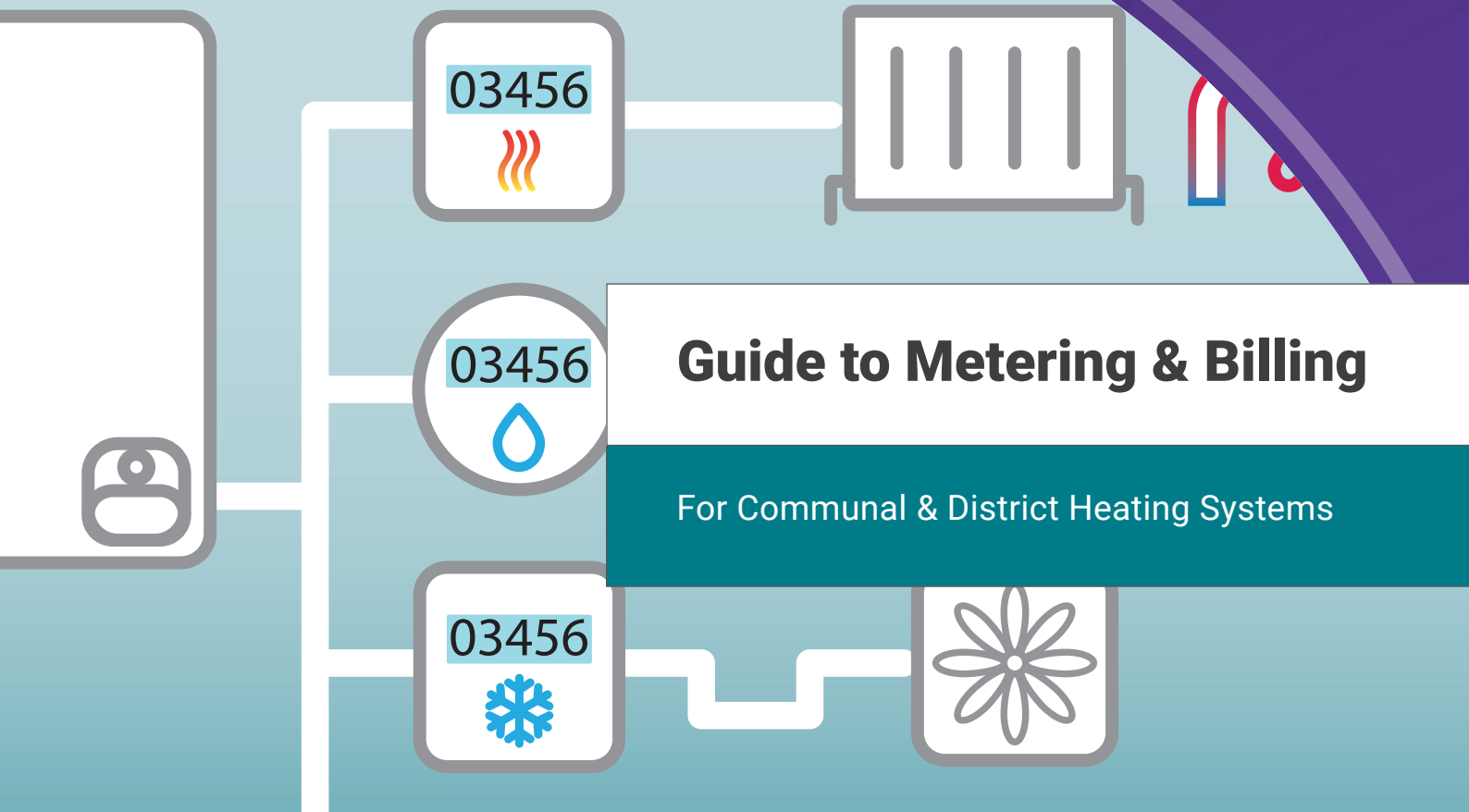
Includes **Metering & Billing Regulations** Information

Evinox Energy



Guide to Metering & Billing

For Communal & District Heating Systems

Our Guide to Metering & Billing for **Heat Networks**

When installing or operating a heat network, energy metering, monitoring and billing should be a key consideration from the outset, to ensure the best solution is provided for the residents and the building owner or manager.

Communal & District Heating
A communal or district heating system supplies heat to multiple dwellings from a common heat source. It may comprise of, for example, a system heating a block of apartments or a larger scale system heating many buildings.

Heat interface units in each apartment or home provide Independent, fast recovery hot water and high efficiency heating for each residence, removing the requirement for individual boilers and a gas supply in each home.

The units are fed by a central plant room, which reduces the buildings carbon foot print and allows the integration of renewable heat sources.

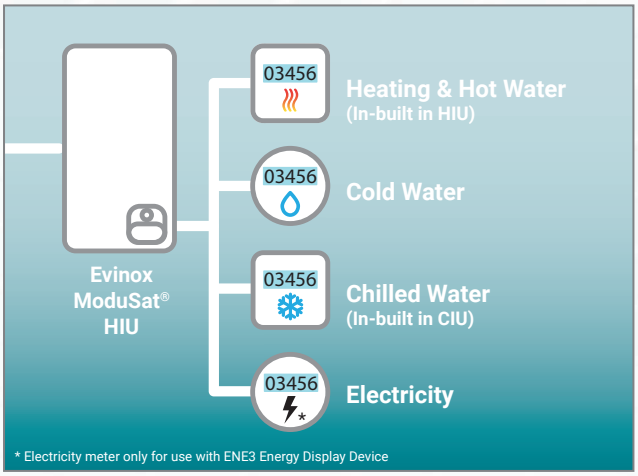
Our Technology
Using ModuSat® heat interface units with in-built energy meters, Evinox can accurately monitor and record the energy used to provide heating and hot water. The system and information provided can be tailored to meet the requirements of the building operator and building residents.

Simple Solution for Existing Developments
For existing housing schemes that already feature another manufacturers equipment, Evinox can provide a fully comprehensive metering solution with credit account billing, and a hassle free set-up. (Further information can be found on pages 8 & 9)

Benefits of our Metering, Billing and Remote Surveillance Solutions

Benefits for the housing stock owner
- Fully compliant with Heat Network (Metering & Billing) Regulations 2014 (See pages 10 & 11 for further information)
- Total revenue management service available
- Reduced administration
- Our fair pricing policy means residents pay for the proportion of energy they use based on accurate meter readings
- Competitive management rates

Resident benefits
- Flexible and convenient payment methods
- Reduced heating costs
- Actual bills with no estimates
- Fair Tariff Policy



As shown above, other meters can also be connected to the Evinox system, such as cold water, chilled water and electricity.

Typical Heat Network Responsibilities

Evinox Responsibilities

- Equipment supply (Including energy meters)
- Data retrieval
- Customer billing and meter queries
- Cash collection
- Meter maintenance
- Warranty validation
- Monthly financial reconciliation

Owner Responsibilities

- Equipment installation (HIU, meters, central plant etc)
- Installation and maintenance of communication network
- Service contracts for HIU's, meters & central plant. (Evinox can provide these service contracts if required)
- Utility Supply Agreement between building manager and residents (Evinox can provide a standard template if required)

Optional Evinox or Client Responsibilities

- Line rental fees
- Installation of telephone lines
- Scheme registration with BEIS as required for Heat Network (Metering & Billing) Regulations 2014
- Metering contract agreement
- Debt risk

Lease and tenancy agreements, things to consider in advance

- Plan in advance how you will look after the scheme
- Future replacement costs
- Service charges - where will they be charged
- Tariff costs
- Debt control
- Plan for maintenance of the heat interface units and central plant equipment
- End user profile – Housing Association or Private
- Utility supplier agreement
- Renewable Heat Incentive (RHI) & Feed in Tariffs
- Project timetable
- Revenue Management Contract

The Communication & **Data Network**

Our experience of heat networks has shown that reading energy meter's remotely is the most straightforward and efficient way of gathering accurate readings.

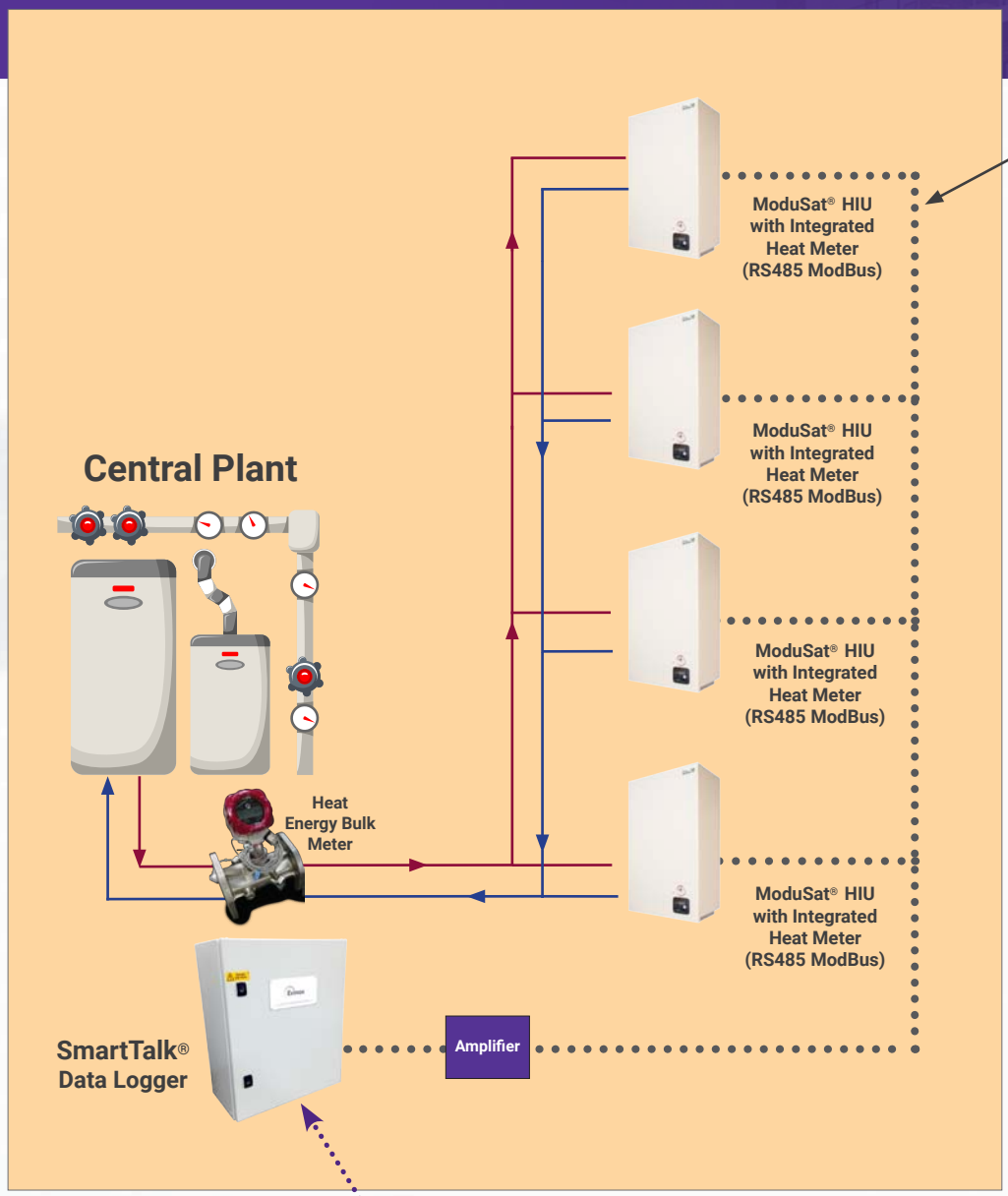
As standard we recommend using a BUS, Ethernet or fibre optic network.

Our Hard Wired Networks Feature:

- **Meters read remotely** via Broadband communication system.
- **SmartTalk® Data Logger** collates meter information and sends data to remote monitoring office and vice versa allowing communication back and forth.
- **Lower running costs** compared to a GPRS network
- **Two-way communication** enables the system in each dwelling to be fully controlled remotely, including timings and settings, and provides remote diagnostic capability and client support.

	RS485 BUS Network	**Ethernet TCP/IP** Network	**Fibre Optic** Network
Meter wired to BUS data cabling system, data fed to a master unit	✓		
Amplifiers/Level Convertors required to improve signal integrity for long cable runs	✓		
Standard data transfer	✓		
Large data transfer		✓	
Super-fast data transfer			✓
No requirement for a Bus network or any amplifiers		✓	✓
Simple solution for schemes that feature an existing Ethernet network		✓	
TCP/IP data network provides real time data modelling. For example this may include: • System diversity modelling • Energy usage modelling		✓	✓
Network can be shared with other systems, such as BMS, alarm systems, broadband and others		✓	
Network can be shared with other systems, such as TV & Radio services, BMS, alarm systems, broadband High Speed Internet and others			✓
Attractive to residents due to the variety of services available immediately when they move in			✓

Typical **Evinox Solution**



Hard Wired Bus, Ethernet or Fibre Optic Network Around the Scheme

All Residents can Access Billing Account via any Web Enabled Device

Evinox Download Data & Issue Bills

Or

Residents can Use PaySmart Pre-payment

Data Sent Via Broadband

Data Sent Via Broadband

Data Sent Via Broadband

SmartTalk® Remote Control & Communication

Secure Server & Database

Billing Services for **Evinox Equipment**

Evinox provide various metering solutions for ModuSat® communal heating systems. Our standard metering packages are listed below, however any client request can be considered and its viability will be investigated to provide a tailor-made solution.

	Billing Data	Billing Data and Proportioning Energy Costs	PaySmart® Pre-Payment System	Credit Account Billing
Energy Saving & Cost Reduction Report	✓	✓	✓	✓
SmartTalk® - Remote Monitoring & Control	✓	✓	✓	✓
Resident Telephone Support for Service & Maintenance	✓	✓	✓	✓
Resident Telephone Support for Billing			✓	✓
Website & Web App with Resident Account login Area			✓	✓
Prepare, Download & Convert Files Ready for Billing	✓	✓	✓	✓
Billing Data to Client in Spread Sheet or CSV file	✓	✓	✓	✓
Proportional Billing of Total Usage		✓	✓	✓
Bills Issued on Template for Printing		✓		✓
Tariff Setting Service	Optional	Optional	✓	✓
PaySmart® Pre-payment Facility			✓	
Flexible payment options including - Direct Debit, Online, Web App, Telephone & Payzone outlets			✓	✓
Debt Free Management			✓	✓*
Bills Per Apartment Consumption				✓
Statements Issued to Residents				✓

* Subject to authority being given to disconnect HIU.

PaySmart®
Pre-payment Solution

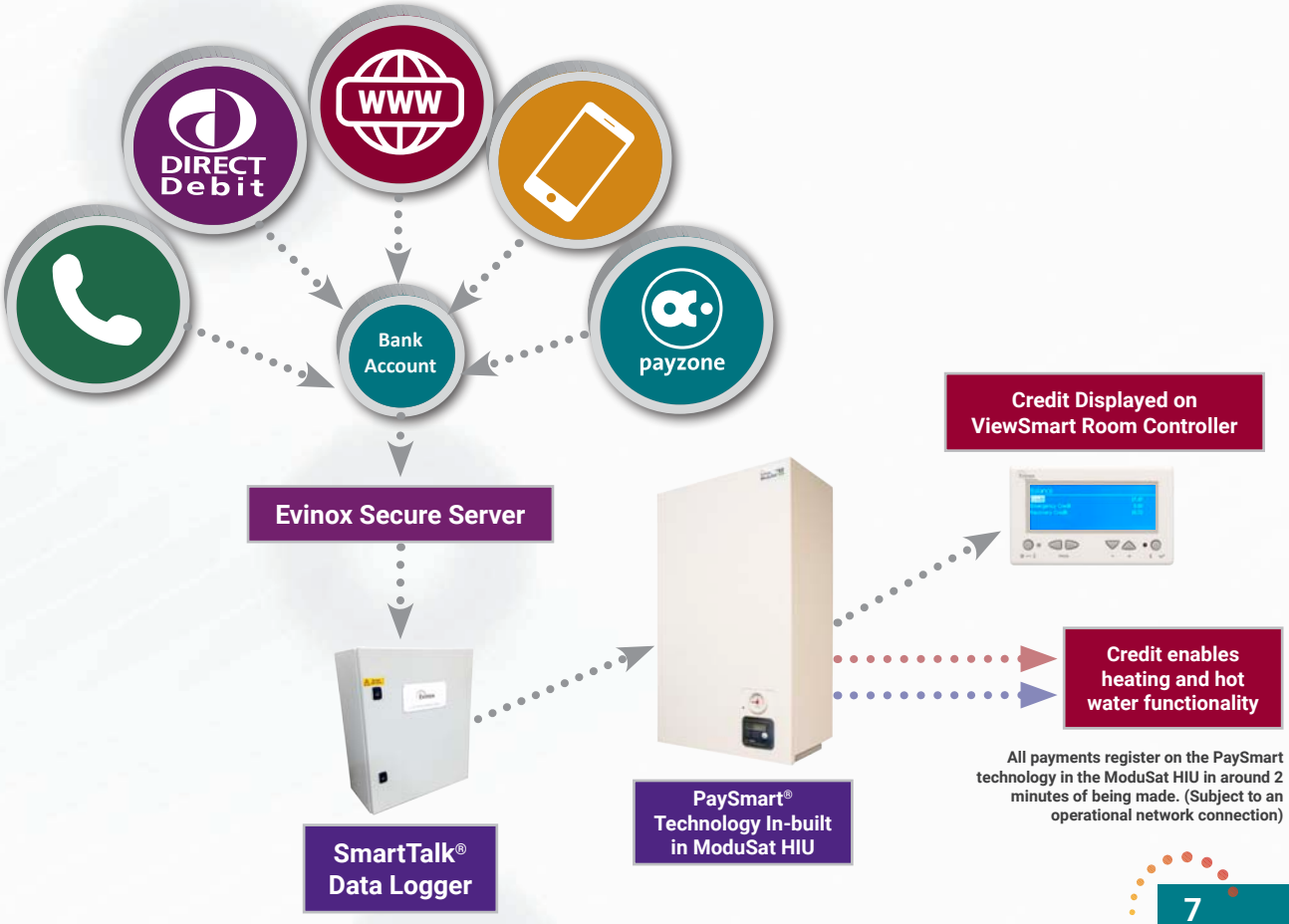
By providing a prepayment solution, you can put your residents in control of their own energy bills, allowing them to pay for energy as they consume it. This removes any possibility of building up unpaid bills or debt.

Our PaySmart® system also takes away the burden of collecting money by the Managing Agent or Housing Association, and provides residents with flexibility and choice over how they pay for their heating and hot water.

The Evinox ModuSat® heat interface unit features in-built PaySmart® technology, which is uniquely identified to a particular dwelling. This system includes a number of consumer friendly features and security provisions to prevent and detect unauthorised interference. In addition, there is no requirement for retrofit of additional components on installed units, as PaySmart® can be remotely activated without gaining access to the property.

Unlike traditional prepayment systems, the process of adding energy credit to the ModuSat® Unit is automated so there is no requirement for the resident to insert a card into the unit for activation.

Residents can purchase their energy using the convenient payment methods below -



All payments register on the PaySmart technology in the ModuSat HIU in around 2 minutes of being made. (Subject to an operational network connection)

Metering & Billing for **Non-Evinox Heating Units**

For communal heating schemes that already have heat interface units or meters and a communication network installed, Evinox can provide a fully comprehensive metering & billing solution to work in harmony with the existing set-up.

For example, a building with an existing M-Bus network and individual meters installed can often be accessed via the existing data logger, allowing Evinox to download data for billing. If this is not possible, an Evinox M-Bus data logger can be fitted, which easily connects to the existing network to allow us to provide a full credit account billing service.

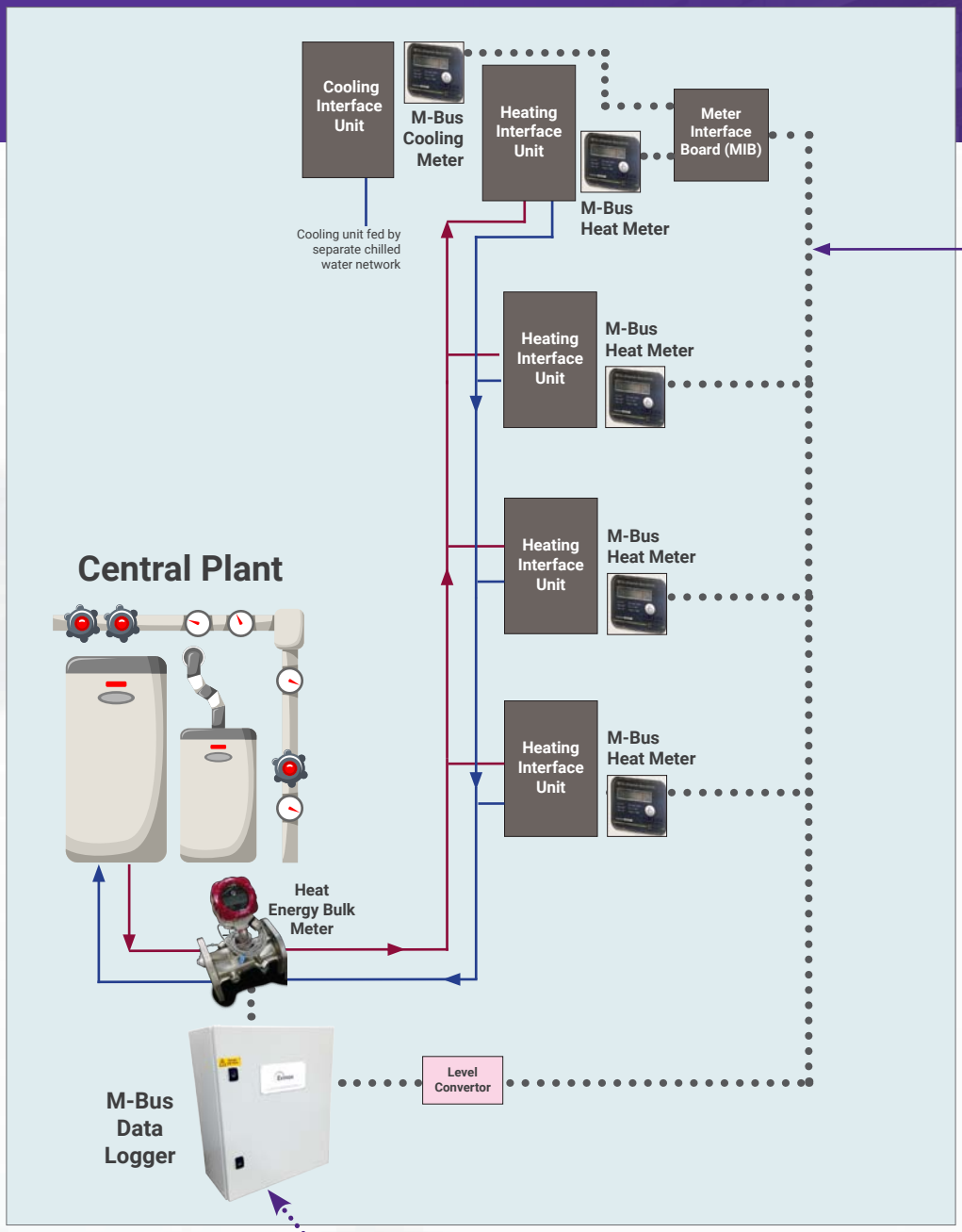
Evinox Can Supply the Following Metering Equipment:

- M-Bus SmartTalk Datalogger
- Level Convertors to improve signal integrity for long cable runs
- M-Bus Meters for each dwelling
- Bulk Meters – As required to meet the Heat Network Metering & Billing Regulations 2014

Billing Services

	Credit Account Revenue Management
Download, Convert & Prepare Data Ready for Billing	✓
Bills Created and Issued Using Consumption Data for Each Dwelling	✓
Resident Telephone & Email Support	✓
Website & Web App with Resident Account Login Area	✓
Flexible payment options including - Direct Debit, Online, Web App, Telephone & Payzone outlets	✓
Proportional Billing of Total Usage – Based on Evinox Fair Tariff Policy	✓
Tariff Setting Service	✓
Statements Issued to Residents	✓
Bills can be Issued on a Template for Client Printing if preferred	✓
Statements Issued to Residents	✓

Typical **M-Bus Solution**



Residents can Access Billing Account via any Web Enabled Device

Data Sent Via Broadband

Secure Server & Database

Data Sent Via Broadband

Evinox Download Data & Issue Bills

The Heat Network (Metering and Billing) **Regulations 2014**

The Heat Network (Metering and Billing) Regulations 2014 implement the requirements in the Energy Efficiency Directive (EED) with respect to the supply of distributed heat, cooling, and hot water.

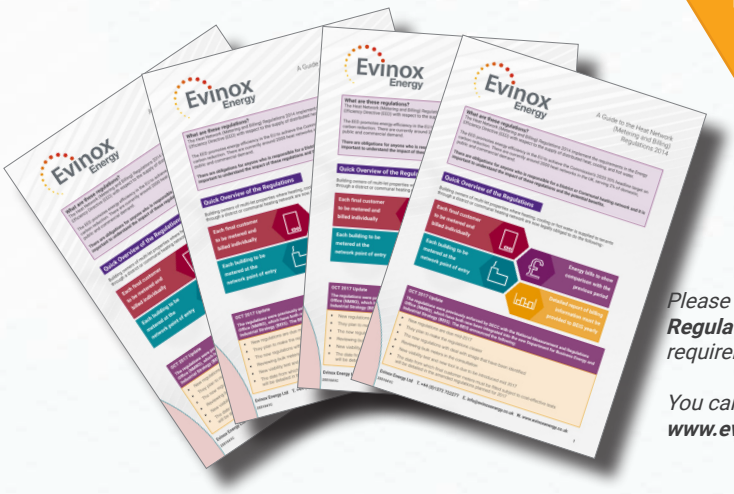
The EED promotes energy efficiency in the EU to achieve the Commission's 2020 20% headline target on carbon reduction. There are currently around 2000 heat networks in the UK, serving 2% of domestic, public and commercial demand.

There are obligations for anyone who is responsible for a District or Communal heating network and it is important to understand the impact of these regulations and the potential benefits.

Quick Overview of the Regulations

Building owners of multi-let properties where heating, cooling or hot water is supplied to tenants through a district or communal heating network are now legally obliged to do the following:-

- **Each final customer to be metered and billed individually**
- **Each building to be metered at the network point of entry**
- **Energy bills to show comparison with the previous period**
- **Detailed report of billing information must be provided to BEIS yearly**



*Please see our **Guide to the Heat Network (Metering and Billing) Regulations 2014 (2551641)** for full details about the requirements of these regulations.*

*You can download the guide from our website – **www.evinoxenergy.co.uk** or call us to discuss.*

The Legislation – What are the requirements?

Notification

Heat suppliers must provide information to the Regulatory Delivery within the BEIS about all district or communal schemes.

Metering

For buildings with more than one final customer, which is supplied by either a district heating system or by communal heating, the Heat Supplier must ensure that meters are installed to accurately measure the consumption of heating, cooling or hot water by each final customer. Evinox recommends that meters are MID approved.

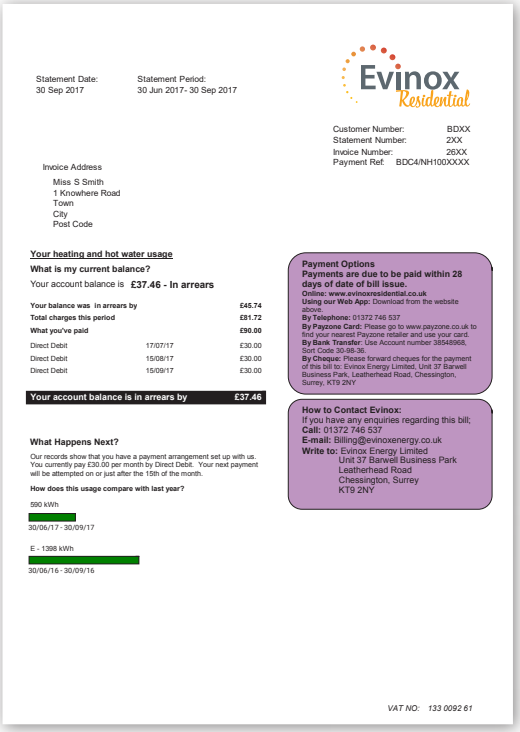
For buildings supplied by a **district heating** system there is a requirement to install heat meters to record the heating, cooling or hot water delivered to that building. This refers to the installation of point of entry meters for each building or riser, and bulk meters for the central plant that supply's energy to each building.

Billing

Final customers must be billed using actual meter readings. The billing provider must ensure that bills and billing information for the consumption of heating, cooling or hot water are accurate and based on actual consumptions.

Examples of required information that should be displayed on the residents' bill are: -

- Current energy prices being charged
- Energy consumption information
- A comparison of the current energy consumption compared to the consumption for the same period in the previous year – displayed in a graphical format
- Contact information including web addresses for organisations where information can be obtained about energy efficiency measures



Statement Date: 30 Sep 2017

Statement Period: 30 Jun 2017- 30 Sep 2017

Evinox Residential

Customer Number: BDXX
Statement Number: 2XX
Invoice Number: 26XX
Payment Ref: BDC4/NH100XXXX

Invoice Address
Miss S Smith
1 Knowhere Road
Town
City
Post Code

Your heating and hot water usage

What is my current balance?

Your account balance is **£37.46 - In arrears**

Your balance was in arrears by		**£45.74**
Total charges this period		**£81.72**
What you've paid		**£90.00**
Direct Debit	17/07/17	£30.00
Direct Debit	15/08/17	£30.00
Direct Debit	15/09/17	£30.00

Your account balance is in arrears by £37.46

What Happens Next?

Our records show that you have a payment arrangement set up with us. You currently pay £30.00 per month by Direct Debit. Your next payment will be attempted on or just after the 15th of the month.

How does this usage compare with last year?

590 kWh
30/06/17 - 30/09/17

E - 1398 kWh
30/06/16 - 30/09/16

Payment Options
Payments are due to be paid within 28 days of date of bill issue.
Online: www.evinoxresidential.co.uk
Using our Web App: Download from the website above.
By Telephone: 01372 746 537
By Payzone Card: Please go to www.payzone.co.uk to find your nearest Payzone retailer and use your card.
By Bank Transfer: Use Account number 38548868, Sort Code 30-98-36.
By Cheque: Please forward cheques for the payment of this bill to: Evinox Energy Limited, Unit 37 Barwell Business Park, Leatherhead Road, Chessington, Surrey, KT9 2NY

How to Contact Evinox:
If you have any enquiries regarding this bill;
Call: 01372 746 537
E-mail: Billing@evinoxenergy.co.uk
Write to: Evinox Energy Limited
Unit 37 Barwell Business Park
Leatherhead Road
Chessington, Surrey
KT9 2NY

VAT NO: 133 0092 61

Our billing services meet with all aspects of the regulations **– Talk to us today to find out more about our tailored solutions and services.**

Meters

As required by the Heat Network (Metering & Billing) Regulations, Individual meters must be installed in each dwelling connected to a district or communal heating system.

These meters should accurately measure the consumption of heating, cooling and/or hot water.

Energy Meters

Evinox ultrasonic energy meters are MID Certified, Accuracy Class 2 (BS EN 1434), and precisely monitor and record the energy used to provide heating and hot water or cooling for each dwelling in the heat network.

Available in two Protocols:-

- RS485 ModBus
- M-Bus

Evinox M-Bus Meters can be provided for use with other manufacturers heat interface units.

Cold Water Meters
Where required, Evinox can provide Single-jet, Super Dry, Cold Water Pulse Meters.

Electricity Meters
Single or Three Phase Smart Electricity Meters can be provided for use with the Evinox ENE3 Energy Display Device.

Each ModuSat® unit features an in-built energy meter for heating/hot water or cooling

Bulk Meters

Evinox supply point of entry and bulk meters, which are designed to record the amount of energy created from the operation of the central plant room.

The Heat Network (Metering & Billing) Regulations 2014 stipulate the following meter installation based on the type of network -

District Heating System

Point of entry meters for each building or riser, and bulk meters for the central plant that supply's energy to each building .

Communal Heating System

A bulk meter for the central plant that supply's energy to the building.

Revenue Management for **Credit Billing**

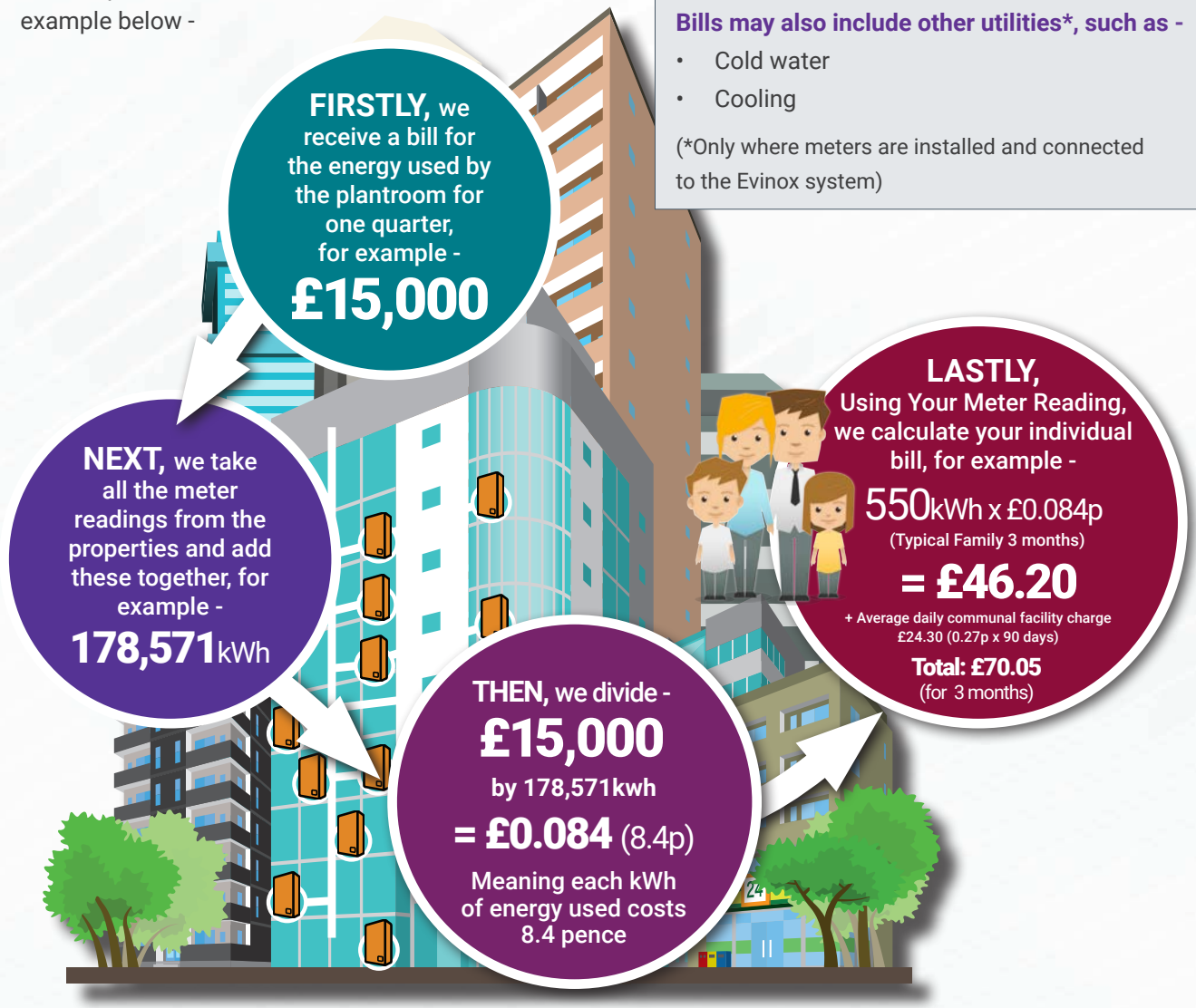
Fair **Tariff Policy**

Calculating the Heating & Hot Water Cost

Evinox Energy operates a fair tariff policy and believe that residents of communal heating schemes should only pay for the proportion of energy that they use.

How does it work?

The energy bill for the communal plant room is divided by the total energy usage in all properties in the heat network, over a given period. This provides the unit price for each kWh used on site - see the example below -



Our Fair Tariff Policy

A standard tariff may consist of the following elements:

- Heating/Hot Water charged per kWh (Kilowatt hour)
- Communal Facility Charge, charged per day (This covers any related operational, administration and billing services and is specific to the lease agreement)

Bills may also include other utilities*, such as -

- Cold water
- Cooling

(*Only where meters are installed and connected to the Evinox system)

Information & Support for **Residents**

Whether the scheme operates with our credit billing service or using PaySmart®, we offer residents a number of convenient and secure payment methods.

Welcome Pack

Every resident will receive a comprehensive, personalised Welcome Pack, providing all the details they need regarding the service and what they can expect.

The pack contains details about the tariffs they will pay and the bills they will receive; information about their communal heating system; how to set up their online account or make direct debit payments; and how to contact us if they have a query, as well as other useful information.

Website & Web App

Residents will be able access their account via our online portal - **www.evinoxresidential.co.uk**

This allows each resident to manage their own account, view their current balance and consumptions, as well as make online payments.

We also provide a range of useful information to residents via this portal, including Frequently Asked Questions and user guides.

The **Details**

Automated Meter Readings

Consumptions for each residence will be recorded daily and collected by Evinox using the AMR system installed (note this requires broadband access to the network to do so).

We will upload meter readings to our ProBill system and perform validation checks, including:

- High/low consumption;
- Non-advancing meter reads; and
- Unavailable meter reads

Exceptions will be reported and investigated by your account manager, working to an agreed Service Level Agreement and escalation procedure.

Revenue Risk Management

Where requested, Evinox can assist with management of bad debt and non-payer risk by including a bad debt fund within the unit rate charged to residents. This will be kept under regular review and increased or reduced as necessary over the lifetime of the scheme.

If necessary, we can also offer the option for specific problem customers to be switched over to a pre-payment solution, to eliminate the risk of further bad debt. For any installation with an Evinox Heat Interface Unit and ViewSmart controller, this option can be activated remotely, without the need for an engineer service visit or any additional equipment to be installed. An activation fee applies.

Reporting

Evinox will provide you with regular reports and management information, including aggregate consumptions and collections; aged debtors (and action taken); breakdown of fee's charged; and details of our performance against agreed Key Performance Indicators.

Debt Management

Where disconnection of supply is not possible or the property is occupied by vulnerable residents, we will agree a formal debt management procedure with the building owner or operator, which can include pursuing a county court judgment to recover the debt.

Contact Evinox today on **01372 722277** to request a bespoke proposal for your metering and billing project. The proposal will include detailed information about the services we can provide based on your project requirements.

Service and **Maintenance**

Service and Maintenance

Evinox communal heating systems are designed to operate at optimum efficiency, using high performance equipment. However, the level of the continuous operation and maintenance service has a major effect on the lifetime of the scheme. Evinox offer various service and maintenance packages, that are available throughout the lifetime of a project for the heat interface units.

Evinox offer Enhanced ModuSat® Warranty cover, which includes the following:

- ✓ Cover 7 days a week 6am – 10pm (Response within 24 hours)
- ✓ 24 months labour
- ✓ 24 months parts
- ✓ One inspection of the unit during the 24-month enhanced warranty period

At the end of the 24-month warranty period, each ModuSat® will be eligible to continue at the same level of cover by taking out a Comprehensive Service Plan.

ModuSat® Comprehensive Service Plans provide the following:

- ✓ Cover 7 days a week 6am – 10pm (Response within 24 hours)
- ✓ 12 or 24 months labour
- ✓ 12 or 24 months parts
- ✓ 1 service (physical inspection) during the contract period (Only for 24-month cover)

You can find full details and costs for cover, in the Evinox ModuSat® Warranty & Service and Maintenance Brochure, or alternatively please contact us on 01372 722277 to discuss your requirements.

Plant Room – Planned Preventative Maintenance (PPM)

Our Planned Preventive Maintenance is a schedule of planned maintenance procedures aimed at the prevention of breakdowns and failure of plant room equipment. The primary goal of our preventive maintenance is to avoid the failure of equipment before it actually occurs.

In addition, our engineers can record equipment deterioration so they can schedule the replacement or repair of worn parts before they cause system failure. The ModuSat® remote monitoring system can also detect alarms and equipment failure in the central plant room.

Case Study - **Banbury Park**

Evinox Energy worked with Higgins Construction & Circle Housing on a development in the creative heart of Walthamstow. Banbury Park is mixed-use scheme comprising of private and shared ownership homes, with landscaped community spaces, shops, offices, a community centre and public square that will help lead the regeneration of the area.

The site was a former warehouse, industrial works and electronics factory located in Waltham Forest. Evinox engineers completed a full design of the primary network for the district heating and hot water system for a complex of 6 different types of building.

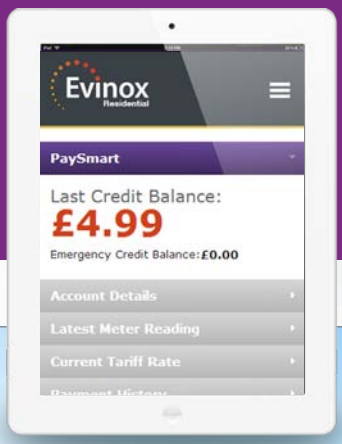
The apartments are connected to the district heat network and each includes an Evinox ModuSat® FS storage HIU to provide heating and hot water. The integrated hot water storage within the ModuSat® enables the central plant to be reduced due to the increased thermal storage facility in each dwelling.

Energy Centre

Together with our CHP partners HELEC, a complete pre-fabricated skid plant room solution has been provided to supply the district heat network. This comprises of 1794kW ADI CD boilers, 109kWth CHP unit with 5000 L thermal storage and Matic-Pro combined pressurisation, expansion and deaeration unit.

Pre-pay Billing System

Residents at Banbury Park benefit from the Evinox PaySmart® pre-payment system, which is inbuilt in every ModuSat® Heat interface unit. The Evinox range of ModuSat® heat interface units is the only solution available that features fully integrated pre-pay ready billing technology.



This system enables residents to be in control of their own energy bills by paying in advance and therefore removing any burden of building up unpaid bills or debt. Residents can purchase their energy online using our Residents Website 24hrs a day, at a local Payzone outlet, by monthly Direct Debit or Standing Order, using our Web App on a smart phone or tablet any time or over the telephone.

Evinox Energy Limited,
Unit 37, Barwell Business Park,
Leatherhead Road, Chessington, Surrey, KT9 2NY
T: +44 (0) 1372 722277 E: info@evinox.co.uk
www.evinoxenergy.co.uk

Evinox reserves the right to make changes and improvements which may necessitate alteration to the specification without prior notice. This is not a contractual document.

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