ZERO WASTE SCOTLAND

Energy Efficiency Business Support

How to carry out a successful biomass heating project

Advice and support for organisations in Scotland

Procurement Support Guide: Biomass

European Union

gov.scot

EUROPE & SCOTLAND
European Regional Development Fund
Investing in a Smart, Sustainable and Inclusive Future

About this guide

Many organisations are looking for ways to reduce their energy costs, carbon footprint and exposure to fluctuations in the cost of fossil fuels. Biomass is a good way of doing this as it produces low carbon heat at a reduced cost compared with that for conventional forms of heating. However, with a host of technologies and fuel supply options to choose from, finding the solution that will work best for you can seem daunting.

This guide will help. It gives you clear step-by-step guidance and all the information you need to have informed conversations with potential suppliers. This will help you to avoid common pitfalls and to procure a biomass system that best fits your organisation's needs.

Renewable energy systems that generate heat and have an output of less than 45 kilowatts thermal (kWth) are covered by the Microgeneration Certification Scheme (MCS). The MCS regulates many aspects of suppliers' dealings with their customers – including initial quotes, system design, installation and end-user documentation.

However, while the MCS guidance documents can still be informative if you are considering a biomass system with an output of more than 45kWth, there are more options open to you, such as the type of boiler and which biomass fuel you wish to use. Additionally, it is likely that more calculations will be required for a larger system and more than one supplier will be involved. This means you will have more decisions to make if you are considering purchasing a system with an output of more than 45kWth.

This guide will help you understand the decisions you will have to make so that you are better informed when talking to suppliers.

Step 1

Understand your requirements

The first step is to decide what you need a biomass boiler to do for you. Different organisations use heat in different ways – such as heating premises (space heating), providing hot water or for process heating (drying or in manufacturing). It is important that you understand your needs so that you can identify how best to meet them.

Based on your business plans, it is also important to take into account any ways in which your heat requirement is likely to change in the future. You don't want a system that is larger and more expensive than required, but it is important that it will be capable of meeting your needs over the lifetime of the system.

Your use of heat will also affect how much fuel you use and the amount of income you may receive from the Renewable Heat Incentive (RHI).

With a complete understanding of how you use heat, a supplier will be in a position to design a system that meets your needs, and operates efficiently and reliably.

1.1 Checking your use of heat

It is important to find out how much heat you use and the maximum rate at which you use heat.

How much heat you use

To get a clear picture of how much heat you use, you can look at records of your existing fuel consumption. It is best to have fuel records covering at least one full year. If there have been any changes to your site or operations (such as changes to staff numbers or production output) during that time, these should be noted.

If possible, records for several years will allow a more accurate picture of your long-term fuel use. Your energy consumption will be stated on your bills for electricity or mains gas.

Delivery notes for oil and liquefied petroleum gas (LPG) will state the volume delivered, which will need to be converted into units of energy (for conversion details, visit www.gov.uk/government/statistics/dukes-calorific-values).

If you have half-hourly data relating to your fuel use (electricity and gas), then these can be used to determine the total amount of heat, the peak heat load and the way your use of heat varies throughout the day. This can be very valuable in accurately matching a biomass system to your needs.

The maximum rate at which you use heat

You also need to know the maximum rate at which you will use heat so you can determine how big a system you need. The maximum rate at which a system uses heat is referred to as the peak heat load and is measured in kWth.

Your existing boiler will most likely have a rating plate that states the maximum rate at which it can supply heat. However, it is unlikely that this will be exactly the same as your existing peak heat load. This is because boilers are often selected to have a greater heat output than the peak heat load of the system they serve. Boilers also vary in their efficiency at converting the energy in the fuel to heat and different types of boiler need to be operated differently to maximise their efficiency. For example, most biomass boilers need to operate for long periods between 30% output and 100% output to get best efficiency.

On some sites, such as hospitals, there may be several boilers installed, each one of which can fully supply the peak heat load. This configuration ensures that there is always a back-up boiler ready to supply heat in the event of a failure or during maintenance. In buildings where demand fluctuates significantly, such as hotels, multiple boilers may be installed that are all required to meet the peak load. In this situation, boilers operate at maximum efficiency and are turned on and off to match the demand. Therefore, it is not possible to know exactly what your peak heat load is simply by adding up the ratings of your boilers.

Even if the boilers were sized to meet your peak heat load exactly, which is unlikely, your use of heat may have changed since your boilers were installed. That said, the heat output of your boilers can be a useful indication of the size of system you need when you are speaking to suppliers.

Separate peak heat-load calculations should be done for space heating, hot water and any process heating requirements. These, together with the heat demand variations over time, will give the overall peak heat load of the system.

When calculating the peak heat load for your space heating requirements, a supplier will estimate the average internal temperature required and minimum external temperature anticipated. This is usually 20°C for the internal temperature and between -3°C and -10°C for external temperature, but will vary depending on the location of the site. It is important that you are aware of any unusual requirements that your property has, such as needing an internal temperature of 26°C or having premises in a location exposed to very low temperatures for long periods. This calculation can often be done by a supplier providing a detailed quotation, but you may need a heating design engineer to specify this for you. Such an engineer may be listed by the Chartered Institution of Building Services Engineers (CIBSE).

It is common practice to install a biomass boiler with a maximum heat output that is lower than peak requirements and have a back-up heat source (such as a gas boiler) to provide top-up heat during times of maximum load. Installing an oversized biomass boiler will result in poor fuel efficiency and reliability problems leading to high running costs.

Also, as biomass boilers can take hours to heat up from cold or to cool down, most systems are used in conjunction with an appropriately sized thermal store or buffer tank. This contains a large volume of water, usually several thousand litres.

Buffer tanks and thermal stores can be used in different ways to maximise the efficiency of the system or to make the system more convenient to use. A buffer tank absorbs excess heat from the boiler and releases this heat during periods of peak demand.

A thermal store can be heated over a period of hours by a relatively small boiler to supply a large peak demand. An example would be a school heating scheme where there is a large peak demand from 5am to 9am, but a relatively small demand once the school is occupied.

A thermal store can also be heated over a couple of hours by a large boiler to meet a smaller load over several hours. An example would be heating a thermal store in the morning with a log boiler which then supplies heat for the remainder of the day. This is referred to as 'batch burning'. This minimises the number of times per day that the boiler needs to be manually fed.

It is important that the biomass boiler and buffer tank or thermal store are sized specifically for your system, in conjunction with one another and with the system that will control them.

1.2 Your existing distribution system

Most buildings use a system that operates at less than 100°C, this is referred to as low temperature hot water (LTHW). If you do not state otherwise, it is likely that a supplier will assume that to be the case for you.

LTHW systems can be pressurised or open vented. A pressurised system is sealed and the pressure is increased to between 1 bar and 2 bar. They use a tank, known as an expansion vessel, to absorb the expansion of the water and keep the pressure in the system constant.

Open-vented systems are not sealed, have an open vent and a cold water storage tank at a high level (for example, in a roof space). As the system changes, it can dissipate any excess pressure through the vent. The pressure in the system is only hydrostatic pressure, dependent upon the difference in elevation from the cold water tank to the lowest point in the system. It is important to be aware if your system is pressurised or open vented.

Some heating systems (particularly very large installations, older buildings or production facilities) can use water at between 100°C and 120°C. This is known as medium temperature hot water (MTHW). MTHW systems operate at higher pressures, so a boiler designed for LTHW cannot be used on a MTHW system.

Any solid, liquid or gas that is used to convey heat away from a source is referred to as the 'heat medium'.

In addition to LTHW and MTHW, the most common heat media are:

- high temperature hot water (HTHW) – this usually refers to systems that use water above 120°C;
- steam, which is often used at high pressure and found in large systems such as those found in hospitals; and
- thermal oil is used instead of water to distribute heat at higher temperatures and is often found in large industrial systems for process heating.

Boilers that generate heat are designed specifically for a certain heat medium. If your site uses anything other than low temperature hot water (LTHW), it is important to be aware of this and inform potential suppliers.

Collate any operation and maintenance manuals that describe the design of your current system – in particular, any drawings you may have. These will allow a supplier to get a clear picture of how your system works, which should reduce the number of assumptions they have to make. As these assumptions would be used in the quotation, the less there are, the less likely there will be unexpected/additional costs included.

1.3 Operational requirements

Compared with oil or gas boilers, biomass boilers require more manual input to:

- Unload fuel deliveries to your fuel store.
- Move fuel from your store to a hopper or directly into the boiler.
- Clean heat exchangers – all biomass boilers require periodic cleaning, the frequency of this depends on the design. It is possible to have a system that can operate for a month or more without any input, but there are systems that require attention several times a day.
- Remove ash – all biomass systems require ash to be removed for disposal. On some systems, this just involves removing a canister and emptying it. On simpler systems, this may involve scraping out the ash manually.

While systems that require more manual input tend to have lower capital and fuel costs, they may have higher labour costs. On the other hand, although automated systems cost more, they may still offer significant labour savings and be more suitable for organisations where labour costs are higher or where heating is critical to processes, such as in manufacturing production lines.

It is important to consider how much manual input is acceptable to your organisation.

1.4 Financial requirements

You need to understand exactly what your financial requirements are.

- Capital availability – how much can your organisation spend, including any limits on borrowing?
- What financial return do you require? This could be a maximum payback period or an internal rate of return (IRR).

If you are unable to cover the investment in a biomass project from your own funds, then contact us for details of the main sources of finance available for such purposes. Alternatively, download the free guide 'Sources of finance - How to fund your resource efficiency projects' from our website.

Case study
Boat Hotel

Situated in Boat of Garten in the Cairngorms National Park, the family-run Boat Hotel has 34 rooms, a bar and a bistro. It also hosts large meetings and events that hold up to 65 guests at a time.

During a free, comprehensive, resource efficiency review at the hotel, one of our local Implementation Advisors recommended that the oil-fired boiler that provides heat and hot water should be replaced by a biomass boiler.

The new boiler could be fired with locally sourced wood chips or wood pellets with the final choice depending on the system size, local availability and costs for delivery.

By installing a biomass system at the Boat Hotel to provide all of the hotel's heating and hot water, it was estimated that annual heating costs could be reduced by over £16,500.

In addition, income from the RHI, which provides funding support for every kilowatt-hour (kWh) of renewable heat generated for 20 years, would provide another £24,000 a year.

Download the full case study from our website

Step 2 Confirm what is technically possible

There are many types of biomass boiler that are suitable for different situations. This guide considers solid biomass boilers only; it is possible to burn liquid biofuels, but these are not considered here.

Wood pellet boilers

These are the most commonly used biomass boilers. Wood pellets are produced to a number of standards, the most common of which is EN Plus A1. They are made by grinding wood into small particles, drying it and compressing it into pellets. Since these pellets have a uniform size, quality and moisture content (usually around 10%), they can be handled easily by automated systems and are the most straightforward to operate of all biomass boilers. The downside is that wood pellets are more expensive than other types of wood fuel, such as wood chips.

Wood pellet stores can have a v-shaped base so that the pellets fall naturally to the bottom. An augur then takes the fuel to the boiler. Wood pellets are delivered into the fuel store pneumatically or manually tipped from bags (for smaller systems only).

Wood chip boilers

Boilers that burn wood chips are often very similar to those that burn wood pellets. There are even models of boilers that can burn both. Wood chips are produced by chipping wood to a prescribed size and drying it to a prescribed moisture content (for example, below 35%). Wood chips can vary in size more than wood pellets and it is sometimes possible for large slivers of wood (for example, 30cm) to slip through. Because wood chips have a greater variation in moisture content and size compared with wood pellets, wood-chip boilers tend to have more operating problems than wood-pellet boilers.

It is possible to purchase biomass boilers that burn fuel at high moisture contents. This means that the fuel does not need to be dried before it is burned. However, these systems tend to have outputs of more than 500kW and are often used at poultry farms or sawmills.

Handling wood chips requires more machinery than that required for handling wood pellets. They cannot be stored in a fuel store with a v-shaped base as they form overhangs and voids. Instead, most systems use a rotating arm to push fuel onto a conveyor.

Delivering wood chips is also less straightforward than wood pellets. While some suppliers can deliver wood chips pneumatically, this requires specialist equipment, which is different to that for delivering wood pellets pneumatically, and not all suppliers have this capability. Wood chips are most often tipped from a lorry. Receiving deliveries in this way requires a ramp to support a lorry above the fuel store, machinery on site to take fuel into the store or a walking-floor mechanism. The latter two options are expensive and tend to be suitable for sites that use a large amount of heat.

Wood chips are also less dense than wood pellets. This means that, for a given amount of energy, a larger volume of wood chips is consumed than wood pellets. Therefore, a wood chip store needs to be much larger than a pellet store for the same amount of energy stored.

For most sites, the decision will be between wood pellets and wood chips. Wood chips are a cheaper fuel than wood pellets, but the boiler and fuel handling equipment needed are more expensive to buy, take up more space and are more likely to encounter problems.

Log boilers

Wood-log boiler systems use simpler technology and are less expensive than systems that use wood pellets or wood chip, but are significantly more labour intensive. Instead of fuel being supplied automatically from a fuel store, they are manually placed into the boiler. The boilers often need to be cleaned manually and generate more ash.

Fuel also needs to be stacked and transported manually, rather than using automated systems.

However, the advantage of log boilers is that they are cheaper to buy and the fuel is often cheaper too. The cost of any labour required to operate them must be accounted for.

Straw boilers

These are limited to agricultural properties where straw is produced and whole bales are handled regularly. The space and equipment required to store, transport and handle bales of straw make these systems unsuitable for most sites.

Case study
Fintry Sports and Recreation Club

Fintry Sports and Recreation Club is located in the heart of the village of Fintry in Stirlingshire.

The building was heated by an oil-fuelled system. However, in 2011, the Club began building a bespoke boiler house consisting of a fuel silo with a rotating agitator, auger and a 150kW boiler. The total cost of this project was £75,000. The boiler is fuelled by woodchip sourced in nearby Callandar Estate. The system hopper is 40 cubic metres and this lasts three weeks in winter and around two months in summer. The Club pays 5 pence for each kilowatt hour (kWh) which includes servicing for the system.

Combined with other resource efficiency improvements (such as double glazing and insulating external walls) the biomass installation has contributed towards a 30% fuel cost saving and a noticeable increase in general comfort.

Download the full case study from our website

2.1 Is your site suitable for biomass?

It is important to check whether it is technically possible to have a biomass system at your site and determine if there are any restrictions on the technologies that you could select. Below are the key things you should consider.

1. **Is your site in an air quality management area?**

   These areas are where emissions are very strictly regulated. For biomass boilers, this often means additional flue-gas abatement measures, which are likely to make the system uneconomic. More information can be found at the Air Quality in Scotland website (www.scottishairquality.co.uk/laqm/aqma).

2. **What space do you have?**

   Biomass systems can take up significantly more space than oil or gas boilers, especially once fuel storage and buffer tanks are considered. For example, a 200kWth biomass system would typically have a footprint of around 3m x 9m (including fuel store). Therefore, it is important to make sure you have the required space available for the type of system you are considering.

3. **Is there sufficient access to site for deliveries of fuel and equipment?**

   It is important to make sure your site has adequate access for fuel delivery vehicles. Most fuel suppliers would be willing to visit your site to confirm that the access is sufficient for their vehicles.

   It is important you make yourself aware of width, height and weight restrictions that may limit access to your site.

4. **Are there planning restrictions?**

   It is likely that planning permission will be required for parts of the system. For example, there may be some visual intrusion from the flue stack, biomass plant room or fuel store.

   Flue gas emissions will also need to meet the requirements of the local environmental health officer (EHO). In addition, the EHO will most likely want to ensure that any emissions are sufficiently dispersed at nearby locations where people will be present (such as at ground level or at a window in a nearby building). It is important that an assessment is made of the flue height that will be required for the site. The presence of tall buildings, trees or other structures may mean that the height of the flue has to be increased.

   It is worth contacting your local council's planning department to find out what information you need to provide and what you are required to do. The planning department may also be able to inform you of any sensitivities you may need to consider about your proposed site (such as noise emissions and visual intrusion).

Step 3 Check fuel cost and availability

Before embarking on a biomass project, you should check:

- if there are suppliers of biomass in your area;
- what types of fuel they supply;
- that they will be able to gain access to your site for deliveries;
- how much they charge for fuel; and
- if there is any discount for larger deliveries (over 10 tonnes) – this can be factored into your choice of fuel store.

The RHI requires operators of biomass boilers to prove that their fuel is sustainable. The most straightforward way of doing this is to purchase fuel from a supplier on the Biomass Suppliers List. You should ask suppliers if they are on the list or if they are in the course of applying. If you use fuel that is not on the list, then you will be required to submit a quarterly report containing detailed information on the source of your fuel.

Alternatively, the National Biofuel Supply Database (www.woodfueldirectory.org), which is owned and managed by the Forestry Commission, is a very useful source of information on potential suppliers.

Biomass boilers are sensitive to the moisture content of the fuel used. Wood pellets are dried to a specific moisture content, usually around 10%, but wood chips can be anything up to 50%. It is important to find out what your suppliers are capable of providing reliably, so that you can pick an appropriate boiler. Boilers capable of burning fuel with a moisture content of more than 35% tend to be very large and can be significantly more expensive to purchase, but fuel with a high moisture content can be much cheaper.

It should be noted that there is a risk with storing wood fuel with a high moisture content because it can start to compost and self-combust (guidance on this issue can be found at www.ieabioenergy.com/publications/health-and-safety-aspects-of-solid-biomass-storage-transportation-and-feeding/).

When comparing the cost of different fuels, it is important that you are aware of the moisture content and account for it – 1 tonne of wood at 25% moisture content has 1.5 times the amount of energy in it as 1 tonne of wood at 50% moisture content.

If you intend to source fuel from your own land, such as wood chips or wood logs, it is important to be aware of how you propose to dry and handle the fuel, and be aware of any costs you will incur.

Step 4 Initial discussions with suppliers

By now, you should have a good idea of what you want from the biomass system in terms of:

- ease of operation;
- savings;
- how much money you have to spend;
- how much heat you need and how you use it;
- what space you have available for plant; and
- an understanding of what fuels you can source.

The next step is to discuss your options with a number of suppliers. This will help you narrow down your options and decide which systems are the most appropriate for your site.

There are many suppliers with extensive experience of biomass systems who are able to quickly assess the likely cost and viability of a given technology on your site. Using this experience from a number of suppliers can be very valuable in narrowing down exactly which system is best for you and your site.

Your dealings with a supplier will be considerably more fruitful if you have some idea of what your requirements are, as set out in the previous steps. Many suppliers will provide an estimate of costs and an outline proposal free of charge. They will want to visit your site to fully understand your particular situation and to give them the opportunity to raise any significant issues.

4.1 Finding suppliers

If you know someone who has recently undertaken a biomass heating project, ask if they would recommend the supplier they used. We can also help put you in touch with local suppliers.

Alternatively, the Green Network for Businesses website has information on a range of organisations that have already carried out projects to reduce their energy, water, waste and raw material costs. Through the website, you can learn about these projects and arrange to visit an organisation near to you so you can see and discuss what they did first hand.

Step 5 Decide what you want

Once you have proposals from a number of suppliers it is important to review them so you can make an informed comparison of your different options. The objective is to narrow down your options so that you can seek detailed quotations from several suppliers. The experience of suppliers can be very important in determining what is best for your site and obtaining any approval needed from your organisation's senior management. It is particularly important to compare fuel and fuel handling equipment as this has a very significant impact on the costs and financial returns of a system.

You should review and compare each proposal and consider:

- the capital cost of buying the system and installing it – this must include all works to ensure a complete and operational system, including any enabling works that you have to undertake or are excluded from suppliers' costs, such as planning approval or building works;
- operating costs – this should include maintenance, repair, any additional labour to operate the system and the operating cost of any additional plant required (such as vehicles for moving fuel around);
- fuel cost; and
- income from the RHI.

A number of companies offer contracts to maintain the boiler and supply fuel in return for a fee. This is usually payable per unit of heat delivered rather than a flat fee. This arrangement ensures that it is in the supplier's interest for the system to be operating as much of the time as possible.

Step 6 Obtain quotations

By now, you should have a clear idea of the type of system you are going to purchase and be ready to request detailed quotations. For larger or more complex systems, it is important that you prepare a specification. This is usually done by a design engineer with experience of biomass systems.

For smaller systems, it may be appropriate to rely on your supplier to complete the design. In this case, it is important to state clearly what you need the system to do for you when it is operating and what they should consider during installation. Below are the types of information you should share.

- **Timing**

  Timing can be very important so that the impact on other activities is minimised. You will need to specify the time window for the work to be done, by when it needs to be completed and any limits on operating hours. You may wish to consider including penalty clauses in your contract so that you can recover any costs to your organisation from works overrunning.

- **Site-specific requirements**

  Requirement such as running checks with Disclosure Scotland, ATEX [1] restrictions (for explosive atmospheres) or site rules that may have an impact on the way suppliers work.

- **Health and safety**

  What specific health and safety issues does your organisation have that could affect the project cost or length (for example, restricted access to certain areas).

- **Heat requirements**

  As discussed in section 1, you should share your peak heat load, estimated annual heat load, and boiler and buffer capacity.

- **Operational requirements**

  What level of automation you require on the boiler – in particular, fuelling, cleaning the heat exchanger and removing ash.

- **Boiler specification**

  You should know the moisture content of the fuel you can source reliably. It is important to be aware that Ofgem will check the maximum moisture content your boiler is certified for on the emissions certificate provided by an independent test body, not what the manufacturer states. This is particularly important if you are burning wood chips or wood logs.

  Different boiler types have different sensitivities to changes in fuel quality. Most manufacturers will tell you what percentage variation is possible without recommissioning. The more variance allowed, the fewer problems are likely to be encountered. Share any information you have from local fuel supplies on the potential variation.

- **Control system**

  Specify what you have on site and what you need the new control system to do. For example, do you have a building management system that controls your existing boilers and does the biomass boiler need to be connected into it. Many control systems can turn on and off a number of boilers including the biomass boiler and backup oil or gas boilers. Such systems can determine when the biomass boiler is supplying sufficient heat on its own and when a backup boiler needs to be turned on. They can also start another boiler if the biomass boiler fails, minimising the disruption you experience.

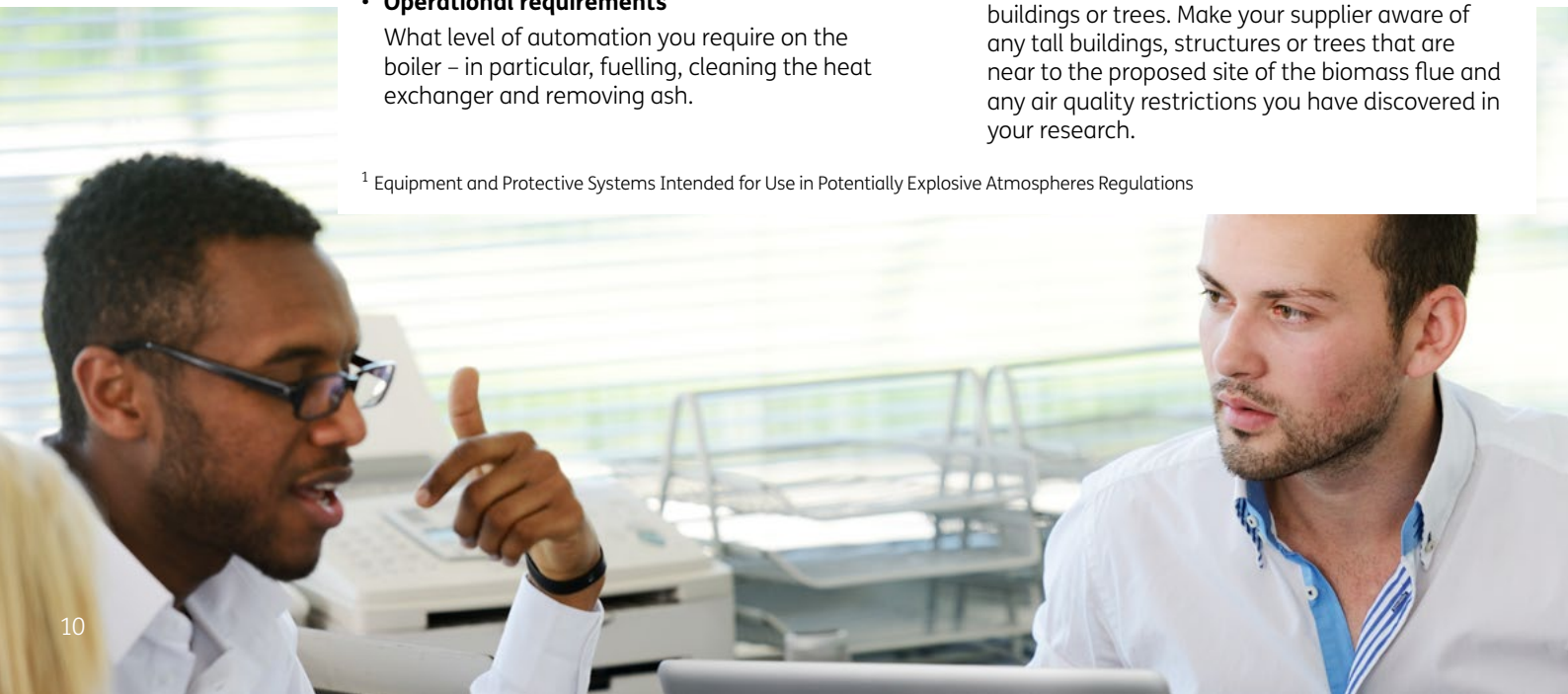
- **Fuel store capacity**

  What kind of storage will you have and how much fuel will it be able to hold.

- **Flue size**

  Are there planning restrictions you need to share? The flue height should be based on site inspection by a specialist, taking into account adjacent buildings or trees. Make your supplier aware of any tall buildings, structures or trees that are near to the proposed site of the biomass flue and any air quality restrictions you have discovered in your research.

[1] Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations



Step 7 Review quotations

As ever, one of the most important aspects of any quotation is the price. However, when you are buying a biomass system you need to find out how the various systems compare to your actual needs. Therefore, you should review each quote against your specification developed in Step 6. Check each quote to ensure suppliers have quoted on what you asked for. And, if not, ask why – they may have a good reason.

You should also check the following.

- **Exclusions –** it is essential that you are aware of and seek quotations for any work that is not included in the price.
- **Assumptions –** go through the quotation and check assumptions. These are often overlooked, but form the basis of how the supplier has arrived at the design of system that is the subject of the quotation. If a supplier's assumptions are wrong, the system may be wrong too.
- **System design –** if you are relying on a supplier to design the system, then check how they have designed the system and compare it with designs from other suppliers.
- **Aesthetics –** is the proposed system something that you would be happy with outside of your building?
- **Guarantees –** it is important to find out how long the guarantee is on all equipment and workmanship. Any moving parts, such as electric motors and gearboxes (especially those inside the boiler or fuel delivery mechanism) are particularly important as these are the most likely to fail.
- **After-sales support and servicing –** many installers provide extended guarantees or servicing agreements. Compare what different installers offer and find out if they have engineers close to your premises so that, in the event of a failure, you have the rapid support you need.
- **References –** check out examples of their previous work and speak to customers who have used them before. It is also worth finding out online if anyone is experiencing problems with that supplier. It is not uncommon with any technology to have some teething problems, but it is important to know that your installer will sort out any problems that you encounter.

Step 8 Finalise internal business case and obtain approval

Once you have accurate costs from suppliers, it is important to produce your business case, which will be used to gain approval for internal and external funding.

Accessing finance is often a major barrier to the successful implementation of resource efficiency projects and, ultimately, the business benefits that these projects can deliver. This is particularly true for small and medium-sized enterprises (SMEs).

If you need to access finance, our free guide 'Accessing finance – Developing a business case for your resource efficiency projects' will help you. It will show you how to prepare a robust business case to support your proposed investment decision and how to present a strong case for investment to your senior management or external lenders. It can be downloaded from our website.

When developing your business case, ensure that you confirm any assumptions made at an earlier stage, such as fuel costs or additional labour required. Sites with similar systems can be very valuable sources of information that is otherwise difficult to obtain – in particular, any additional labour required.

If your system is over 200kW, you can seek preliminary approval for the RHI. If this is granted, it will provide some assurance to your organisation that the RHI application will be granted, provided that the system is installed as described and meets any conditions applied by Ofgem.

Step 9

Apply for planning permission

Before ordering the system, you need to ensure that you have the appropriate planning permission in place. This can take some time, but it is important that you know exactly what your system will be and have sufficient design detail to prepare drawings required for a planning application. The permissions can be limited to a new flue or could be for the construction of a new plant room, fuel store and flue.

By contacting your local planning department staff at an early stage in your project (as outlined in step 2), you should have a good idea of what information you require. As soon as you are certain that your design is agreed, then you should consider applying for planning permission.

There may be other permissions required for your site and it is important that these are in place before placing an order.

Step 10

Order and install

So, you are now finally ready to go, you have the permissions you need and you know which system you are purchasing. You can now place the order.

As with any project, creating an accurate project plan is key to success. With a biomass system, it is important to include any disruption to your organisation and how this can be mitigated. It may be necessary to turn off the heat and prevent access to parts of your site, and there may be additional noise or dust.

This is also the time to finalise any other agreements such as organising the fuel supply and maintenance.

Once the system has been fully installed you can apply for RHI if you haven't done so already. If you have sought preliminary approval, then there may be additional documentation to be supplied to Ofgem once the system is fully operational.

Additional advice and support

Zero Waste Scotland's Energy Efficiency Business Support Service helps Scottish businesses to cut their energy costs by an average of 24%. Each year over 34,000 individuals from a range of organisations get in touch with us for impartial advice and free, specialist consultancy support.

Supporting Scottish organisations to be more energy efficient and reduce their carbon footprint will make a significant contribution to addressing the climate emergency and helping achieve the Scottish Government's strategic economic objectives as well as climate change and energy efficiency targets.

Funded by the Scottish Government and the European Regional Development Fund, the service offers free advice and technical support as well as sharing best practices and new technologies.

We're here to help.
Call us on 0808 808 2268
Email: EnergyEfficiency@zerowastescotland.org.uk
Visit: www.energy.zerowastescotland.org.uk

ZERO WASTE SCOTLAND

Energy Efficiency Business Support

European Union

gov.scot

EUROPE & SCOTLAND
European Regional Development Fund
Investing in a Smart, Sustainable and Inclusive Future