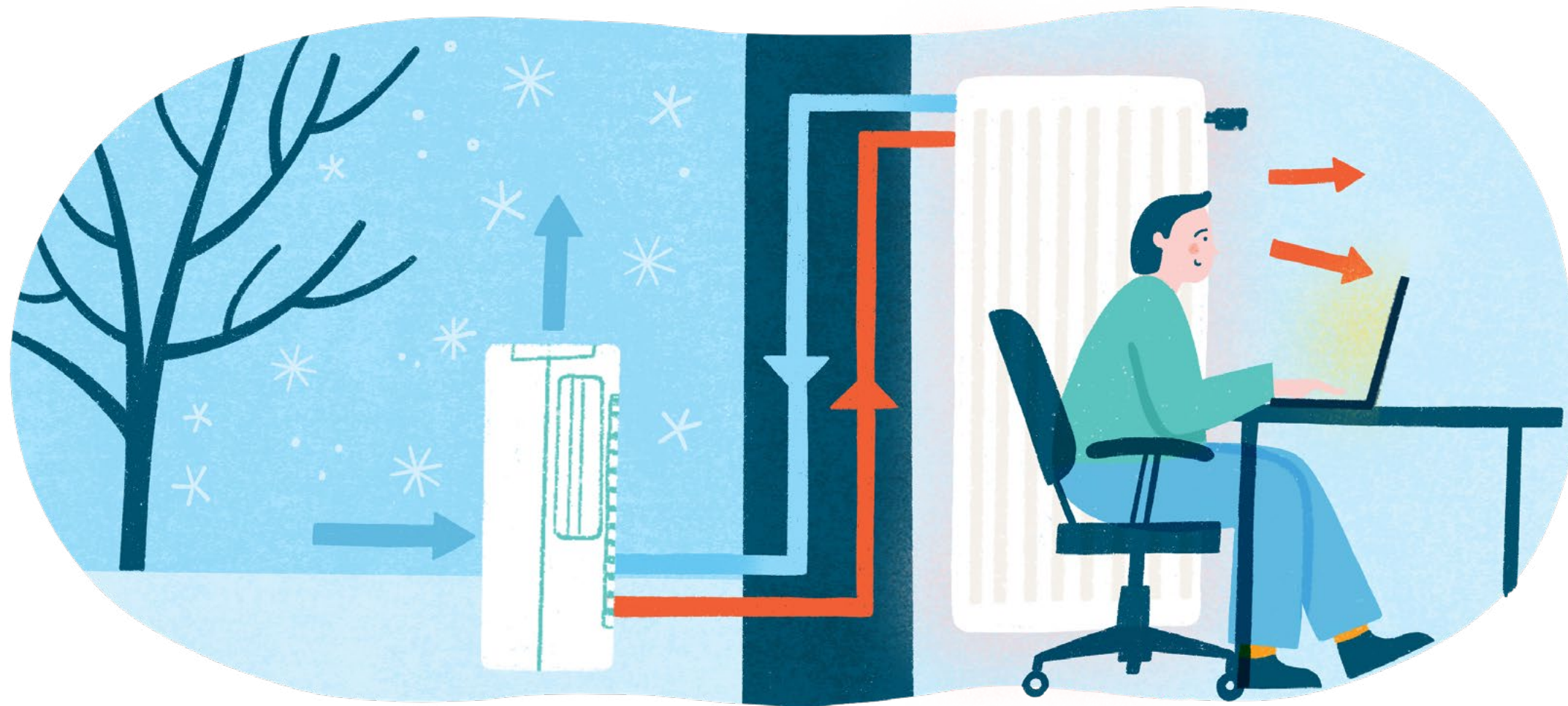
Objectives:

By the end of part three, you will:

- ✓ Understand how a heat pump compares to a gas boiler
- ✓ Know what a heat network is and how they work



Heat pumps



What are they and how do they work?

A heat pump is a heating system that runs on electricity, not fuel.

The heat pump unit is fixed on the outside of a property and works like an air conditioner in reverse. It takes heat from the air, ground or water (even in freezing weather), raises the temperature and uses it to power your central heating and hot water.

They are incredibly efficient – three times more so than a gas boiler.

What is changing in Scotland?

You can expect more regulations that aim to speed up the switch to zero-emission heating.

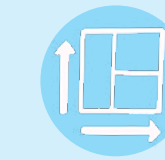
In 2025, the Scottish government will bring forward the 'Heat in Buildings Bill'. Once passed into law, all buildings in Scotland will need to have clean heating, such as a heat pump, by 2045. It will also introduce minimum standards for energy efficiency in non-domestic buildings, which will take effect sooner.



Cost? Around £10,000; more if you have a large premises. Once you have paid back the initial outlay, you will save money on energy bills and your heat pump should last 20 years.



Time? It takes 1-4 days to install a standard air-source heat pump. Ground-source heat pumps take longer as it involves digging to lay pipes underground.



Space? The size of a small fridge. Plus, you will need around 1 square metre of indoor floor space for the hot water tank. You may need to fit larger radiators.



Cosy? Very! Heat pumps take longer to warm your building than a gas boiler but have no problem reaching the same temperature.



Quiet? When properly installed and maintained, they operate quietly with sound levels similar a boiler.

What now?

Speak to [Business Energy Scotland](#) to see if your property would be suitable for a heat pump – especially if you're considering replacing your boiler.

Heat networks

What are they and how do they work?

A heat network is a communal heating system.

Instead of having your own boiler, you and your neighbours are supplied heat via a network of underground pipes carrying hot water. The heat enters each property through a 'heat exchanger', which is about the same size as a boiler. The heat is generated at an energy centre nearby – typically a large heat pump.

This makes heat networks well suited to towns and cities, where many people live in flats or don't have space for a heat pump. A whole neighbourhood can connect to a clean heating source in one go!

What is changing in Scotland?

More than 30,000 homes and 3,000 non-domestic properties already use heat networks in Scotland. This will increase. The Scottish government has set a statutory target for heat networks to supply to 10% of the country's heat by 2035, up from 2% today.

Over the next few years, every Scottish council area will announce new heat network zones. 20 new heat networks are already in active development as of April 2025.

If your property is inside a zone, you will be invited to connect. This will be mandatory for large non-domestic properties.

Energy centre:
Typically, a large air-source heat pump or waste-to-energy plant.

Customers:

You pay for the heat you use, plus a service charge to cover maintenance of the heat exchanger.

Adaptable:

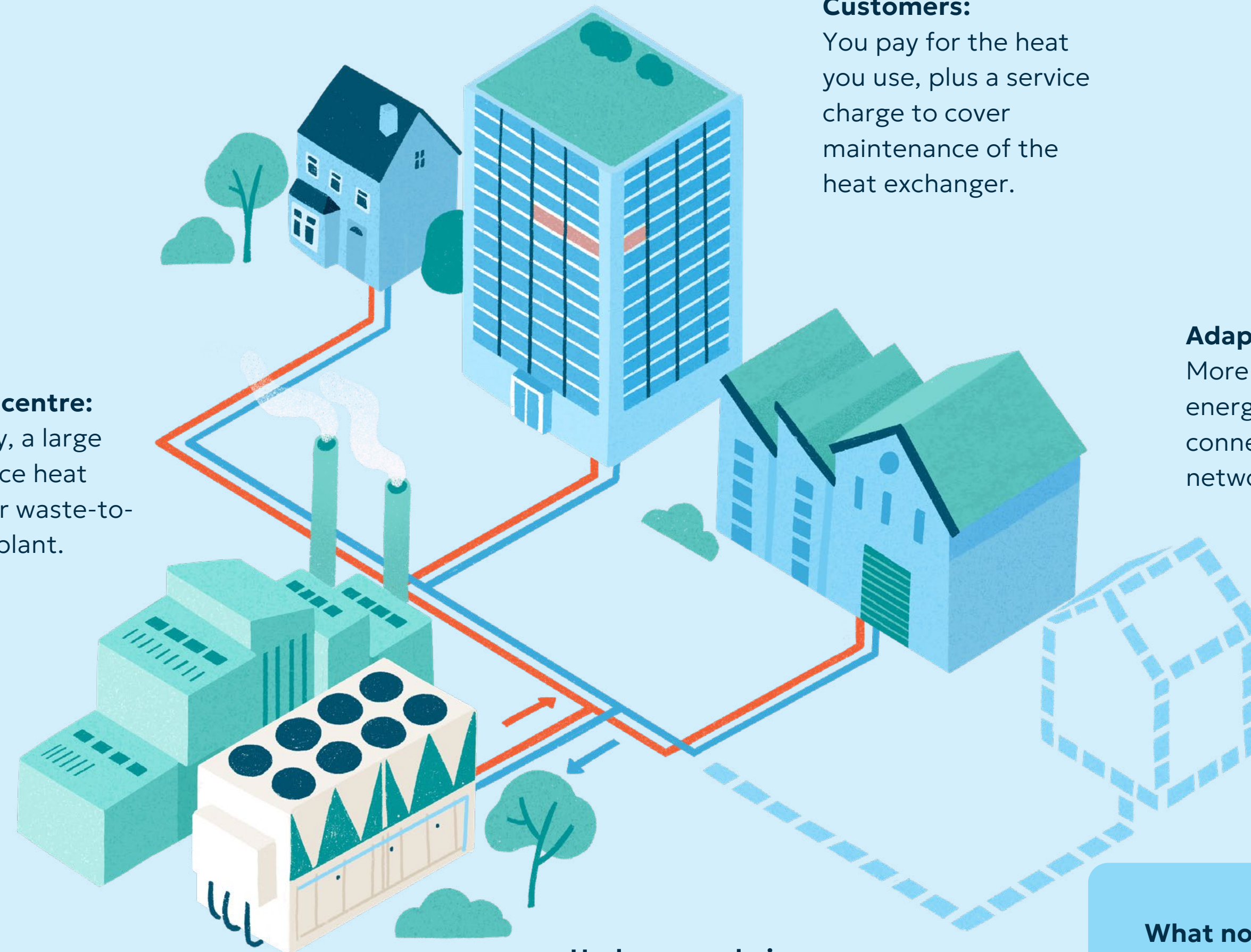
More buildings and energy centres can be connected to the heat network over time.

Underground pipes:

Carry hot or warm water. This isn't what comes out of your taps – it's what 'holds' the heat energy.

What now?

This isn't directly within your control. Look out for when your local council announces where heat networks zones will be. If you are in a rural area, this is unlikely to affect you.

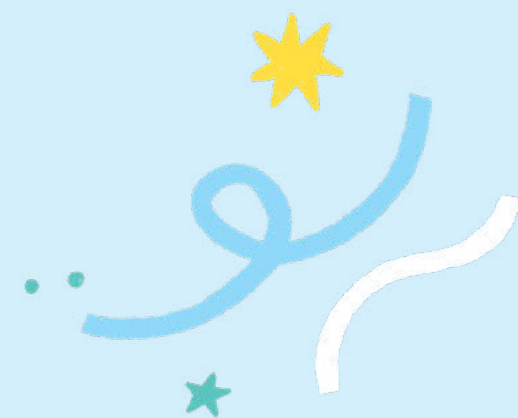




Congratulations!

If you completed all 15 steps, you have substantially reduced your overall electricity use and associated greenhouse gas emissions. Well done!

It's a huge achievement, so take some time to celebrate the hard work of your team.



What's next?



Reward your coworkers

Changing behaviour is hard work. To keep up the momentum, it's crucial to show appreciation for those who have put in the hours.



Make some noise!

Publish a blog, social media post or press release (or all of them!) about what you've done. Be proud of your progress and honest about the challenges.



Create a climate strategy

Drop us an email at climatespringboard@ed.ac.uk and we'll send you a template and advise you on how to get started – totally free.



Keep learning

Sign up to [Climate Springboard](#), a free net zero support programme for Scottish SMEs.



Join our community

Subscribe to our [LinkedIn bulletin](#), where we share blogs, case studies, green policy updates and funding opportunities.

You're in (a) good company

Welcome to a community of 200+ Scottish businesses – of all shapes and sizes – who are committed to reducing their planet-warming emissions.



Case Studies

If you're looking for inspiration and ideas for how to make other aspects of your business more sustainable, read some case studies about the fantastic (and award-winning) SMEs that make up this community.

- **LS Productions:** 'We hope to have a ripple effect across the industry'
- **Lazy Day Foods:** Sweet emissions savings for central belt bakery
- **Pilton Community Health Project:** Edinburgh charity cuts gas use by 25%
- **CJM Accounting:** How an Ayrshire accountancy got serious about climate
- **McLays Foods:** 'Sustainability is the difference between winning and losing a contract'
- **CSG Clean:** Cleaning firm takes climate action, one step at a time
- **Lisini Pub Group:** Green teams save £75,000 on energy in one year
- **East Lothian Housing Association:** The nuts and bolts of switching your staff to electric cars
- **Dornie Croft:** Mastering heat pumps in the Highlands

Tell us your story

We'd love to hear about the successes (and hiccups!) you've had on your net-zero journey since completing Climate Springboard or this guide. Please send us an email if you're open to taking part in a case study. It's a great way to raise your profile.

 climatespringboard@ed.ac.uk