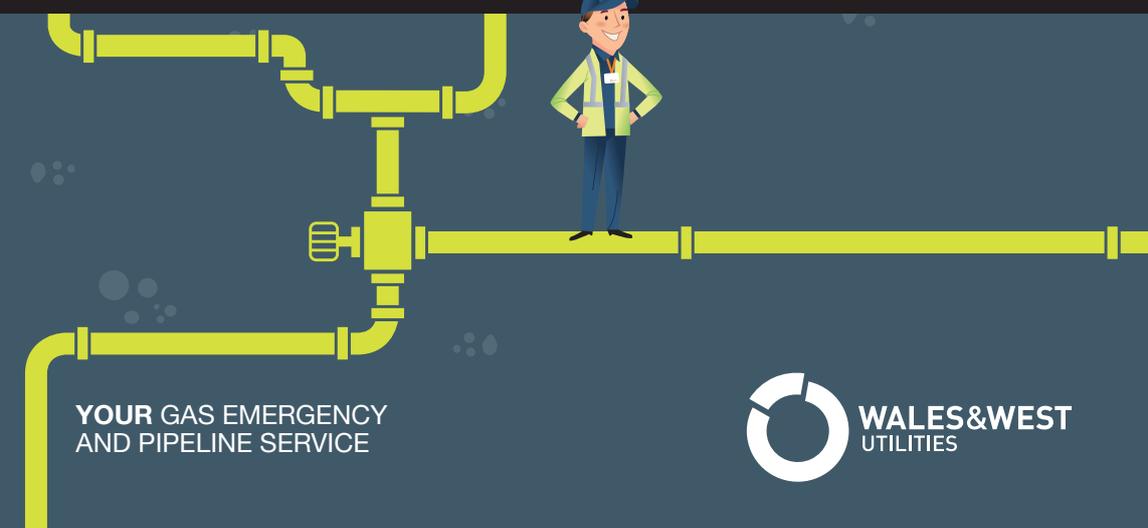


Your energy Our network

Using our gas network
for your biomethane gas



**YOUR GAS EMERGENCY
AND PIPELINE SERVICE**



**WALES & WEST
UTILITIES**

Bringing your gas to our network

Find out how your renewable gas production can become part of our safe and reliable gas supply in Wales and the south west of England. It may look complicated, but we have created a step-by-step guide to help you.

Your step-by-step guide

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Step

1

Get in touch

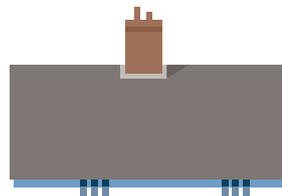
First, fill in an enquiry form to tell us about your biomethane gas facility. This will include:

- **enclosing a site location plan;**
- **giving us your postcode and co-ordinates; and**
- **giving details of how much biomethane you think you will produce.**

We'll find the nearest suitable network connection point and work out whether there's available capacity to take your gas. This takes 15 working days. There's no charge and our response to your enquiry is valid for 90 days.

Get your enquiry form here:

www.utilities.co.uk/yourgasournetwork



Step 2

We do a study

We'll send you a capacity study agreement with our response to your enquiry form. If we think your plans will work and you want to go on to the next stage, you'll have to sign and return the agreement.

There is a fee to complete the study. Check our website for the current price at www.utilities.co.uk/yourgasournetwork

After you've made a payment, we'll complete the study and send it to you within 30 working days.

The study will give you:

- confirmation that we have space for your gas in our network; and
- seasonal and daily demand profiles at the connection point.

This study is valid for 180 days.



Step 3

Book it in

We'll send you a capacity booking letter along with the capacity study. To continue with the application, just sign and return it. We'll then set aside the capacity we've offered you in our network.

Important: we'll expect you to give us evidence of progress with your development within 180 days. At this point, we will review your capacity booking.

Step 4

You plan, we assess

Next we assess your proposal. We have to check over all designs to make sure they meet industry regulations.

Design assessment

To be approved, your design must meet the following standards.

- **IGEM/TD/16** Biomethane injection. This covers the requirements for building and operating facilities that allow biomethane into a gas network.
- **IGEM/TD/17** Steel and polyethylene (PE) pipelines for biogas distribution. This provides guidance on installing biogas pipelines.

HAZOP assessment

Safety is everything to us, so we have strict rules about any equipment that is connected to our gas network. You will carry out a full hazardous and operability assessment (HAZOP) to make sure all risks are assessed and controlled. This is usually done by an independent company, with an expert from our company. No gas will be allowed to flow into our gas network until this study has been completed – with any recommended changes put into practice.

GEU assessment

The grid entry unit (GEU) is the equipment used to test and control the flow of biomethane into our network. The unit must meet lots of industry standards, including:

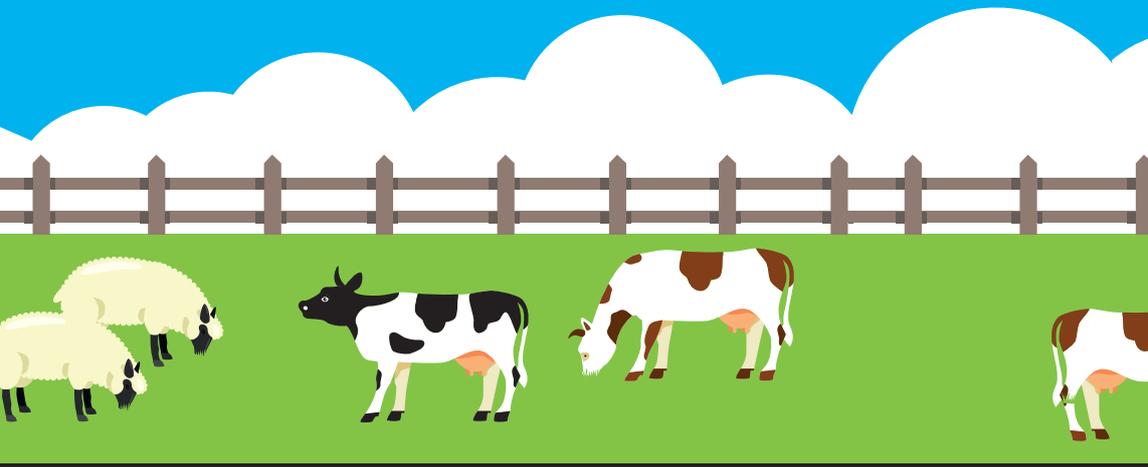
- **IGEM/TD/13 Edition 2 Pressure regulating installations for Natural Gas, Liquefied Petroleum Gas; and**
- **the Pressure Systems Safety Regulations 2000 (PSSR).**

Risk assessment

We also need to complete a risk assessment relating to gas quality, calorific value and measuring the flow. You, your project designer and one of your engineers will need to oversee this process, known as a GQ/8 Workshop. This is vitally important and must be completed early in the design process, so that there's clear information about the quality of the gas you're planning to supply. The GQ8 procedure provides a structured approach to identifying risks. If we identify a significant risk, we will recommend a solution to reduce or get rid of the risk.

While we will not take any responsibility for the design of your installation, this process will help you to get it right.





Step

5

Think about pressure

Gas in the UK network is kept under pressure. There are four levels of pipe pressure:

- high pressure: more than 7 bar;
- intermediate pressure: more than 2 and up to 7 bar;
- medium pressure: more than 75 mbar and up to 2 bar; and
- low pressure: up to 75 mbar.

In general, the higher the pressure, the more gas can be held in our system. As a result, it's often better for a biomethane producer to connect to a high-pressure gas pipe as there's a greater chance that there'll be available capacity. However, the cost of connecting to a high-pressure pipe can be considerably more than for those of lower pressure.

All connections below 7 bar can be done through a utilities infrastructure provider (UIP) which is listed in the Gas Industry Registration Scheme (GIRS). This certified contractor can lay gas pipes and connect to our network. Or, you can ask us to make the connection. Either way, we will help you through the necessary steps.

If you are connecting into a gas pipe which is above 7 bar, you will need to fill in a gas entry connection form, which you can find at www.utilities.co.uk/yourgasournetwork

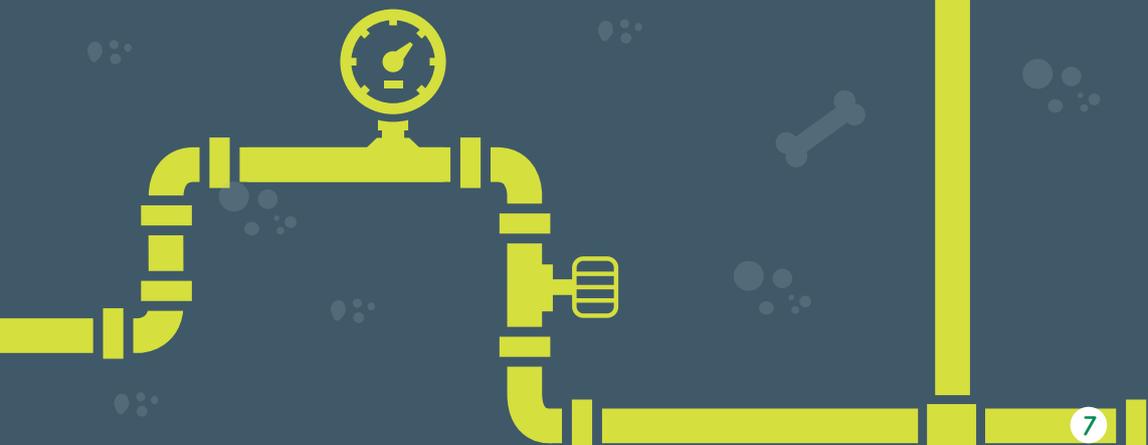


Gas quality

The grid entry unit (GEU) has equipment which checks that your gas meets all standards and regulations before it can enter our gas network. You must deliver gas which keeps to:

- the Gas Safety (Management) Regulations (GS(M)R);
- the Gas Calculation of Thermal Energy Regulations (GCOTER); and
- the Uniform Network Code (UNC) and the Network Entry Agreement (NEA).

The gas must also meet any other gas-quality requirements, as identified in the GQ8 assessment and shown in the Network Entry Agreement (NEA).



The equipment you'll need

The equipment you'll need varies, depending on the quality of gas being injected into our network, the clean-up technology needed, and any site-specific requirements. Most injection facilities need equipment for the following.

Production and clean-up. The gas may need some refinement to allow it to meet our gas-quality requirements.

Enrichment. Where there are any shortfalls in the calorific value of the gas, propane can be added.

Gas-quality monitoring. The energy content of gas being injected into our gas network needs to be measured and recorded. The calorific value must match our requirements.

Metering. The volume of gas needs to be measured and recorded.

Odourisation. The gas needs to be given its distinctive smell.

Pressure control. This makes sure that gas pressure is always correct, to allow it to be safely injected into our gas network.

Remotely operable valve (ROV). This will be owned and operated by us. It will stop the flow of gas into our gas network if gas quality or safety issues arise.

Telemetry and telecommunications. These are essential to send data from the injection facility, for billing and other operational purposes.

Wales & West Utilities connection model



The main points related to who owns the equipment

We will not provide or install any equipment. It's your responsibility to make sure all equipment is installed to the correct standards.

This includes equipment for:

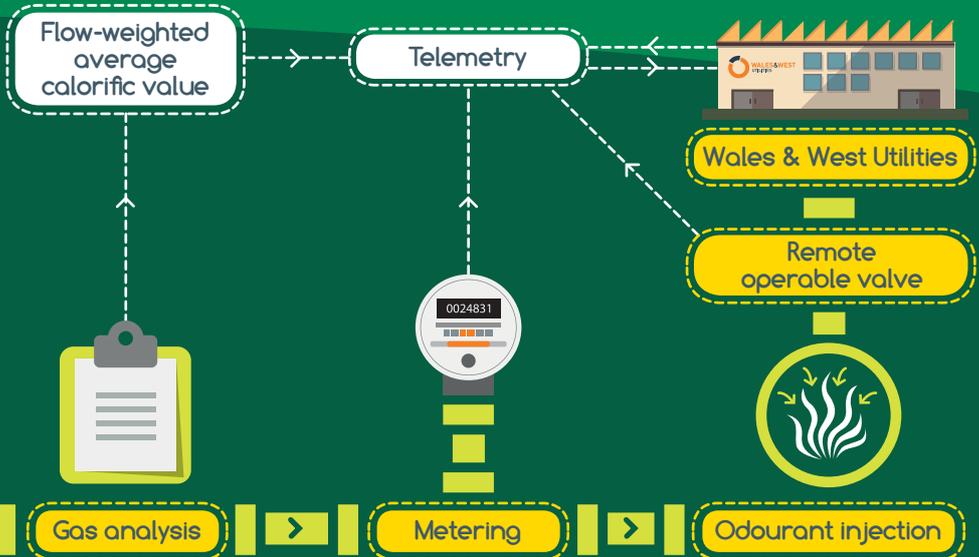
- **metering;**
- **monitoring the gas quality;**
- **measuring the energy content;**
- **giving the gas its specific smell;** and
- **the remote telemetry unit (RTU).**

After it is installed and is working we will own:

- **the remotely operable valve (ROV).**

You will need to take account of the main connection model.

You will own and be responsible for the equipment that injects your gas into our gas network.





Step

6

Agreements and approval

Network Entry Agreement

As well as requirements for the physical connection, we and you must sign a Network Entry Agreement. You should also make sure that appropriate arrangements are in place to keep to licensing requirements.

The typical NEA will give:

- the point of entry (shown on a diagram);
- plant and equipment, and who owns it;
- responsibilities for maintaining and operating equipment;
- a gas-quality specification;
- measurement arrangements;
- ongoing charges; and
- local operating procedures (LOPs).

The LOPs cover such things as:

- giving notice of the intended gas flows;
- confirmation of the actual gas flows;
- site security;
- managing flow rates, pressure and gas quality;
- emergency arrangements; and
- maintenance arrangements.

Agreement with a licensed gas shipper

As a producer, you'll need to have a commercial agreement with a gas shipper. These companies buy gas on wholesale markets and sell it to retail suppliers. Gas shippers pay the gas distributors (like ourselves) to transport their gas to the end users. You will be paid a feed-in tariff by your shipper. The feed-in tariff will depend on the contract between you and your shipper. As well as this, you may also be able to apply for the renewable heat incentive (RHI), a scheme backed by the Government.



You'll need to have an agreement with a licensed gas shipper in place.



Letters of Direction & Approval by Ofgem

These letters will give you the date you can switch on the supply and form legal agreements about using the equipment for deciding on the calorific value. It will give the operational requirements for the calorific value analyser and associated equipment.



Step 7

Testing, testing

As the producer, you must make sure that we are told about dates for all factory acceptance tests (FAT) for the grid entry unit (GEU), so we have the option to be there if we want. This will also apply to the site acceptance test (SAT).

Commissioning your plant will need to cover:

- **all of the mechanical and electrical installation;**
- **formal calibration and sign-off of the fiscal metering system;**
- **completing all the SAT testing;**
- **performance and reliability assessment; and**
- **necessary HAZOP workshops to make sure that safety is considered throughout the production process.**

Final stages

When the network entry agreement (NEA) mentioned in step 6 has been finished and signed off by both you and us, you will have permission (depending on certain conditions) to inject gas into our network. Opposite is a timeline of what has to happen before your gas can join the network.

Timeline

What?	Why?	When?
Telemetry input and output (IO) schedule	To identify the telemetry points needed for monitoring and control.	At least six weeks before the first gas flow.
Put together site data for billing	The main information to allow us to set up billing systems.	At least six weeks before the first gas flow.
Ask for ISO 10723 test	This tests the accuracy of the gas analyser.	At least six weeks' notice to schedule the test.
Details of Ofgem sample point to us	Photo, address and sample point.	At least four weeks before the first gas flow.
Request for Direction	Formal request to Ofgem.	At least two weeks before the first gas flow.
Ofgem gas examiner site inspection	To confirm the official Ofgem sample point meets the specification.	At least two weeks before the first gas flow.
Factory acceptance testing (FAT)	Assurance and functional testing.	Before GEU is delivered to the site.
ME2 test	Check the accuracy of the fiscal metering.	Before GEU is delivered to the site.
ISO10723 test	Tests the accuracy of the calorific-value measurement by the gas analyser.	At least 2 weeks before the first gas flow.
Network entry agreement	Legal document to set out key responsibilities.	To be completed before the first gas flow.
Issue of letter of direction	Ofgem gives permission to the site to allow the flow of gas into our network.	Must be before the first flow date but after the ISO10723 test.
Calibration tests	Compulsory 35-day and daily gas-analyser calibration tests.	First activity on the day of the first gas flow.
Site acceptance testing (SAT)	Assurance and functional testing.	To be completed before the first gas flow.

Step 8

And we're done!

You must deliver the documents relating to your project on time before your gas will be allowed to flow into our network. We'll also hold a project completion meeting with you and your representatives, to confirm that everything's in order.

It's a complicated process, but we hope this guide has helped you to understand the main steps you'll need to follow. If anything's not clear, just get in touch.

We're here to help.

 www.wwutilities.co.uk

 greengas@wwutilities.co.uk

 02920 278567

For more information on the Renewable Heat Incentive (RHI) policy, or for a guide to getting renewable gas into our gas network please see the Department of Energy & Climate Change (DECC) website – www.decc.gov.uk.

Glossary of terms used in this document

Calorific value (CV)	The amount of heat energy released when burning a set amount of gas, measured in units of energy per unit of gas.
Distribution network (DN)	One of the four regional gas distribution networks in Great Britain. These include low-pressure pipelines which take gas from the high-pressure, long-distance national transmission system.
Factory acceptance test (FAT)	This is a functional test, at the point of factory production.
Fiscal metering	Highly accurate measurement of the volume of gas entering the distribution network for billing purposes.
Flow-weighted average calorific value (FWACV)	This is the average calorific value in a charging zone for a given day and is used for billing purposes.
Local operating procedures (LOP's)	Procedures specific to your operation that describe the activities needed to carry out tasks in line with industry regulations, standards or our conditions. Any document that is a how to guide falls into this category.



Gas analyser

Highly accurate and specialised equipment used for measuring the calorific value of gas.

Gas Safety (Management) Regulations (GS(M)R)

The Gas Safety (Management) Regulations 1996 (SI 1996 No.551) deal with managing the safe flow of gas through Great Britain's gas networks. The main aim is to make sure the system is safe, by protecting the security of supply (especially to domestic consumers), and by making sure the safety standards of emergency services provided by the gas industry are followed.

Gas transporters (GTs)

These provide the pipelines through which gas is transported across the country to end-users. This is a licensed activity, and it is regulated by Ofgem.

Grid entry unit (GEU)

This is part of the equipment that helps to inject gas into the Network. The equipment also gives the gas its smell and makes sure it is the right pressure.

Health and Safety Executive (HSE)

The HSE is responsible for protecting against the risks to health or safety arising out of work activities. It does this by dealing with and enforcing relevant health-and-safety laws.

National transmission system

The high-pressure, long-distance part of National Grid's transmission system for gas, which is made up of more than 6,600 kilometres of steel pipeline operating at pressures up to 85 bar.

Network Entry Agreement

Sets out the technical and operational conditions for a connection and is needed under the Uniform Network Code (UNC).

Ofgem (Office of Gas and Electricity Markets)

This is the government body that supports the Gas and Electricity Markets Authority, which is responsible for regulating the economy of the energy (gas and electricity) markets.

Producers

These produce the gas that enters the network.

Remotely operated valve (ROV)

These valves are for quick isolation in case of an emergency. They can be operated remotely (away from site).

The renewable heat incentive (RHI)

This incentive programme is run by DECC (Department of Energy and Climate Change), a government-funded body.

Shippers

These make arrangements with gas transporters to transport their gas through GT pipelines. This is a licensed activity, regulated by Ofgem. More broadly, shippers have agreements with producers to bring gas into the gas transportation system.

Site acceptance test (SAT)

These are functional tests that are completed on site.

Telemetry (RTU)

This is a wireless way of sending and receiving information from the site for the purpose of monitoring them.

Uniform Network Code (UNC)

A common set of rules for transporting and trading gas, which forms the back bone of effectively operating Great Britain's competitive gas market.

Useful contacts

Government

Department of Energy & Climate Change
www.decc.gov.uk

Department for Environment, Food and Rural Affairs – www.defra.gov.uk

Department for Communities and Local Government
www.communities.gov.uk

Health & Safety Executive
www.hse.gov.uk

Ofgem – www.ofgem.gov.uk

Other useful contacts

Lloyd's Register – www.lr.org

Trade associations

Association of Electricity Producers
www.aepuk.com

Association of Independent Gas Transporters – www.aigt.org.uk

Association for Organics Recycling
www.organics-recycling.org.uk

Energy Networks Association
www.energynetworks.org

Environmental Services Association
www.esauk.org

Renewable Energy Association
www.r-e-a.net



Wales & West Utilities

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