

Energy and Carbon Monitoring FAQs

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V0.1 Public

Introduction

This document lists the frequently asked questions in relation to energy and water monitoring and calculating their associated carbon footprint.

All assets operated by the council (not including leases) utilities; are monitored via an platform called [Systems Link](#). In addition, buildings owned and operated by Shropshire Council (including schools who choose WME as a supplier) may use the [West Mercia Energy Portal](#).

We are moving towards the SECR ([Streamlined Energy and Carbon Reporting](#)) method for carbon reporting; utilising AMR and smart meter data. All our monitoring data and building utility portals may be accessed via the [Climate dashboard | Shropshire Council](#).

Frequently Asked Questions

How do we monitor energy consumption?

We will use energy consumption figures obtained directly from our energy supplier WME ; which is also collated in our energy database Systems Link; from which reports may be generated.

How are energy, carbon and financial savings calculated?

Energy and financial savings are ascertained using the WME data together with the Systems Link monitoring platform to generate reports. Energy units are recorded (kWh) to which the [carbon factor appropriate to the reporting year](#) may be applied to ascertain the carbon footprint. The footprint is calculated using the international GHG Protocol and [Government methodology](#). The savings are shown by subtracting from the baseline year for energy , cost, and carbon emissions.

Other units measured such as litres of heating or vehicle fuel and m3 of water consumed can also be converted by their associated carbon factors as well as cost per consumed unit.

What type of utilities data is reported and where does the come from?

Systems Link draws together multiple datasets from several utility sources. These include:-

- West Mercia Energy – electric, gas, oil monitoring
- Water consumption
- Solar photovoltaic (PV) generation monitoring
- Vehicle data may be added if we so wish (such as grey fleet and staff cars).
- AMRs (Automated Meter Readers) are used where the correct infrastructure is available.
- Smart meters are being deployed on some sites where there is signal available.
- Otherwise, standard meters require manual meter readings and data input.

As we move away from oil and gas; we will be primarily monitoring electric and water consumption.

How does this relate to energy performance in buildings?

Building Display Energy Certificates (DECs) are based on actual annual energy consumption data whereas Energy Performance Certificates (EPCs) indicate the designed performance when commissioned. Both are useful documents and indicate where improvements can be made.

Do West Mercia Energy offer a monitoring platform too?

Yes, WME offer an energy portal and cloud-based dashboard. In some ways this platform is easier to use and simpler than Systems Link. It offers building level data, and you can configure groups – for service area teams for example. The WME energy portal is also accessible by any external party who chooses to WME as a supplier; for example, this could be social care, schools, and leisure centre sites ; all large users of energy who need to make savings where possible.

This platform is accessible here: [Log in - West Mercia Energy \(mywme.co.uk\)](https://mywme.co.uk)

We advise any staff new to energy monitoring or just wanting to explore basic functionality to use the WME energy portal. Also please check out their new [Use Cleaner use less page](#).

What kind of reports may be generated?

Systems Link can provide half hourly granularity profile data from which we can generate reports over whatever time period required: e.g. daily, monthly, quarterly or annual. Reports can be against different categories specified; for example, buildings, financial cost, or total units consumed; gas, electric, oil or water. You can make year to year comparisons, 5-year trends, or look in detail at daily load profiles to spot anomalies; where utilities are being consumed when they shouldn't be (for example when buildings are shut on weekends).

What is the monitoring frequency and duration?

We monitor monthly across assets managed by the council; so, it straight forward for us to generate quarterly or annual reports; aggregated and averaged as appropriate tailored especially for your site or building. We do this as a matter of course annually across our whole estate for our corporate carbon reporting, which happens each year after the financial turn-over. We have been monitoring data since 2012, but with increased accuracy since 2019.

Who is responsible for monitoring and carbon reporting?

The responsibility is with all Shropshire Council Service Areas supported by the Climate Change Task Force to provide the necessary data. The following named officers and service area teams are responsible, in addition to our utility suppliers from whom the data may be obtained direct.

Named party	Role	Email
Climate Change Task Force	Climate team	climate@shropshire.gov.uk
Property Service Group	Site maintenance	property.maintenance@shropshire.gov.uk
West Mercia Energy	Energy supplier	customerservices@westmerciaenergy.co.uk

What actions should be taken if savings are not being achieved?

The site will be investigated if operational performance in terms of energy and carbon are less than expected. Shropshire Council have produced a [Checklist](#) for site managers to ensure the easy wins are implemented and equipment is being used appropriately in order to maximise savings. In addition, WME offer great advice and a similar simplified checklist on their [Use Cleaner use less page](#). Having done the checklist; the interventions highlighted will be elevated to the Asset Manager to be implemented.

Should we be switching all sites to smart meters?

Yes! - New Smart Meters SMETS2 standard use a radio band (WAN or wide area network) that works well in rural areas and avoids the need to rely on the patchy cellular network (i.e. 1-5G). The Smart meter also uses an encrypted local Wi-Fi signal to link to a handheld monitor in the building itself. Greater rollout of smart meters will allow increased granularity of the data and depending on where fitted will allow building and site level information that relates to specific service areas.

Why can't all electric meters currently be automated?

Not every meter in Shropshire Council buildings is automated unfortunately, we still have a lot of sites with dumb (manually read) meters. This can be down to poor or no mobile signal or over 100A per phase so an AMR (Automated Meter Reader) can't be fitted until the infrastructure has been changed (This can be very expensive and has stopped a lot of AMR's being fitted).

However smart meters (single and 3 phase) may surmount these hurdles and are a more cost-effective solution and provide more granularity of data, i.e. site and building level.

What about gas and oil?

Gas and oil boilers are gradually be phased out as we shift to all electric forms of heating (that being heat pumps or storage heaters). This is in line with our goal to reach net zero by 2030 and in accordance central Government targets. It is useful however if any existing gas and oil boilers metered supplies are smart or AMRs where possible in order to assist monitoring.

What about water?

Water billing is provided by WME, however Wave Utilities working alongside Shropshire Council to are identifying sites on which to make savings. Monitoring water is important from a resource and cost point of view; however, Shropshire Council water data collection currently is patchy. Because of this we are looking to improve our metering arrangements to improve the accuracy and granularity of data.

What about solar PV and other types of renewable energy?

We currently have ~ 1.2MW PV capacity which is monitored on a system called [ORSIS](#). New installations also have a [Solar Edge monitoring platform](#) that goes with the equipment; this has very good safety features and allows panel level performance monitoring.

Our renewable energy assets are publicly visible and accessible on our [Climate dashboard](#).

Summary of Utilities and Monitoring Platforms

Links to all our monitoring platforms may be found in our Climate Dashboard in the buildings section ; site manager (padlock symbol).

Utility consumption / generation	Monitoring platform(s)	Link
Electric	Systems Link WME energy portal	Climate dashboard Shropshire Council
Gas	Systems Link WME energy portal	Climate dashboard Shropshire Council
Oil	Systems Link WME energy portal	Climate dashboard Shropshire Council
Water	Systems Link Wave Utilities	Climate dashboard Shropshire Council
Solar PV	ORSIS Solar Edge (new installs)	Climate dashboard Shropshire Council
New renewable energy deployment (wind , hydro)	ORSIS ENERGIZE	Climate dashboard Shropshire Council

Further references

- [Government Environmental reporting guidelines: including Streamlined Energy and Carbon Reporting requirements](#)
- [Government conversion factors for company reporting of greenhouse gas emissions](#)
- [2021 Government Greenhouse Gas Conversion Factors for Company Reporting](#)
- [Greenhouse gas reporting: conversion factors 2022](#)
- [Staff Energy and Water Guidance](#) – our in-house guidance for staff (utility portals).
- [Climate Strategy Method](#) – our full method explanation on GHG reporting (Scope1,2,3) and climate change mitigation projects and implementation strategy.