

Renewable Heat Incentive (RHI)

Compliant metering, consultancy services and reporting solutions





Above: RHI-compliant Prowirl vortex flowmeter on a biomass-fired thermal oil heat metering scheme.
Below: RHI-compliant steam heat metering installation.



Renewable Heat Incentive: what's it all about?

The Renewable Heat Incentive (RHI) is the world's first long-term financial support programme for renewable heat. Launched in November 2011, the RHI scheme for the non-domestic sector provides payments to industry, businesses and public sector organisations for the generation of heat from eligible renewable technologies.

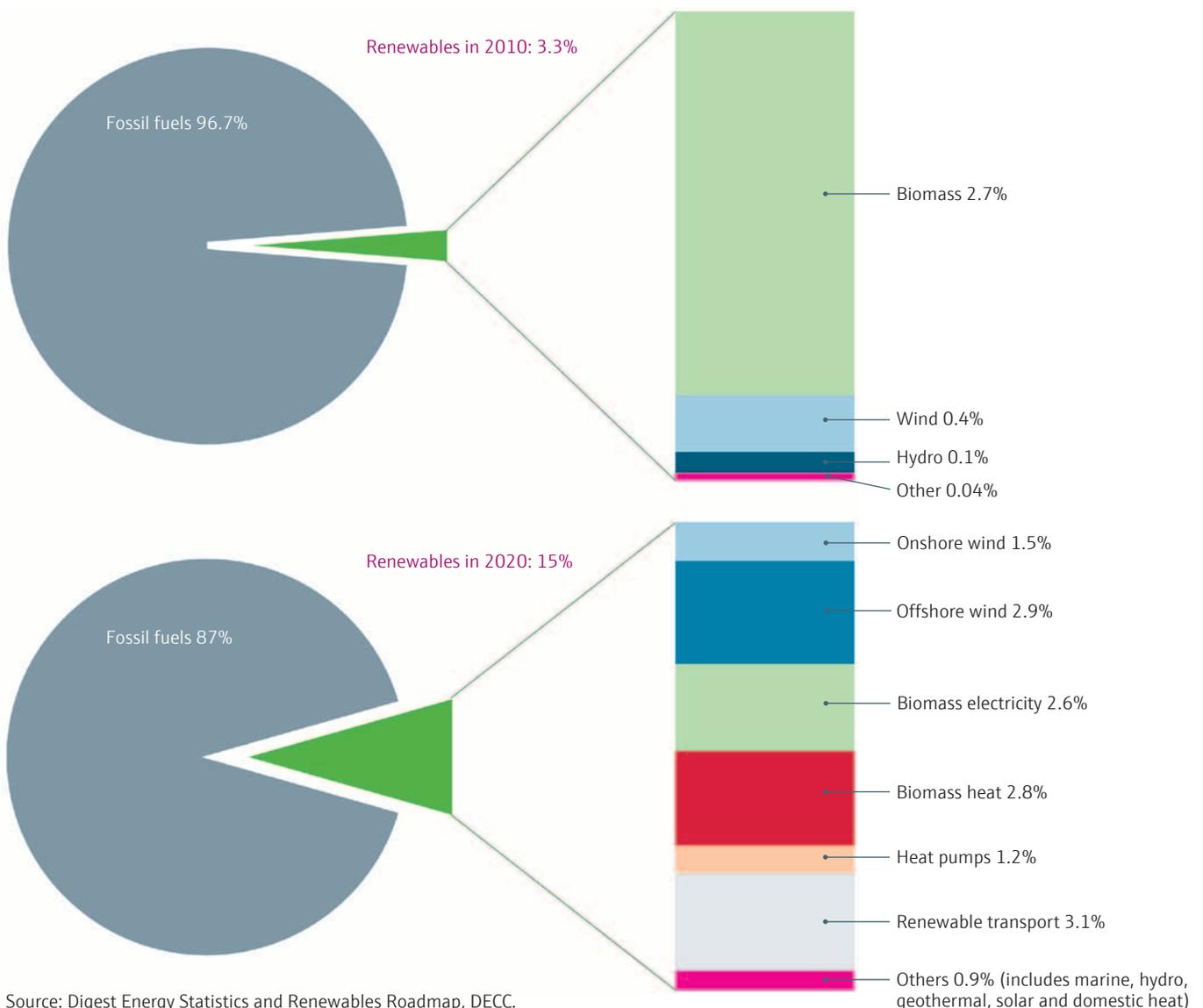
The RHI pays participants of the scheme that generate and use renewable energy to heat their buildings and processes. By increasing the generation of heat from renewable energy sources (instead of fossil fuels), the RHI helps the UK to reduce greenhouse gas emissions and meet targets for reducing the effects of climate change.

The Renewable Energy Directive (RED) requires the UK to source at least 15% of its total energy from renewables by

2020. To meet this target, the government has estimated that renewable sources will need to contribute:

- At least 32% of the UK's electricity, with one-third of this coming from biomass (of which waste forms a part). Currently renewables account for 7.4%.
- At least 12% of UK heat requirements. At present this is less than 1%.
- At least 10% of UK road transport fuel requirements. Current renewable fuel production is less than 3%.

Roadmap of the UK energy mix



Source: Digest Energy Statistics and Renewables Roadmap, DECC.

RHI-compliant metering

Biomass boilers provide the majority of the RHI scheme's renewable heat. In order to obtain RHI accreditation for biomass steam boilers and receive tariff payments for the heat generated, eligible RHI-compliant steam heat and condensate metering must be installed.

Condensate heat metering



ISO 17025 calibration

Promag 50P electromagnetic flowmeter

- Available as a compact or remote version.
- Flow measurement up to 9600m³/h.
- Fluid temperature up to +180°C.
- Process pressures up to 40 bar.
- Fitting lengths to DVGW/ISO.
- Available with ISO 17025 traceable calibration as standard.
- Available with ISO 17025 certified calibration as an option.

EngyCal RH33 heat calculator (supplied complete with a CVD matched pair of temperature sensors)

Used for recording heat quantities of water, the RH33 calculates the thermal energy of water according to EN1434. It complies with the relevant requirements set out in Annex I to the 2004 Measuring Instruments Directive (MID) (2004/22/EC) and with the specific requirements listed in Annex MI-004 of the MID. The measured and calculated values can be output via Ethernet, Modbus RTU, Modbus TCP or as an analogue signal.



MID certificate



Steam and thermal oil heat metering



Prowirl 200 vortex flowmeters (available as volume or mass meters)

- High availability with proven robustness, resistance to vibrations, temperature shocks and water hammer.
- Low maintenance.
- Convenient device wiring with separate connection compartment.
- Safe operation as there is no need to open the device due to display with touch control, background lighting.
- Integrated verification using Heartbeat technology.
- Mass version with integrated Pt100 allows mass and heat metering in accordance with IAPWS-IF97.

EngyCal RS33 steam calculator

Steam calculator for recording and billing steam mass and energy flow for applications with saturated or superheated steam. The calculation is based on the measured process values for volume flow, temperature and/or pressure. The measured and calculated values can be output via Ethernet, Modbus RTU, Modbus TCP or as an analogue signal. The meters are easy to install and read. Calculations as per IAPWS-IF 97.



RMS621 energy monitor

Steam and heat computer for industrial energy calculation of steam and water: steam mass, steam heat quantity, net steam quantity, steam-heat differential, water-heat quantity, water-heat differential.

- Simultaneous calculation of up to four applications per device.
- Modular expansion using plug-in cards.
- Large back-lit LC display with colour change in the event of an error.
- Quick and safe commissioning with application-guided operation (Quick Setup).
- Calculation as per IAPWS-IF 97.
- Meets standards EN 1434-1, 2, 5, 6 and OIML R75.
- Bidirectional flow applications or energy measurement possible.
- Available with Modbus RTU.

Cerabar T PMC131 pressure transmitter

The Cerabar PMC131 is a cost-effective pressure transmitter with capacitive, oil-free ceramic sensor for absolute and gauge pressure measurement. The compact design offers a direct mount system without diaphragm seal, diaphragm overload/vacuum resistant and cable connection via device plug IP65.

- Extremely stable, overload-resistant and reliable.
- High reproducibility and long-term stability.
- Ceraphire ceramic sensor: corrosion-proof, abrasion-proof and extremely overload-resistant.
- Dry capacitance ceramic sensor (Ceraphire) for measuring ranges up to 40 bar (600psi): overload-resistant, vacuum-proof and stable against alternating load.



Consultancy services: IRMA

An Independent Report on Metering Arrangements (IRMA) is intended to verify to Ofgem that an installation seeking RHI accreditation has eligible metering arrangements in place, such as appropriately located and installed meters.

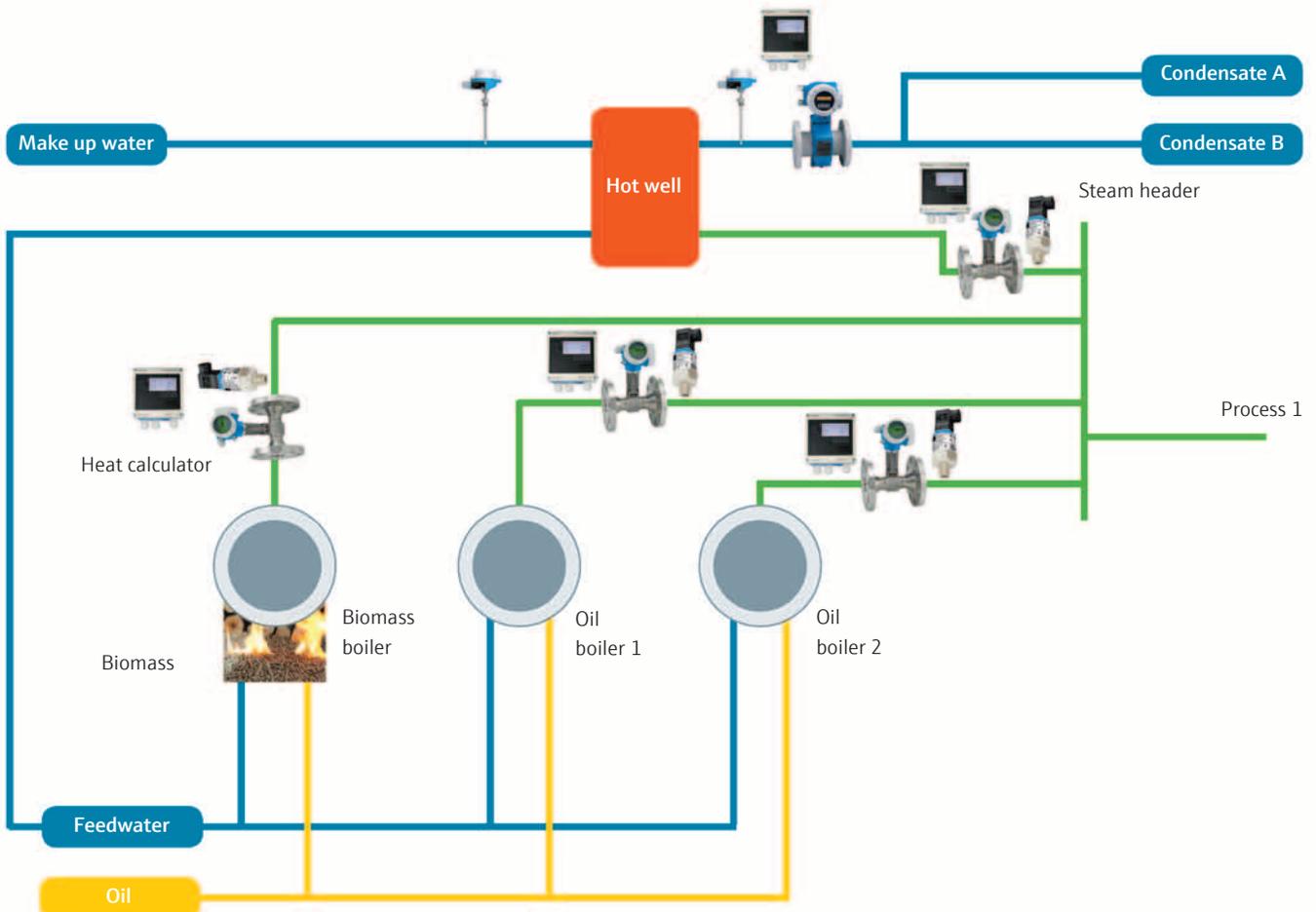
An IRMA assists applicants by providing independent verification that their system installers have provided an RHI-compliant system, therefore helping to reduce the number of applications with issues relating to metering eligibility.

Endress+Hauser offers competent professional advice on metering arrangements. We can advise on the type of meters allowed and the evidence required for their compliance. We provide guidance on the number, type and location of the meters in order to determine the Eligible Heat Output (EHO).

Our consultants meet Ofgem's requirements for a 'competent person' and as such are qualified to provide an independent report (IRMA). This report is required for large-scale biomass with capacities of 1MW and above or installations classed as 'complex' e.g. biomass steam boilers.



Schematic of a typical biomass boiler process in conjunction with two gas-fired boilers illustrating the type and location of RHI-compliant metering.



Automatic reporting

Easily keep track of your energy usage in a click with our RHI reporting software!

Endress+Hauser offers simple cost-effective data collection and automatic reporting solutions focused on Ofgem reporting of the Eligible Heat Output of the accredited scheme. We can generate payments based on tariffs - even those that are index linked and change annually.

Automatic loss of data alarms can generate warnings of possible equipment fault. All data is time stamped and a series of suitable reports are generated automatically and are visible in dashboards.

Our RHI data management software tracks eligible payment data on a daily basis, removing the need for manual readings every quarter. Reports can be generated on a scheduled basis via email or on demand by exporting data into Excel or PDF format.



Endress+Hauser data logging solutions are simple, cost-effective devices capable of storing and forwarding heat energy data across the Internet via email to cloud-based data management software. Please note: data management software can be installed on premise as well as in the cloud.



Cloud-hosted Ofgem reporting software



GPRS store and forward logger

UK

Endress+Hauser Ltd
Floats Road
Manchester
M23 9NF

Tel: 0161 286 5000
Fax: 0161 998 1841
info@uk.endress.com
www.uk.endress.com

CP010811/22/EN/01.1.4