

CONNECTING LOW CARBON GROUPS ACROSS THE COUNTY

Low Carbon Warwickshire Network

October 2024 - Issue - 43

The Low Carbon Warwickshire Network aims to connect low carbon groups across the county, sharing ideas and stimulating and supporting new activity. Although primarily rural in focus, we exclude no one.



<https://www.harburyenergy.co.uk/warwickshire-low-carbon-network>

Welcome to the Low Carbon Warwickshire Network (LCWN) Newsletter.

The LCWN aims to create a central hub providing guidance, information and inspiration for new and existing groups, mainly in rural areas. 'Low Carbon Communities' events have been held in Harbury, Napton on the Hill, Henley-in-Arden, Church Lawford, Boddington, Kenilworth, Brailes, Cubbington, Wroxall, Wellesbourne and Lillington. We hope Sustainable Binley Woods will host an event in Feb 25.

Warwickshire Climate Alliance (WCA) - Mancetter Big Save Event

The Warwickshire Climate Alliance Big Save event took place at Mancetter Memorial Hall on September 21st 2024. It followed on from previous WCA events in Nuneaton and Coleshill. The aim of the event was to enthuse and enable local residents to achieve home energy and other cost savings. There was also a 'Pop-Up' Repair Café, a 'Handprints for Action' activity, a toy swap and many people coming in for their 'Time Out' high quality vegetables at £2 per bag.



<https://www.facebook.com/timeoutliving>

Stephen Currie, WCA, September 2024

Napton Environmental Action Team (NEAT) News - Autumn Activities

A small number of volunteers came to give the mini wildflower meadows at Pillory Green their annual cut to control grasses and encourage delicate annual wildflowers to thrive. The flowers were left until after seed-drop, then the stems were cut and cleared using hand tools. It's important to use hand tools to avoid injuring the hidden wildlife we found (frogs). Clearing the cut stems is done to control soil nutrient level.



NEAT was donated a community apple press from SPARKS. The press has been worked hard this year with several residents coming to chop, scrat and press their apple harvests. A local hostelry saved lots of screw top wine bottles for us to use and over 70 have now been filled with delicious apple juice.



NEAT has seven volunteer thermographers who are now gearing up for the start of the thermal imaging season – there needs to be a ten-degree difference in temperatures between inside and outside. We provide a free service for residents and produce a thermal image report for them highlighting where they are losing heat and giving suggestions for how they can help keep their homes toasty warm.



Jacky Lawrence, NEAT, October 2024

LCWN Steering Group

The Steering Group meet infrequently and only when we have something of significance to discuss. **If you would like to get in touch with us or wish to join the email address list to receive the Newsletter directly, please contact Bob Sherman at lowcarbonwarks@gmail.com**

To find out a little more about the steering group members see their '**who are we?**' answers:-

Bob Sherman - [LCWN-Newsletter-Issue-3-February-2021.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-Issue-3-February-2021.pdf)

Jacky Lawrence - [LCWN-Newsletter-Issue-7-June-2021.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-Issue-7-June-2021.pdf)

Ted Dowdeswell - [LCWN-Newsletter-Issue-9-August-2021.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-Issue-9-August-2021.pdf)

Ian Wood - [LCWN-Newsletter-Issue-10-September-2021.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-Issue-10-September-2021.pdf)

Teresa Buckle - [LCWN-Newsletter-February-2023-issue-24.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-February-2023-issue-24.pdf)

Matt Black - [LCWN-Newsletter-April-2023-issue-26.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-April-2023-issue-26.pdf)

Louise Bowlt - [LCWN-Newsletter-August-2023-issue-30.pdf \(harburyenergy.co.uk\)](https://harburyenergy.co.uk/LCWN-Newsletter-August-2023-issue-30.pdf)

Do you want to host a LCWN event in your community?

If you would like to host an RSA funded “Low Carbon Community” event where you live, please email: lowcarbonwarks@gmail.com and let us know where and when and we will support you in planning it. You will not be on your own.

The LCWN Steering Group have also started to develop an **event resource library** to support your event planning. We have also enabled the opportunity to share **regular Parish Mag and other publications** between groups. Seven groups in the Network are now sharing their articles and a suggested communications plan has been developed. Get in touch with Jacky Lawrence for more details. email: lowcarbonwarks@gmail.com

The RSA

Callum Bate is the Area Manager for the Central Area. His contact details are: The RSA, 8 John Adam Street, London, WC2N 6EZ, e: Callum.Bate@rsa.org.uk, w: [The RSA - RSA](https://www.rsa.org.uk)



The RSA – the Royal Society for encouragement of the Arts, manufactures and commerce. Where world-leading ideas are turned into world-changing actions. The RSA is committed to a world where everyone can fulfil their potential and contribute to more resilient, rebalanced, and regenerative futures.

[Combating the climate crisis - RSA Journal issue 3 2024 - RSA \(thersa.org\)](https://www.rsa.org.uk/publications/journal/3-2024)

Technology, the arts, psychology and community action all have a part to play in responding to climate change. The RSA’s director of design and innovation introduces the latest issue of the Journal, which celebrates these ‘courageous climate’ ideas.

[Under the weather - RSA Journal Issue 3 2024 - RSA \(thersa.org\)](https://www.rsa.org.uk/publications/journal/3-2024)

This piece, written by Judith Anderson, Chair of the Climate Psychology Alliance, discusses the emotional toll of climate change (particularly on younger generations) emphasising the fears, anxieties and isolation they might feel when dismissed by older generations. It stresses the importance of offering support, validating their concerns and involving them in decision-making. Anderson advocates for realistic hope, collective action and building resilience to address the climate crisis.

[Climate Psychology Alliance](https://www.climatepsychologyalliance.org/)

Act on Energy - Winter is Coming Events

With the colder weather just around the corner, we will be attending events in Warwickshire around the message of ‘Winter is Coming – Are you Prepared?’ Discussions and advice will centre around the cost-of-living pressures as well as focusing on the practical help that is available.

The Warm Hub, Sydni Centre, Cottage Square, Sydenham, Leamington Spa, CV31 1PT, **October 22nd**, 2024, 11 a.m. till 3 p.m. [Events](https://www.actonenergy.org.uk) ([actonenergy.org.uk](https://www.actonenergy.org.uk))

Net Zero Climate Hub 30 Meer Street, Stratford-upon-Avon, **October 29th** 2024, 10:00 am - 1:00 p.m. [Events - Stratford Climate Action](https://www.actonenergy.org.uk)



Stratford Heating & Energy Bills Support (SHEBS)

Financial help is available for eligible Stratford District residents towards energy bills and to replace and repair heating systems – please find information about the scheme and its eligibility criteria here: [Stratford Heating & Energy Bills Support \(SHEBS\) | Act On Energy](#)

There is also some support available to offer boiler servicing for eligible Warwickshire residents - Anyone that meets the income, savings and vulnerability criteria can apply to have their boiler serviced.

With over 25 years' experience, **Act on Energy** is an award-winning energy advice charity covering the West Midlands, including Warwickshire. Working in partnership with the **Local Authorities** and external organisations, we offer a range of services - from **free, impartial energy advice** and help with applying for **grants and funding** for energy efficiency measures through to financial welfare support for those struggling with the cost of living.

We're here to help! www.actonenergy.org.uk
Call **0800 988 2881** or email advice@actonenergy.org.uk
[Act on Energy UK | Facebook](#)
[Warwickshire Household Support Fund | Act On Energy](#)



Transition Town Rugby – Thinking Thursdays

A few groups in Rugby are working together to organise some talks, films and discussions, under the banner 'Thinking Thursdays'. Details at <https://www.transitiontownrugby.org/initiatives/thinking-thursdays>. Booking not essential, but will guarantee a seat.

Thinking Thursdays is a series of events offering an opportunity to think about climate and related issues, and discuss solutions - local, national, international.

- **Thursday 14th November** - talk and discussion led by Warwickshire Wildlife Trust about the Local Nature Recovery Strategy - to be confirmed
- **Thursday 12th December** - film and discussion about sustainable housing and Passiv Haus design - more details to follow



All events are at Rugby Eco Hub, Claremont Centre, Clifton Road CV21 3QE. Doors open 7pm for a 7.30pm start. Free, but suggested donation £2. In collaboration with Rugby Friends of the Earth and Rugby Green Christians.

Sign up for the Rugby Eco Hub Newsletter here: <https://rugbyecohub.org/>
[Transition Town Rugby, Library of Things \(rugbyecohub.org\)](https://rugbyecohub.org/), <https://rugbyecohub.org/repair-cafe>

Carrie Pailthorpe, Transition Town Rugby

Net Zero Stratford – Climate Hub

Net Zero Stratford events are listed on the web site, [Events \(netzerostratford.org.uk\)](https://netzerostratford.org.uk) Net Zero Climate Hub is at: 30 Meer St, Stratford-upon-Avon, CV37 6QB. We are open Tuesdays, Thursdays and Saturdays (unless the Saturday clashes with the Repair Cafe). For event queries, please contact janet@netzerostratford.org.uk,

Janet Palmer, Net Zero Stratford



Diary Dates

OCTOBER

Bidford Climate Action Event, 20th October 2024, 2-4 pm

Bidford Climate Action will be holding an energy advice event on 20th October from 2-4pm at Bidford Fire Station (12 Court Way, Bidford-on-Avon, Alcester B50 4BN). Come along to find out more about how to get your home ready for winter and how to save energy.

There will be displays and homeowners available to talk about living with renewable energy options.

Act on Energy will be on hand to offer advice and provide information about grants available. Find out more about energy-saving materials and gadgets.

Learn about how to loan the thermal imaging camera to check your home for cold spots and heat loss. Find out more about energy-saving materials and gadgets.

Warwickshire Fire and Rescue Service will provide details of their safe and well visits and other advice including winter warmth.

bidfordclimate@gmail.com

[bidfordonavon-pc.gov.uk](https://www.bidfordonavon-pc.gov.uk)

Marina Denning, Bidford Climate Action, October 2024

Bidford's Clothes Swap At the Village Cafe, First Saturday of each month, 2-4pm

Coffee, cake, a new outfit and a warm feeling knowing your unwanted clothes have a new life - what's not to like?

How does it work?

- Dig out up to 10 items of clothing that you don't want - clean and in reasonable condition, please
- Bring them along to the Clothes Swap
- Get a token to swap the same number of items
- Have fun choosing from the clothes, shoes, bags, hats, etc.

[bidfordonavon-pc.gov.uk](https://www.bidfordonavon-pc.gov.uk)



Energy Advice for Bidford



SAVE MONEY



PROTECT OUR CLIMATE



FREE ENTRY
FREE REFRESHMENTS



Act on Energy experts on hand to offer advice
Bidford's thermal imaging camera available for residents to check their own homes for cold spots and heat loss
Displays and homeowners available to talk about living with renewable energy options: heat pumps, solar panels, batteries, EVs
Find out about and see energy-saving materials and gadgets

Sunday 20th October 2-4pm At Bidford Fire Station Community Room



Parking (Courtyards car park, not fire station parking)
Community Room
Any questions? Ask Amanda bidfordclimate@gmail.com



Bidford's Clothes Swap





At the Village Cafe
First Saturday of each month, 2-4pm

Coffee, cake, a new outfit and a warm feeling knowing your unwanted clothes have a new life - what's not to like?

How does it work?

1. Dig out up to 10 items of clothing that you don't want - clean and in reasonable condition, please
2. Bring them along to the Clothes Swap
3. Get a token to swap the same number of items
4. Have fun choosing from the clothes, shoes, hats and accessories

No money changes hands - it's free to come and free to swap

Treat yourself at the cafe, make an occasion of it with friends, or just come along to the Swap

Any questions? Ask Amanda bidfordclimate@gmail.com

At The Village Cafe, 48 High Street, Bidford-on-Avon (on the market place)

Supported by Your Village, Your Voice, Bidford-on-Avon Parish Council



Just curious? Come and check it out and maybe swap another month ☺



Lias Line Greenway Guided Cycle Ride. 20th October 2024, 1 pm

The Lias Line Greenway in Warwickshire is part of the National Cycle Network Route 411. It has a new bridge installed close to Marton. The greenway was created on a disused railway route and provides a path for walkers, cyclists, and horse riders.

Cycle Infinity CIC is hosting a traffic-free guided ride starting and finishing at The Two Boats pub, on the A423, Coventry Road, Long Itchington, Warwickshire CV47 9QZ on Sunday 20th October at 1pm. There are only 20 places available on this first ride, so booking is essential. The cost is £5 per person.



[Lias Line Greenway - guided ride. \(google.com\)](#)

[\(1\) I'm incredibly excited to share with you a... - Cycle Infinity CIC | Facebook](#)
hello@cycleinfinity.co.uk

Simon Storey, Cycle Infinity CIC, October 2024,

Community Energy England Net Zero Terrace Streets (NSTZ) update webinar, 1 p.m. 24th October 2024

Community Energy England's Loomio is an All-Member Forum -so you have to sign up.

The Net Zero Terrace Streets (NSTZ) project is seeking to create a replicable and scalable model to ensure that the nearly 6 million two- to three-bedroom terraced homes across the UK aren't left behind in the transition to net zero.

The project is moving at pace and we would like to invite you to join our upcoming [Net Zero Terrace Streets \(NZTS\) Update Webinar on Thursday, 24 October from 1:00 PM](#) for an hour.

This webinar will be an excellent opportunity to hear the latest updates, discover how you can get involved, and explore potential partnerships.

Event Highlights:

- **Catch-up on progress**, including a spotlight on key developments and upcoming plans.
- **Insights from key partners**, such as Rossendale Borough Council and Rossendale Valley Energy.
- **Opportunities to become a formal Future Partner** in shaping the future of terraced homes and communities.
- **Q&A session** to answer your questions and gather your insights.



Register Here: <https://bit.ly/NZTSupdate>

[Net Zero Terrace Streets \(NZTS\) Update Webinar Tickets, Thu 24 Oct 2024 at 13:00 | Eventbrite](#)

Handprints for Action Project

Our **Handprints for Action** are what we can do to help heal our environment what we give, a helping hand, or a healing touch.



Teachers Encourage your students to:

- Draw around their hand
- Write on it a positive action that their family are already doing, – or one they would like to do to protect the environment.
- Decorate their handprint in bright colours for flower petals or greens for leaves.



Handprints will be assembled into a garden collage for display at Holy Trinity Church and other venues

Send your handprints to:

Gabrielle Back, 3 Underhill Close, Finham, Coventry, CV3 6RB by the end of January 2025.



Savers Charity Number 1108191

Warwickshire County Council – Sustainable Warwickshire Podcast

Creating School Climate Action Plans

The Department for Education has said that every school in England should have a climate action plan in place by 2025. But with teachers and school leaders already facing a wide range of challenges, how are they responding to this need for a climate action plan, what support is available to them and what difference is it making?

To find out, join our discussion with Sarah Mills, a Climate Action Advisory for the charity Let's Go Zero, who work with schools in Warwickshire on developing their climate action plans, and Kate Waterfield, the Sustainability Lead at Brookhurst Primary School in Leamington, whose passion for engaging children with nature has led to sustainability being firmly embedded into school life.

Search for Sustainable Warwickshire on Spotify or Apple, or visit:

<https://sustainablewarwickshire.podbean.com/>

[Sustainable Warwickshire | Warwickshire County Council \(podbean.com\)](https://sustainablewarwickshire.podbean.com/)

Sarah Mills, Let's Go Zero Climate Action Advisor (Midlands), +44 20 7096 6120

[Climate Action Advisors - Lets Go Zero](https://letsgozero.org/)

[UK Climate Change • Let's Go Zero \(letsgozero.org\)](https://letsgozero.org/)



Good News

Cornmill Meadows, Shipston

Cornmill Meadows in Shipston are finalists in the Stratford Herald Business and Attraction Award, "Green" section, up against Shakespeare's distillery and Shakespeare's Birthplace Trust. We're very small fry compared with them! But it's good news even if we don't win. Results on October 18th.

Hilary Kelly, October 2024

A Path to a Greener Claverdon

Background

In 2019, the Claverdon Neighbourhood Plan made clear the need for Claverdon to support renewable energy and mitigate the impact of climate change by becoming a carbon neutral parish, with solar energy identified as the likely route and where development proposals relating to the production of renewable energy will be supported where there are no significant adverse landscape or other visual impact. To deliver this vision, the Parish Council has now set up CHARGE a Community Interest Company (CIC) as the vehicle to provide advice and funding and help the community utilise renewable energy and lower bills.



CHARGE CIC

Claverdon Harnessing Alternative Renewable Green Energy Community Interest Company (CHARGE CIC) is a newly formed group to assist and facilitate our community to transition away from fossil fuels. It seeks to help in three specific ways; a) Look for beneficial renewable energy generation opportunities, b) Support our community assets e.g. Church, School etc. transition to greener, more efficient energy solutions and c) Support parishioners to retrofit or build-in suitable renewable energy solutions.

The Parish Council is mandated to aim for 'net zero' but we must find achievable and affordable ways to do this. CHARGE CIC aims to help the community to work out a way forward.

Claverdon's Community Solar

A potential solar farm in Claverdon could help fund Claverdon transition from oil and LPG to renewable energy. Under the powers bestowed to Claverdon Parish Council we shall therefore be undertaking a study to assess the feasibility of this and what financial benefits there would be for the community. The study will include identifying an appropriate site, along with several formal environmental, visual and planning assessments.

The results of the feasibility study will be shared openly and there will be opportunities for Parishioners to learn more, ask questions and provide input.

This is Claverdon's project, and the Parish Councillors are acting upon the stated objectives of our Neighbourhood Plan and residents' interests to investigate the feasibility of parish based solar farm. In addition, the Parish Council and CHARGE CIC have the overarching objective of ensuring the project (if approved) delivers a substantial annual income with all profits being distributed across our Parish's community to support renewable energy projects.

Claverdon Parish Council will be providing parishioners with regular updates, with further information available on the council website. Communication and full transparency will be fundamental to this



consultation and community engagement paramount, so if you have any immediate questions or concerns, please don't hesitate to contact us

[A path to a greener Claverdon – Claverdon Parish Council \(claverdon-pc.gov.uk\)](https://claverdon-pc.gov.uk)

Email. community.solar@claverdon-pc.gov.uk

Ian Bowater, Claverdon Parish Council & CHARGE CIC

Ted's Tech - Massive Batteries made from common materials

Wind power and Solar power are intermittent. For us to be able to STOP USING FOSSIL FUELS and provide power in the slack periods we need to store energy by some means. Many times, when the wind is blowing strongly and the sun is powerful, they are producing more electricity than the grid can take and they need to be turned off - a complete waste!

Batteries are one obvious answer, but to store massive amounts of electricity they need to be big, lorry container sized. When thinking of a modern battery the first type to come to mind would be made of Lithium but this is used so much in smaller batteries and is so expensive what else can be used?

Well two companies have developed two separate systems using a very plentiful and cheaper metal - IRON! Using two different chemistries.

ESS of USA uses iron, salt and water in what they call their "Iron Flow battery", claiming it will last 25+ years with no degradation. During the last week of September, they had a stand at the Solar and Storage show at the NEC, looking for business in the UK.

Search:- essinc.com

[Long-duration Energy Storage | ESS, Inc. \(essinc.com\)](https://essinc.com)

Form Energy also of USA, again using Iron in their "Iron Air" battery. In this battery Iron is repeatedly rusted and de-rusted to store and release energy - what will they think of next!

This battery system has been selected by Future Energy Ireland for an energy storage site in Donegal County.

Search:- formenergy.com

[Form Energy: We are Transforming the Grid](https://formenergy.com)

Ted Dowdeswell, Member of Harbury Energy Initiative, October 2024

Heat Pump Controls - by our guest blogger Neil Kitching

In this blog I explain the differences between operating a gas or oil central heating system versus an air sourced heat pump.

There is a lot of detail to take in, so I have split it into two parts.

Part A: The differences between Gas or Oil heating and a Heat Pump

Part B: A Guide for Householders – heat pump controls

Many of my readers will be content to **just read Part A**; those with a real interest in understanding how to operate a heat pump can also read Part B.



Please note that your heat pump installer will set up the controls to suit your house and your lifestyle needs, so in theory you won't need to change them. However, in practice it is likely that you will want to adjust the controls at some point. Understanding how your heat pump works could help to avoid

excessive electricity bills and will enable you to have constructive conversations with your installer if there are any issues with the operation of your heat pump.

An alternative, and one I would recommend, is to sign up to a remote monitoring and control service where a company can remotely adjust your controls and fix minor faults.

Part A: THE DIFFERENCES BETWEEN GAS OR OIL HEATING AND A HEAT PUMP

In some respects, heating your home by gas, oil or by a heat pump are similar. They can all work with wet based central heating systems that circulate warm water around your house. Many of the basic controls are the same, such as a house thermostat and a programmable timer. However, there are some important differences to understand.

Heat Output

A heat pump has a smaller heat output than a gas or oil boiler; typically 4-15kW versus 10-40kW. Given the lower heat output, a heat pump:

- to work well it must be designed and installed correctly and have its controls set to suit your needs;
- will work more efficiently if you heat all rooms to a similar temperature - a heat pump and its radiators are sized to heat the whole house;
- provides a steadier air temperature, reducing the likelihood of cold spots, condensation and damp;
- needs to have a cylinder to store domestic hot water. Gas or oil boilers can also work with a hot water cylinder, or combi boilers can heat up hot water instantly;
- may require more space in your house to host the hot water tank and buffer tank. The heat pump must be placed outside near an external wall.

Flow Temperature

A heat pump operates at a lower flow temperature (the temperature of the water circulating to the radiators) than a gas or oil boiler. Typically, a heat pump operates at 35-55°C compared with 70-80°C. Whilst gas and oil radiators feel hot to touch, heat pump radiators are lukewarm or even cool to touch. Given the lower flow temperature, a heat pump:

- heats your rooms more slowly. It should be switched on at least 2-3 hours before you need the room to be warm (some people keep them on 24 hours a day);
- requires a 'setback' temperature to be set (say 17°C), which is the minimum temperature that the house can fall to overnight if the heating is switched off;
- will cause less corrosion inside your water pipes and radiators;
- is less likely to overshoot the thermostat temperature and waste energy by overheating your house;
- will stir up less dust given the reduced convection;
- will struggle to cope with narrow radiator pipes (15mm is a good size);
- needs to have underfloor heating or radiators with a larger surface area.

Efficiency

A heat pump is far more efficient than a gas or oil boiler:

- a heat pump extracts heat from outside your house and as a consequence can operate at 250-400% efficiency;



- a modern gas or oil boiler only operates at 90% efficiency, but often even lower if the flow temperature is set too high (then the condensing feature doesn't work properly);
- a heat pump will work much more efficiently with in-built weather compensation, whereas this is an optional feature for gas or oil boilers. Weather compensation automatically adjusts the flow temperature dependent on the outside temperature.

Fuel and Carbon Emissions

A heat pump is powered by electricity. Unlike oil and gas prices, domestic electricity can be charged at different rates at different times of day in order to benefit both the supplier and the consumer. A heat pump:

- works well in conjunction with smart meters which enable access to cheaper tariffs;
- can be cheaper to run than gas, especially if combined with solar pv and/ or a storage battery;
- can provide nearly free hot water all summer if combined with solar pv;
- has far lower carbon emissions. With its high operating efficiency, a heat pump emits 65% fewer emissions than a gas boiler in the UK, and this is improving every year as our electricity grid continues to decarbonise. Meanwhile, a boiler burning gas or oil will continue to pollute for ever.

Safety

A heat pump is considerably safer:

- a badly maintained natural gas boiler risks death by carbon monoxide poisoning;
- natural gas can leak, and occasionally causes catastrophic explosions.

Part B: HEAT PUMP CONTROLS - A GUIDE FOR HOUSEHOLDERS

This guide is for an air sourced heat pump used to heat water filled radiators and provide hot water needs. It is based on a 7kW Vaillant Arotherm plus model, but most modern heat pumps will share similar features.

The Basics

The **flow temperature** refers to the temperature of the water that is circulated from the heat pump to the radiators or underfloor heating.

The **coefficient of performance** (or COP) is a measure of efficiency. It is the ratio of the electricity required to operate the heat pump versus the total useful heat being put into your house.

A heat pump circulates warm water round your radiators in a similar way to gas central heating but at a much lower flow temperature. The lower the flow temperature the greater the efficiency.

A heat pump is powered by electricity. Maximising the system's efficiency is important to reduce your consumption of electricity.

A heat pump works more efficiently the higher the source temperature (for example, if the outside air temperature is warmer) and the lower the required flow temperature.

What does 7kW output mean?

Domestic heat pumps typically vary in maximum heat output from 5kW to 15kW dependent on the size of the house and how well insulated it is. Fortunately, my 7kW heat pump does not use 7kW (7,000 watts) of electricity. A heat pump extracts heat from the outside air and boosts it to the temperature required. If



my heat pump is operating at a COP of 3.0, then it will use 2,333 watts when operating, although like a refrigerator, a thermostat will cycle it on and off.

A small 'buffer tank' helps to reduce the frequency of this on/off cycle.

Controller

There are four ways to control my heating system:

- Thermostats on individual radiators
- A controller (Vaillant sensoCOMFORT) with a built-in thermostat, fixed on a wall near the centre of my house
- A thermostat within the heat pump to measure the outside temperature
- An optional app to enable remote monitoring and control (which I didn't buy)

Temperature Settings and Timer (basic level)

There are four temperatures to be aware of:

- The temperature you want to heat your house to
- Individual room temperatures
- The 'setback' temperature
- Frost control temperature (set by the system at say 6°C)

I heat my house to 19°C which I feel is adequate if you wear a jumper in winter. Unlike heating your house with natural gas, with a heat pump it is best to heat the whole house to a similar temperature. There is therefore little need for thermostats on individual radiators.

If you use a room thermostat to reduce the temperature in one room this will reduce the surface area that emits heat. The remaining radiators in your house will have to run hotter to compensate. It can also create bottlenecks in the water flow around your radiators and cycle the system on and off more frequently – all reducing operating efficiency.

In a well-insulated home, there is an argument to maintain the same temperature in your house 24 hours a day. This will maximise the efficiency because running it all the time means that you are never trying to raise the room temperature by more than a fraction of a degree. A low flow temperature is therefore sufficient to keep your house warm.

However, warm air leaks out faster if your house is warmer. So, as a compromise between heating 24 hours a day and having the heating on when you really need it; you should switch heating off overnight, and perhaps for a few hours during the day if you are usually out.

However, if your house cools down too much, then your heat pump will need a much higher flow temperature to heat the house back up. To prevent this from occurring the system has a **setback temperature**. If the house falls below the setback temperature when the heat pump is switched off (eg overnight) the heat pump will override this and automatically cycle back on. I set mine to 17°C. If your house takes too long to heat back up, then raise this setback temperature.

The frost control feature is purely designed to protect your water pipes from freezing during periods when you switch your heating off completely, for example, if you are away on holiday during the winter.

Example (4-time bands)

- 4am-8am 19°C
- 8am-3pm, switched off, but setback of 17°C
- 3pm-10pm 19°C
- 10pm-4am, switched off, but setback of 17°C

Temperature Settings and Timer (advanced level)

My setup is more complicated as I have solar pv and a battery and I am on the flexible Octopus 'Cosy' electricity tariff. This provides cheap electricity between 4 and 7am and 1 to 4pm; with an expensive rate in the early evening 4 to 7pm. To minimise my use of electricity during peak rate I try to slightly overheat the house during the cheap time periods.

With the Vaillant controller you can split a day into up to seven different time bands, but this is probably overly complicated for most people.

My example (5-time bands)

- 4am-7am 19°C
- 7am-1pm 18°C
- 1pm-4pm 19.5°C (overheat)
- 4pm-10pm 19°C
- 10pm-4am, switched off, but setback of 17°C

Flow Temperature and Weather Compensation

Surprisingly, you don't set the flow temperature. Instead, you set the 'heat curve' (see below).

You may hear people saying that their "heat pump operates at 40°C". This isn't quite right. Your heat pump should have '**weather compensation**' which automatically operates the heat pump at the lowest suitable flow temperature dependent on the outside temperature. This greatly helps to improve efficiency.

For example, if the outside temperature is -5°C then you need a flow temperature of say 40°C to maintain the required temperature in your house. If the outside temperature is +10°C then a lower flow temperature of 30°C may suffice. The weather compensation feature adjusts this flow temperature automatically [incidentally if the flow temperature is less than 37°C body temperature the radiators won't feel warm – this is normal and doesn't mean the heat pump is broken].

If the temperature is very cold, say -15°C then a high flow temperature of 50°C may be required at which point the heat pump does become expensive to operate (but hopefully this is only for a few days per year). To avoid excessive bills, I have capped my maximum flow temperature at 45°C (which means my house may feel a bit cold in very cold weather).

Heat Curve

This is the complicated section, but I do feel it is important to understand.

A **heat curve** is the relationship between the outside temperature and the flow temperature of the water that the heat pump delivers to your radiators. Heat curves are a way to optimise the efficiency of a heat pump by adjusting how it operates based on the outside temperature. The goal is to provide just the right

amount of heat to maintain indoor comfort without wasting energy. A heat curve of 1.0 means that when the outside air temperature is one degree colder, the flow temperature will be one degree higher.

A heat curve is measured by a decimal fraction. Mine is set to 0.6. Vaillant provide a graph in their manual which shows the relationship between outside temperature and flow temperature at different heat curve settings.

A high heat curve means that the system will provide a higher flow temperature at any given outside temperature. For example, at -5°C outside, a high heat curve of 1.0 may provide a flow temperature of around 50°C, whilst a low heat curve of 0.6 may provide only 40°C.

The difficulty is that the optimal heat curve varies between every house dependent on the desired room temperature, the building's insulation properties, and the size of your radiators. Even the installer won't know the optimal heat curve and will may therefore 'play safe' and set it too high. Try turning it down and see what happens.

The key point is that to maximise efficiency you want to set the heat curve as low as possible. But, if your house isn't heating up quickly enough, then you need to increase the heat curve. Normally once the heat curve is set for your house you shouldn't need to change it again. However, in extreme winter conditions you may need to temporarily increase your heat curve (or increase your setback temperature).

Hot Water

We have a 190-litre insulated hot water tank. We set it to 48°C and time it to heat up between 1 and 2.30pm each day. This coincides with the highest likelihood of warmer air outside and, for us, free solar pv and our cheap electricity tariff. If you have no solar then you might want to heat your hot water up overnight on a cheap tariff.

Once a week our heat pump automatically heats the water to 60°C to prevent any risk of legionella bacteria from growing.

Note that the heat pump can heat hot water **or** provide central heating, but not both simultaneously. This means that in very cold weather our house can noticeably cool down between 1 and 2.30pm.

Coefficient of Performance (COP)

The COP is a measure of the efficiency of the heat pump. It is the ratio of the electricity required to operate the heat pump versus the total useful heat being put into your house. A higher COP is desirable.

In the UK, electricity costs around four times as much as gas per unit. Given that a gas boiler has an efficiency of 85-90%, you need a heat pump to have a COP of 3.4 to break even against the cost of natural gas. Of course, heat pumps have additional advantages over gas. They can be much cheaper to run if you have solar pv, a battery or can access variable rate electricity tariffs. They also massively reduce your carbon emissions (see my previous blog).

The highest efficiencies can be achieved by accessing a higher source temperature and/or operating at a lower flow temperature:

- Turn down your house thermostat to the lowest comfortable level
- Install large radiators, or underfloor heating



- Install a ground source heat pump - their source temperature tends to be higher (particularly in mid-winter) than for an air source heat pump

Be aware of the following:

- The COP is higher in the spring and autumn - the outside air temperature is higher than winter so the heat pump can use a lower flow temperature
- However, the COP in summer is lower - when your central heating is switched off the heat pump is only being used to heat your hot water (to 48°C) which is higher than the flow temperature required for winter heating
- Following on from the above point, a badly insulated home may have a higher COP than a well-insulated home. A higher proportion of your total heat is used to heat your rooms, with a lower proportion for hot water. Conversely in a well-insulated home, a larger proportion of your total heating is used for hot water.

So, achieving a high efficiency (COP) is important but is not everything. A well-insulated home will need much less heat and therefore will use less electricity and will cost less to heat.

Example

A well-insulated house may have an annual heat demand of 10,000 kWh and a COP of 3.4 = 2,941 units of electricity used.

A badly insulated house may have an annual heat demand of 12,000 kWh and a COP of 3.6 = 3,333 units of electricity used.

Calculating COP

The Vaillant controller provides information on the 'environmental yield,' being the amount of energy sourced from the outside air; and 'power consumption' being the amount of electricity used. 'Total power consumption' is the sum of the electricity used for heating plus hot water.

The COP is calculated by dividing the total energy input to the house (which is the sum of environmental yield + total power consumption) divided by the total power consumption.

Our COP averages 3.5 over the year. Around 2.2 in the summer months, 4.1 in the spring and autumn and 3.3 in cold winter months. The COP for the summer may seem poor but is mostly powered by 'free' solar pv.

Summer/ winter

You could leave your heating on all year; the thermostat will prevent it from switching on most of the time in the summer. However, you will waste electricity through stand-by losses and defrost cycles. I switch the heating off completely between May and October, leaving the hot water on only. I use the 'holiday mode' if I am away on holiday to temporarily switch off both the heating and hot water.

Conclusion

Manufacturers and installers should take note. You must write better manuals, in plain English, to help your customers. This will reduce the number of 'faults,' complaints, and remedial callouts required.

Carbon Choices: If you like my blogs, you might also enjoy my book, Carbon Choices on the common-sense solutions to our climate and nature crises. Available here [Buy \(carbonchoices.uk\)](https://carbonchoices.uk). I am donating one third of profits to rewilding projects. Follow me: @carbonchoicesuk ([twitter](#)) @carbonchoices ([Facebook](#)) @carbonchoices ([Instagram](#)).

[Heat Pump Controls \(carbonchoices.uk\)](https://carbonchoices.uk)

Neil Kitching, September 2024

Thoughts from an Organic Farmer - As the first frost beckons, time is up

For subtropical crops that rely on a good summer to grow in the UK, the time is up. As the sun's arc dips, temperatures drop, and moisture levels below ground rise, sweetcorn, maize (the less sweet version grown for cows), and the Solanaceae family (tomatoes, peppers, aubergines, and potatoes) are dying on their feet. Oh for a few more weeks of summer, to ripen the green tomatoes and maize cobs, and cure the skins of the squash for better storage. But the first frost is beckoning, and it is already becoming hard for machinery to travel on increasingly waterlogged land – so we must grab what crops we can and get them safely into the barn.



In our Devon polytunnels, we have already cleared all the cucumbers and re-planted with the rocket, claytonia, mizuna, dandelion leaves, mustard, and lettuces that will provide your salad leaves through the winter. Tomatoes, peppers, and chillies will be cleared over the next week, to plant more. Heartbreaking as it is to abandon the fruits, ripening has almost stopped, and with declining light, their flavour will be disappointing. It is critical to get our salad greens planted by mid-October, so that the plants can get established in good conditions.

This week, we will harvest the last of our Crown Prince squash. It is too late to sow a green manure (such as clover) in the empty fields before winter, so we rely on weeds to cover the ground, soak up any nutrients, and protect the soil from winter rains. As a young man, I would have worried about the chickweed setting seed, or docks and thistles strengthening their root reserves – but as the years pass, I am more sanguine about their place on the farm. These weeds were often a symptom of using too much, or too raw, muck; as we have moved on to using compost instead, we seem to have found a surprisingly comfortable coexistence.

Despite a cool summer, plenty of moisture has given us a huge crop of squashes. We have all but given up growing Butternut squash in Devon; our farm in France produces twice the yield for much less work, and the extra sun means they always taste and store better. Crown Prince squash, with its sweet, dense orange flesh under hard blue-grey skin, is unquestionably the best variety for UK farmers and cooks alike. Boxes of mixed squash will be available next week – we hope Riverford customers enjoy them.

Guy Singh-Watson, October 2024, farmer and founder and creator of Riverford Organic Farm

Useful Links

- www.harburyenergy.co.uk
 - [Warwickshire Low Carbon Network – Harbury Energy Initiative](#)
 - Community Energy Warwickshire Fund <https://www.heartofenglandcf.co.uk/wp-content/uploads/2020/12/CEW-2020.pdf> The fund aims to:
 - • Support the development and installation of renewable energy projects
 - • Encourage the sustainable use of energy and reductions in carbon emissions
 - • Promote public awareness of environmental issues and support educational initiatives
 - Available Funding - There's grant of up to £2,000. Funding must be spent within 1 year. [CEW-2020.pdf \(heartofenglandcf.co.uk\)](#)
 - [Energy Efficiency Grants | Stratford-on-Avon District Council](#)
 - [Green Homes Grants - Energy efficiency at home - Warwick District Council \(warwickdc.gov.uk\)](#)
 - [Net Zero – Stratford's home for community climate action \(netzerostratford.org.uk\)](#)
 - [Solar Soft Loans | Heart of England CE \(hecommunityenergy.org\)](#) HECE's Solar Soft Loans are a subsidised investment model. They are only available to schools and community organisations.
 - UN Climate Change Conference Baku – 11th – 22nd November 2024
[UNFCCC](#),
[UN Climate Change Conference Baku - November 2024 | UNFCCC](#)
[COP29 Azerbaijan - United Nations Climate Change Conference](#)
 - LGA Sustainability Roundtable | Behaviour Change within Sustainability.
[LGA Sustainability Roundtable | Behaviour Change within Sustainability | Registration Form \(office.com\)](#)
- The roundtable will take place on Tuesday 3 December 2024 between 10:00 and 11:45 and is open to and will benefit all officers with a responsibility for the sustainability, climate change and environment agenda.

Repair Cafés

- [Repair Cafés – Sustainable Warwickshire](#), (Alcester, Barford, Harbury, Kenilworth, Leamington Spa, Rugby, Stratford, Wellesbourne).
- <https://www.repaircafe.org/en/cafe/repair-cafe-southam/>
- <https://www.repaircafe.org/en/cafe/budbrooke-repair-cafe/>
- Napton on the Hill
- [Visit a Repair Café Near You \(repaircafe.org\)](#)

The Great Collaboration (1 hour) Banter Sessions for Town and Parish Councils

- [Banter sessions \(inc table of all sessions\) | Knowledgebase \(greatcollaboration.uk\)](#)
- [Banter 36: Bringing Solutions Together, 11Sep24, Paul White | The Great Collaboration Knowledgebase](#)
- [Banter 37: Waste and Recycling Regulations, 18Sep24, Matthew Coulter | The Great Collaboration Knowledgebase](#)
- [Banter 38: Why not underground?, 25Sep24, Graham Stoddart-Stones | The Great Collaboration Knowledgebase](#)
- [Banter 39: Postcode Revolution, 02Oct24, Jack Cooper | The Great Collaboration Knowledgebase](#)
- [Banter40: Water Efficiency at home, 09Oct24, Beverley Rogers | The Great Collaboration Knowledgebase](#)

Want to get involved? – Warwickshire's Climate and Environmental Action Groups

LCWN Steering Group member, Ian Wood, has mapped the locations of all the Warwickshire climate and environment community action groups in the Network.

[LCWN Map - Google My Maps](#) (right click, open hyperlink).

If there are still gaps or errors in your entry, or if you have a question, please let Ian know.

email: lowcarbonwarks@gmail.com



The LCWN aims to bring people together to share ideas and stimulate new activity in rural areas.

Keen to see real practical change in your community?

Are you part of a local low carbon group? Why not join us and the groups already in the Network?



For contact names and details see the May 2023 or earlier newsletters.

[LCWN-Newsletter-May-2023-issue-27.pdf \(harburyenergy.co.uk\)](#)

LCWN Facebook group

[Low Carbon Warwickshire Network | Facebook](#)

Set up by Emma Powell for everyone to share useful things. Please like and follow it. Please send any comments to lowcarbonwarks@gmail.com

(2) [Low Carbon Warwickshire Network | Facebook](#)

<https://www.facebook.com/Low-Carbon-Warwickshire-Network-101562702401683/>



Have your say— What do you want to see in future editions?

This is your newsletter and only as good as you make it – it is your opportunity to let us know what you wish to see in your newsletter: publicise any on-line events you are holding, let other community groups know what you are currently up to, share your experiences, let others know of interesting low carbon news .

Ideas, requests, offers, Q & A, hints & tips

Please send all copy (by 12th of each month), news items, case studies, details of events, comments, suggestions and enquiries about this newsletter to: lowcarbonwarks@gmail.com referring to the issue date and number for queries or phone Jacky Lawrence on 07906 440496.