

SHAPING THE FUTURE OF UK GAS RENEWABLES

A guide to creating a greener future for the UK Energy market with the injection of renewable gases into gas grids



Honeywell

SMARTER, CLEANER ENERGY FOR THE UK GAS NETWORK

The UK's transition from conventional energy to renewables is accelerating, driven by ambitious national net zero goals and rapid expansion across clean technologies. Nowhere is this momentum clearer than in the UK renewable gas sector, which has grown from a niche contributor to a major force in today's energy landscape.

The renewable gas industry has expanded significantly in recent years, with capacity growth of over 150% since 2015, positioning renewable gas as a cornerstone of the UK's low-carbon future. As the UK moves toward its net-zero target by 2050, natural gas continues to play a vital role in providing reliable and secure Energy supply. To successfully transition to a sustainable energy system, it is essential to integrate biomethane and renewable gases into the existing UK gas networks seamlessly. Implementing innovative grid entry solutions will support a cleaner, more flexible, and future-proof energy system.



INJECT CONFIDENCE INTO YOUR GRID

Turnkey renewables solutions provide grid operators, hydrogen and biomethane producers, and integrators with reliable, safe and compliant solutions for injecting renewables into the gas network.

The UK gas sector needs standardised solutions that significantly lower the cost of biomethane and hydrogen injection facilities when compared with bespoke solutions.

Simple solutions are required that nevertheless answer the complex challenges involved in renewables injection:

- Custody transfer flow metering
- Gas quality analysis, including measurement of impurities such as oxygen and hydrogen sulphide contaminants not always quantified in natural gas, but common in biomethane
- Pressure control and compression, as required
- Conditioning: propane injection and mixing, where needed to increase heating values
- Protection against unacceptable blend ratio's

- Recycling of off-spec gas
- Full compliance with all relevant national and international regulations

Systems must be fully customisable to include all components required, including integrated controls, flow meters, gas chromatographs, odourisation stations, particle filters, valves, network telemetry equipment, and anything else required to meet industry standards, local regulations, and the needs of the gas grid operators.

TRUSTED PROVEN SOLUTIONS

Honeywell was a pioneer in both the UK and Germany biogas industry, providing one of the first commercially built Biomethane grid entry unit (GEU) in the country. Today, this has grown to over 300 renewable injection systems operating across Europe.

That includes more than 200 compact biomethane injection systems supplied to one of the largest distributors of natural gas in Europe.

Honeywell's established renewables solutions are built on decades of experience across Europe and globally in gas metering, quality analysis, pressure control and custody transfer.

We draw on one of the most comprehensive portfolios in the natural gas industry, with industry-leading flow meters, gas chromatographs, flow computers, pressure regulators, PLCs, and odourisation systems. Supported by a worldwide network of engineers with extensive experience working closely with local system integrators and, where required suppliers of third-party devices.



RAPID UK GROWTH

- Biomethane to Grid (BtG): The biomethane to grid sector has seen spectacular growth
- In 2012, around 300,000 therms were injected into the gas grid; by mid-2016, this increased to around 120 million therms/annum, producing 3.5 TWh per year ¹
- The sector's capacity doubled between 2017 and 2025 ¹

REFERENCE

1. europeangashub.com. 20 June 24

ENGINEERED FOR THE UK GRID

Honeywell is the UK's leading provider of biomethane grid entry solutions, helping decarbonise Britain's gas network by converting household, agricultural and industrial waste into renewable energy. Our systems support the equivalent energy needs of over one million homes through direct biomethane injection into the UK gas grid.

Built to meet UK regulations, our injection stations deliver proven reliability, high availability and a compact, cost efficient design suitable for UK sites. With precise control of pressure, quality and flow, they can also include conditioning and LPG blending to meet pipeline heating value requirements.

Honeywell's prefabricated grid entry systems come in multiple configurations, including three and five compartment options, enabling fast installation and dependable performance nationwide.



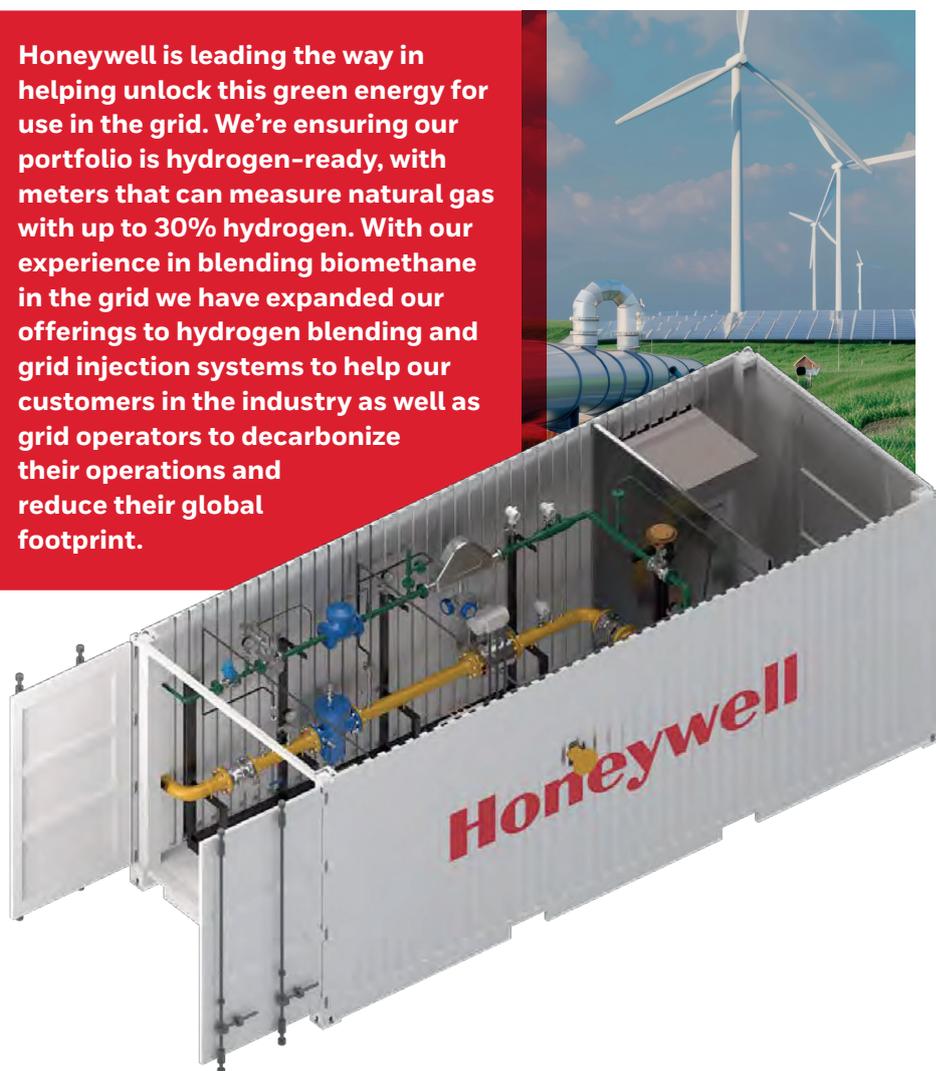
HYDROGEN INJECTION: UNLOCKING GREEN ENERGY

Moves to add hydrogen to natural gas pipelines can significantly accelerate the move to sustainable energy. Power to gas technology can convert excess electricity from renewable sources or resulting from grid limitations into hydrogen.

It can also harness wind or solar energy to produce hydrogen from water using electrolysis – green hydrogen that can be captured, stored, transported and reused. But also hydrogen produced from fossil sources combined with Carbon Capture Storage can be used to replace fossil fuels and is a contribution to carbon emissions reduction.

The move to hydrogen poses challenges for gas measurement technology. Traditional natural gas chromatographs cannot detect hydrogen. For the low concentrations normally found in natural gas pipelines that's not a problem, but, with injection of hydrogen into the grid, it's a critical failing point. EnCal 3000 E-Gas solution will accurately measure Hydrogen in combination with the normal natural gas component.

Honeywell is leading the way in helping unlock this green energy for use in the grid. We're ensuring our portfolio is hydrogen-ready, with meters that can measure natural gas with up to 30% hydrogen. With our experience in blending biomethane in the grid we have expanded our offerings to hydrogen blending and grid injection systems to help our customers in the industry as well as grid operators to decarbonize their operations and reduce their global footprint.



H2 GRID INJECTION MADE EASY

The grid injection system is designed to inject hydrogen into distribution as well as transportation gas grids.



The system is designed to operate continuously and is packed in standard sea-containers for easy transport and fast deployment into the field. The system exists of the following functional parts

- Hydrogen pressure reduction (if required)
- Hydrogen flow metering line
- Flow control system controlling the hydrogen flow
- Natural gas metering line
- Fast Gas Quality Measurement system of incoming natural gas
- Static blender for comingling of Hydrogen and Natural gas
- Gas quality measurement of blended gas
- Fire and gas detection
- Flow computer system
- Metering and blending control systems including RTU / Telemetry
- Cyber secure remote monitoring system



Accurate flow measurement of both the Hydrogen stream as well as the natural gas stream is key for an accurate blending process. Based on flow ratio we control the hydrogen flow into the natural gas stream and using accurate gas quality measurement the result of the blending is validated.

By measuring the heating value of the natural gas stream it is possible to calculate the maximum amount of Hydrogen that may be allowed to be injected while maintaining the allowable Wobbe-index range of the blended gas.

By standardising the injection system and pre-packing it in a standard sea-container cost savings are realised while delivery times, installation and commissioning duration are shortened, allowing for more rapid project turn around.

A POWERFUL PORTFOLIO

Honeywell's renewables systems are built on our industry-leading devices and decades of experience in the natural gas market. We offer a broad portfolio of products delivering reliable operation, powerful performance and a low cost of ownership.

As a leading provider of Intelligent Metering Solutions, we help customers worldwide improve revenue, reduce operating cost and enhance customer service through a market-leading portfolio that includes ultrasonic flow meters, rotary meters, turbine meters, gas quality analysers, pressure regulators and flow computers.

Our metering solutions minimise uncertainty, maximise reliability and boost efficiency to build better businesses. Combining the most advanced features, with flexible options tailored to wide-ranging applications, and a lower cost of ownership – backed by decades of experience.

Offering the best performance in the business, we're constantly pushing the boundaries. Already our meters can measure natural gas with 20% or even 30% hydrogen. Preparing for the future, proven today, our solutions help you keep with the flow.



GAS ANALYSIS



Honeywell's state-of-the-art gas chromatograph. Designed for natural gas energy measurements, it's been specially adapted to measure all main components of biomethane, including H₂,

O₂ and H₂S, and is approved by the PTB, LNE and OFGEM for use in metrologically approved metering systems. For the optional measurement of hydrogen, the EnCal 3000 uses Argon as a second carrier gas. EnCal 3000 biogas version uses different analytical columns specifically selected for the application.

The oxygen present in the sample must be separated from the nitrogen, which is best handled with a molesieve column.

Molesieve columns are particularly sensitive to water and CO₂, which are removed using special filter cartridges inside the gas chromatograph's housing.

Encal 3000 H₂: To accommodate for hydrogen in the gas network we developed the EnCal 3000 H₂ version. It measures up to 20% of hydrogen in natural gas and can be used to control a blending process of hydrogen and natural gas.



GASLAB Q2

Honeywell's fast acting gas analyser which is used in Biomethane applications to condition the gas heating value by adding propane.

Because of its extremely fast response time of <5 seconds it is an excellent device for control applications that require a faster control loop than any gas chromatograph can offer.

In the grid injection systems the GasLab Q2 can be used to give a fast update of the heating value of the measured gas allowing for accurate admixture of propane, calculation of allowable levels of H₂ blending and prevention of injection of off-spec gas to the gas grid.



Q SONIC MAX6

Honeywell's gas flowmeters that are used for measurement of the natural gas or biomethane flows in our injection solutions. Depending on the process condition a turbine-, rotary- or ultrasonic flow meter will be selected.

Important aspects in selecting the right flowmeter type are the requirements for turndown ratio, pressure rating and aspects related to pressure drop and meter robustness. With our extensive meter portfolio there is always the optimal solution available.

Combined with our volume corrector from our EK series, Mercury product line or flow computer FC series, the gas measured will be converted to standard conditions for custody transfer purposes..

Where applicable metrological approvals like PTB, OFGEM and LNE are available to comply with local regulations.



OMNIPOINT™

OmniPoint™ – Flexible, Multi-Gas Detection Platform is a versatile, intelligent transmitter engineered to support up to three sensors for detecting toxic, flammable, and oxygen hazards in hazardous locations. Designed to simplify installation and maintenance, OmniPoint™ features a full-colour LED display, touch-key interface, and Bluetooth®-enabled operation for streamlined configuration and field service.

Employing multiple sensor technologies, OmniPoint™ adapts to a wide variety of industrial gas-monitoring needs, making it an ideal solution for facilities transitioning to new gas blends, renewable-energy processes, or modernised safety architectures. The intelligent sensor-module design lowers lifecycle cost by allowing replacement of only the sensor cartridge rather than the full assembly.

Id conditions, OmniPoint™ operates in extreme temperatures from -55°C to 75°C, with flexible mounting options and robust 4–20 mA, relay, HART®, and Modbus communication outputs for seamless integration. Its scalable platform supports industries including utilities, power generation, and wastewater—offering deployment flexibility even in regions with evolving certification requirements.

With intuitive operation, strong environmental performance, and multi-sensor capability, OmniPoint™ delivers a modern, future-ready gas-detection solution designed to meet diverse safety challenges across Europe's growing renewables and gas-blending infrastructure.





SEARCHZONE SONIK™

Honeywell's Searchzone SONIK™ is an advanced ultrasonic gas leak detector designed to identify airborne ultrasonic signatures generated by high-pressure gas releases. Unlike point gas detectors that must come into contact with a gas cloud, Searchzone SONIK™ responds instantly to the sound profile of escaping gas, providing rapid detection of hazardous leaks in challenging industrial environments.

Certified for Zone 1 and Zone 21 hazardous areas (ATEX, IECEx, cULus), Searchzone SONIK™ delivers robust performance using a stainless-steel housing with marine-grade coating, dual cable entries, and an installer-friendly adjustable mounting system. Integrated Bluetooth® connectivity enables configuration and maintenance through the Searchzone SONIK™ App, supporting secure AES128-encrypted communication from a safe distance.

A unique Focus Mode reduces nuisance alarms from background noise, improving reliability in high-activity or acoustically complex areas. The detector outputs 4–20 mA with HART® and Modbus® as standard, with event logging for comprehensive traceability. Optional testing accessories—including an intrinsically safe handheld test unit—allow fast, ground-level validation with no calibration required.

With proven compatibility across Honeywell controller platforms, Searchzone SONIK™ offers a highly reliable, low-maintenance solution to protect personnel, assets, and operations from dangerous high-pressure gas leaks.



FX20X PLUS

The Honeywell FX20X Plus is a next-generation multi-spectrum flame detector engineered for fast, accurate detection of hydrocarbon fires across demanding industrial applications.

Designed to enhance safety performance while reducing false alarms, the FX20X Plus uses advanced infrared sensing and intelligent signal processing to reliably identify flame signatures—even in harsh environmental conditions.

Its rugged construction, wide operating temperature range, and immunity to weather, sunlight, and hot process backgrounds make it a trusted choice for high-risk sectors such as energy, chemicals, hydrogen production, and heavy manufacturing.

The FX20X Plus offers multiple outputs—including 4–20 mA, relay contacts, Modbus, and HART®—enabling seamless integration into existing safety systems.

Optimized for fast response times at long distances, the detector provides high sensitivity without compromising stability. A suite of self-diagnostic checks ensures operational readiness, minimizing maintenance requirements while supporting continuous facility protection.

With global certifications and Honeywell's proven optical flame-detection platform, the FX20X Plus delivers reliable fire safety performance for modern renewable-energy and gas-blending infrastructure.



STAY CONNECTED WITH HONEYWELL CONNECTED OEM

With a future ahead of us where an increasing amount of distributed assets will have to be managed, operated and maintained it is crucial to be able to monitor the health and performance of your systems in the field.

Honeywell Connected OEM gives the connectivity and visibility into the grid injections systems to identify the performance and potential issues that may arise from component failures, faulty operation, inadequate maintenance practices, changing conditions or increasing loads. It will enable you to prevent and resolve issues more quickly, cheaply and effectively.

Connected OEM gathers data from sensors on equipment across sites using Honeywell's ControlEdge™ PLC and RTU controllers.

It's then securely transferred to the Cloud through an intermediate modem or smart gateway.

Leveraging our proven Experion platform, it offers a secure, scalable and continually improving solution. Once there the data is stored in the historian and users can draw on a range of Honeywell analysis and visualization tools.



FIELD INSTRUMENTS & AUTOMATION PORTFOLIO

Designed for reliable operation, ease of use and a low costs. Market-leading SmartLine® transmitters are used worldwide for highly accurate pressure and temperature measurement, including in high-end custody transfer applications.

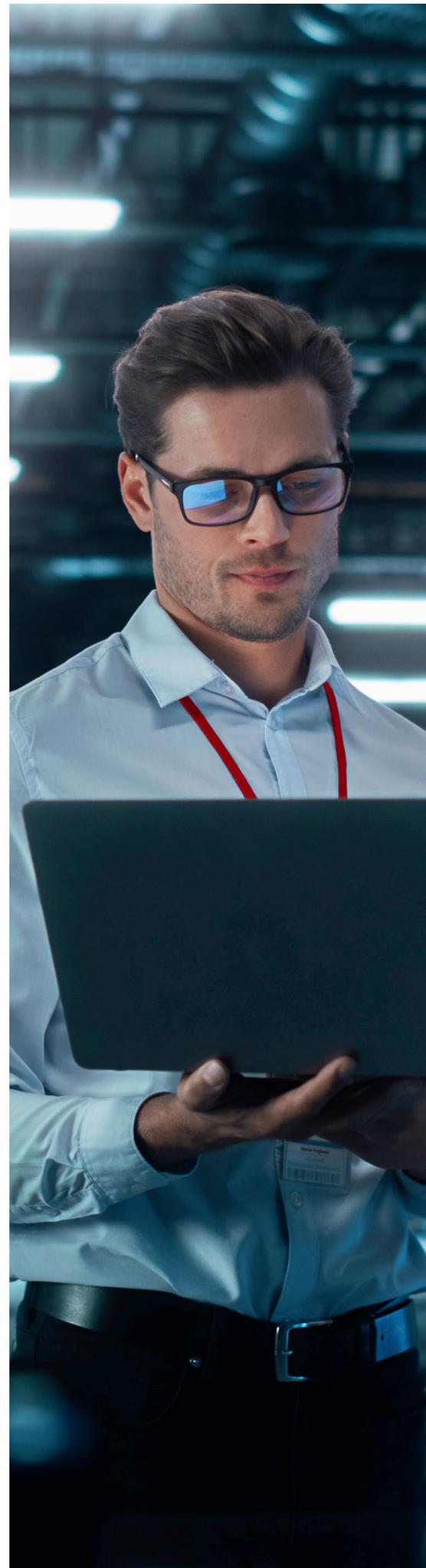
For measurement in Hydrogen our pressure transmitters make use of gold plated diaphragms. With MID approvals, the transmitters offer a fast response time, predictable linear stability and features such as advanced diagnostics and tamper alerts.



ODORISING SYSTEMS

To ensure a constant odorant concentration independent of gas flow rate variations.

With options for backup pumps, continuous level measuring, overflow protection and odoriser flow rate measurement, our solutions offer low maintenance and maximum flexibility for a reliable solution.





KEEPING YOU AND YOUR CUSTOMERS SECURE

Honeywell is a market leader in cybersecurity, bringing you the power of connectivity while mitigating the risks from internal errors and external threats.

Using Honeywell's ControlEdge™ PLC and RTU, Connected OEM gives users native Cloud connectivity with the MQTT protocol for easy integration.

It also comes with embedded cybersecurity certified for ISASecure EDSA Level2. Connectivity to assets can use an independent cellular network without tapping through plant networks to minimise threats.

For small or large machines we offer a solution that's simple, secure and ready to get you connected. Offering the best performance in the business, we're constantly pushing the boundaries. Already our meters can measure natural gas with 20% or even 30% hydrogen. Preparing for the future, proven today, our solutions help you keep with the flow.



COST SAVINGS

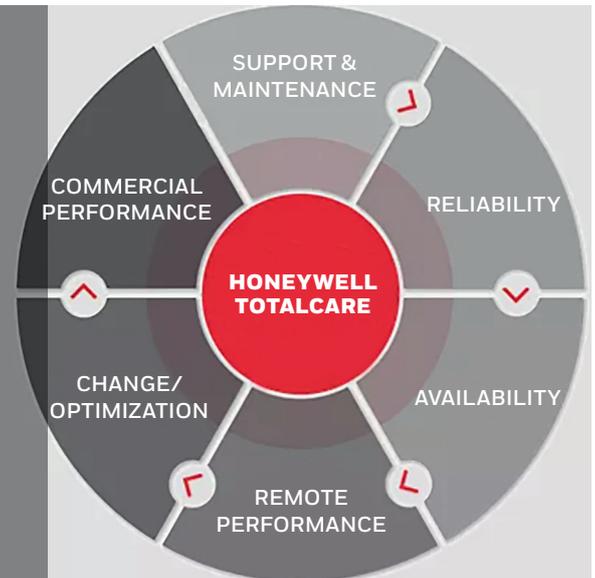
- Remote support and troubleshooting to cut travel costs with fewer site visits
- Improved visibility and health monitoring for more efficient servicing and maintenance
- Supports predictive maintenance programs to reduce failures
- Optimise services and workforce allocations

TOTALCARE SERVICE CONTRACTS

Honeywell's service contracts help operators bring cost certainty to preventive maintenance, while boosting reliability and performance for Storage Terminals, Natural Gas, Scalable Controls and Field Instrumentation businesses.

We have contracts for every need, drawing on a broad portfolio of services, remote support, spares management, predictive maintenance and outsourcing options. Our service options provide a single contract for all your Honeywell equipment.

For a fixed annual fee, we cover the technical support for your ultrasonic and mechanical meters, flow computing devices, gas chromatographs, tank gauging, loading equipment, supervisory systems and pressure and temperature measurement and gas detection devices. You also receive special discounts for trainings and remote system support.



WHY HONEYWELL?

Honeywell brings decades of experience in gas and liquid metering. Our proven solutions are relied on by local gas distributors and grid operators worldwide.

Today, we're the leader in biogas injection stations and offer a seamless, integrated systems for renewables: Turnkey solutions for measurement and control from a single, trusted supplier, using market-leading, proven technology.

Standardized and prefabricated but tailored to your precise requirements, we offer a more cost-effective, compliant and low-risk route to low carbon energy. With worldwide scale and local support, we're the long-term partner and shorter path to a greener future.



For more information

To learn more about our offering, visit process.honeywell.com or contact your Honeywell Account Manager.

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BRO-22-27-EN | Rev 1 | 02/26 C
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THE
FUTURE
IS
WHAT
WE
MAKE IT

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