# Future Energy Landscapes Workshop

## Lavant Parish: Tuesday 7th July 2025

**This write up summarises what happened and what residents of Lavant Parish said during the Future Energy Landscapes workshop in July 2025. It cannot be assumed to be representative of the full range of opinions in the local community but is an accurate record of this important conversation with Lavant residents.**

**Please read through this report and provide your views via our short survey here.**

## Workshop Background

The Centre for Sustainable Energy (CSE) developed the Future Energy Landscape workshop to enable communities to have informed conversations about their understanding and feelings about renewable energy technologies. Using data[1] and research into what technologies might be applicable to the area the workshop supports a hypothetical conversation about what scale and types of projects might be acceptable to local people and what impact would those technologies have on their local energy needs.

The workshop was supported by Lavant Parish Council and funded by the South Downs National Park Authority. The objective was to ensure communities are part of creating a local vision for sustainable energy enabling them to play a part in shaping ambitious plans as we transition away from fossil fuels.

## Why the Future Energy Landscapes workshop?

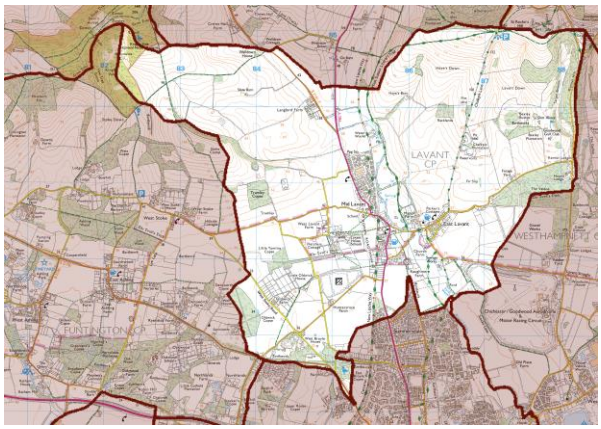
- Transforming the way that we generate and use energy is key to tackling the climate emergency.
- Generating more energy from renewable sources, so we produce less carbon is key to a transition away from fossil fuels.
- Communities need to be better informed about low carbon renewable energy technologies.
- Local people need to be consulted about the energy transition towards renewable technologies and supported to have informed discussions about the different solutions.
- Community energy should be recognised as an essential component of our energy transition so local communities benefit from renewable energy generation.

[1] See **Appendix 1** for details of the data, research and assumptions that have been used to build this workshop.

## Workshop summary

**Workshop purpose:** To explore the question '***How might Lavant power its community using locally generated renewable energy?'***

**Workshop boundary**: These workshops use the civic Parish boundary to pinpoint the discussion around an area that is familiar and frequented by the participants. It is an arbitrary boundary, but it is useful to focus the conversation on how acceptable people would find renewable technology in their local landscape.



**Lavant Parish** is located just on the outskirts of Chichester City and nestled into the southern slopes of the South Downs with views towards the ancient woodlands of Kingley Vale to the west and neighbour to the Goodwood Estate to the north and east.

**Workshop process:**

1. **Connect to the landscape,** considering areas that are important.
2. **Learn together** about different types of renewable energy
3. Have an **informed discussion** about how we feel about the technologies.
4. Discuss if and **where different technologies might be acceptable** in the local landscape.
5. Use graphs and data, to understand how much electricity and heat the different combinations of technologies would **generate,** the impact on current local energy needs and related carbon emissions.

## What was said?

After marking up maps and spending time sharing local stories about the local landscape and people's connection to it, the group watched short videos about the different renewable technologies that were locally feasible. In groups we then started a detailed discussion about the following technologies:

a) Wind Power
b) Solar Farm (12 Acres)
c) Domestic solar
d) Domestic heat pumps

Each group worked through the following questions:

- How do they feel about the technology overall?
- How much of the technology would they be happy to see in their landscape? (i.e. quantity of rooftops with solar or the no. of a particular sized wind turbine)
- Where might this technology be located?
- How does it impact the landscape? Who would this affect most?
- Is this a realistic suggestion and what might the barriers be to implementation?

### Impact of different renewable energy technologies

Each table fed back their reflections about their specific technology, and where they felt, and on what scale, the technology might be located, if at all, in the boundary of the parish.

The group's suggestions on the amount of each technology were inputted into the CESAR tool [2]. The CESAR tool, with simple graphs, shows how much energy is used by the local community, how much carbon that generation produces and how this might change by using renewable energy technologies to generate local power.

**Lavant in numbers:**

- 1,715 residents
- 882 homes
- 4,300 MWh electricity pa
- 3,300 tonnes $CO_2$ pa

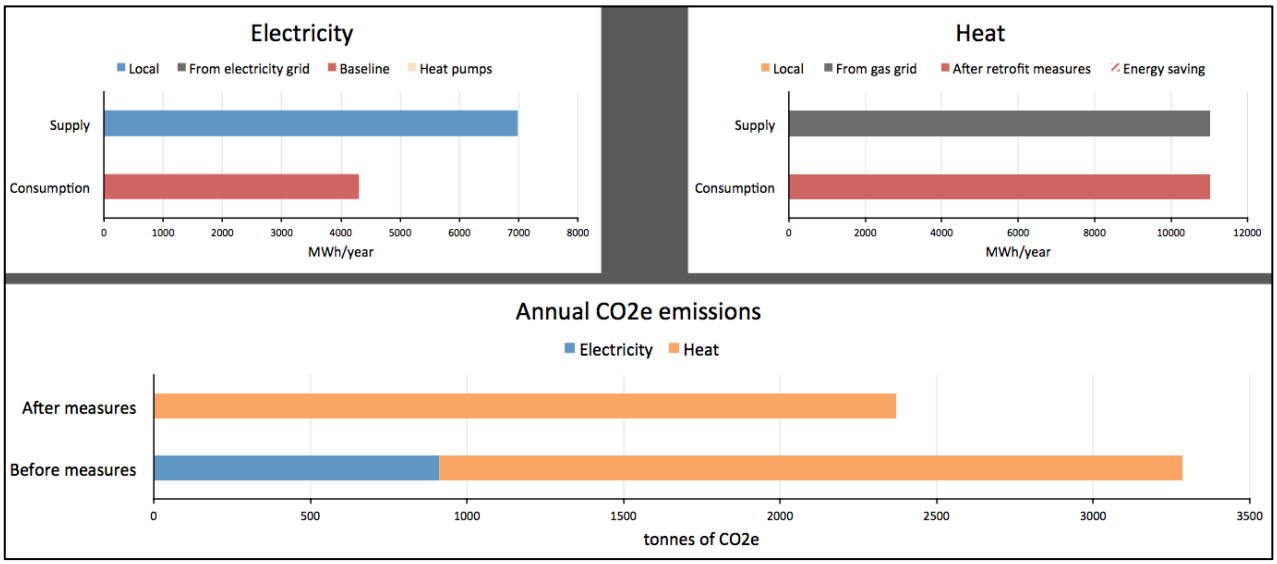
The ideas of the different groups and what the CESAR tool illustrated were then offered for further comment and discussion to the wider group.

[2] The Community Energy Saving and Renewables (CESAR) tool was developed by the Centre for Sustainable Energy and is designed to help workshop participants think about how they would provide some or all their energy needs from renewable energy and to see the different amounts of heat or power generated by the different renewable technologies in their local context.

## Wind Power

The first group looked at wind power and the table of five people felt generally enthusiastic about the technology with one member of the group voicing some concerns. It was recognised by Stuart, the facilitator, that this opinion was perhaps not likely shared by the wider community as workshop participants were self selected. The group had considered two to three large turbines to power their community so that excess power could then be sold on. They tempered that view because of assumed height restrictions around the Goodwood flight path and discussed having three medium sized wind turbines in the local area, 70 metre hub height plus a further 25 metres to the tip of the blade.

The group were then bold with their proposal for the location of these turbines – the Trundle and then along the line of the Downs to Langford Farm, possibly Hays Down because they were imagining using the south westerly prevailing winds coming along the line of the Downs.




**Impact of 3 x medium wind turbines on local electricity supply**

We then used the CESAR tool to understand how much energy three medium sized wind turbines could generate for Lavant. The above graph illustrates, with the blue bar in the electricity graph, that these turbines would generate 40% more electricity than Lavant currently uses and in so doing would hypothetically remove the carbon emissions associated with conventional electricity generation (the blue part of the carbon emissions bar 'after measures' in the lower graph).

By using Chichester Cathedral (84 metres high) as a comparison, it was pointed out that 100 metres to the highest point of the turbine was still incredibly tall and it could be almost impossible to get that accepted by local people.

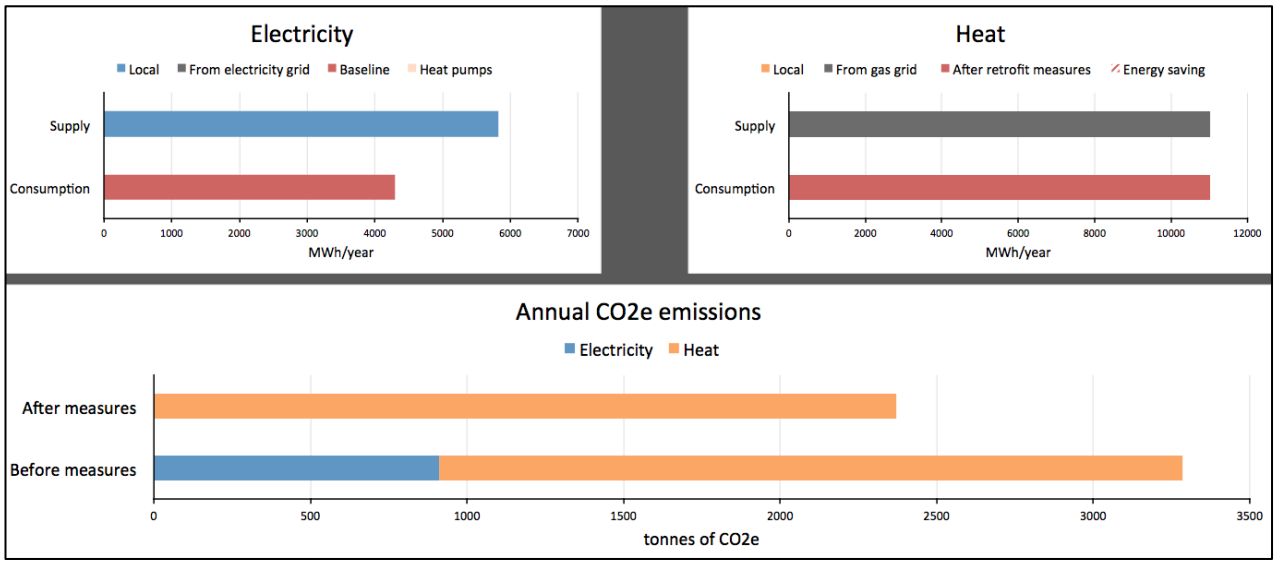
The wider group shared their reflections and discussed the following points:

- It might be assumed that local wind speeds towards the base of the Downs before the slope would be high enough. Thorough wind speed assessments

would have to be carried out to look at the feasibility of wind power but to make wind turbines practical the average wind speed has to be 6 metres per second with plenty of space away from trees and to allow appropriate spacing between the wind turbines.

- New onshore wind turbines have been effectively halted in England since 2016 but this planning law was changed last year by the new government.
- Anecdotally people suggested that it was getting more windy locally[3].
- In future, communities will be using a lot more electricity as we are electrifying heat and transport and moving away from burning fossil fuels so we will probably need about two and a half times the amount of electricity that communities currently use. The CESAR tool assumes current usage levels.

Before the conversation moved on to solar farms we looked at what one large wind turbine, standing at 140 metres to blade tip, would generate as a comparison. The graph below shows it generating almost as much power as the three medium turbines. The larger a turbine, the larger it's rotor so the greater area it sweeps and the power output of wind turbines is directly related to wind speed and the size of the rotor. This illustrates the trade off of having a number of medium / small wind turbines compared to one large, very powerful turbine with their different visual impacts in the landscape. However wind projects are potentially only viable with at least a 3 MW turbine which are even larger than the large turbine being discussed in the workshop.

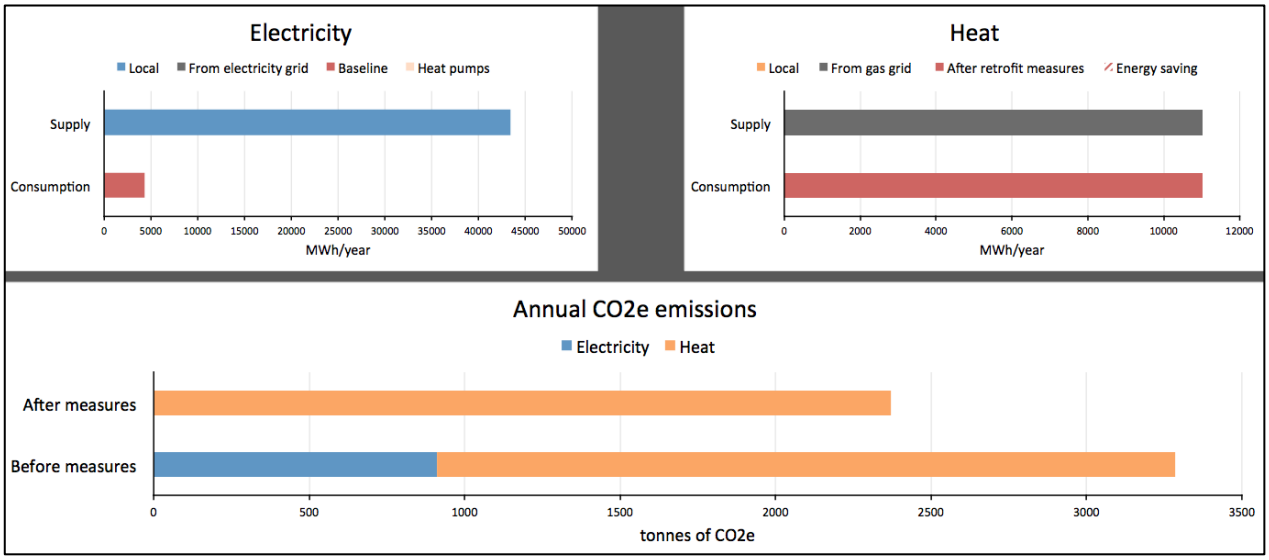



**Impact of 1 x large wind turbines on local electricity supply**

[3] There is nothing definitive about wind speeds though this article was of interest. https://www.swissre.com/institute/research/topics-and-risk-dialogues/climate-and-natural-catastrophe-risk/climate-change-wind-power.html

## Solar Power

The next group discussed their feelings about large scale solar power, specifically ground mounted solar farms in 12 acres plots. The table was extremely positive about the technology and felt that hypothetically there was real potential for solar in the area so imagined fitting in 18 x 12 acre[4] plots of solar. They went on to suggest that they could imagine them north and west of the motor circuit and by utilising the sunken fields and substation close to the existing solar farm at Hunters Race. They then started to think about the slopes of the Downs where they could place the panels closer together so generate more in a small area. Though the workshop leaves out of the discussion what may or may not be allowed by planning the room agreed that the slopes of the Downs would be impossible at the moment.




**Impact of 18 x 12 acre solar farm plots on the local electricity supply**

We again used the CESAR tool to look at the impact of the extensive use of solar farms suggested in the local area. They would generate about ten times the amount of electricity currently used in Lavant so would be covering future electricity needs, plus maybe supplying Chichester and dramatically reducing the carbon emissions! In reality the group suggested that one might look at the feasibility of a number of sites to identify a few that had the most potential rather than imagine 18 projects across the landscape.

The wider group shared their responses to the suggestion and discussed the following points:

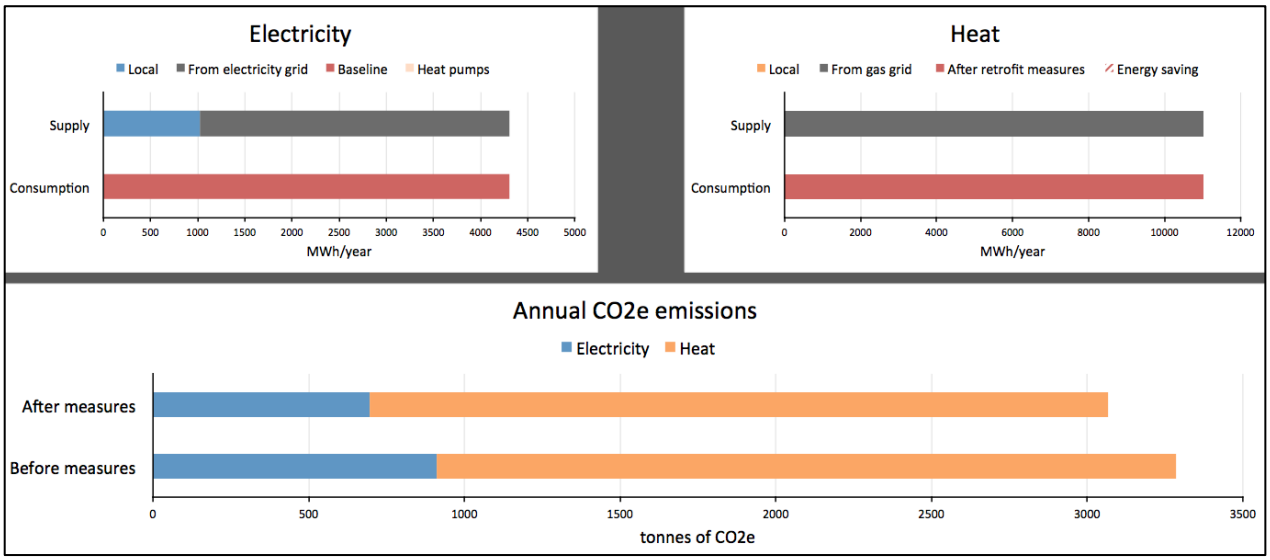
- Solar farms have to be on land that is fairly hidden from view and that is not high grade agricultural land therefore 3b grade or below.
- Communities have to be involved at the very start to ensure their concerns are raised and heard.

[4] For the purposes of the workshop the group discussing solar power looks at 12 acre plots (approx. 9 x football pitches) of solar panels. Most commercial schemes are significantly larger than that.

- Local pricing for local users would be a good way of selling a local proposal to local people as then people receive a direct benefit from it.
- Example in Lymington of a community energy owned solar farm, set up in 2014 , sited on an old landfill site, was funded by 500 local people buying community shares, generating 2.5MW, same power output as the 12 acre farm.
- The whole community energy industry is waiting for the government to change the law with the Local Electricity Bill so that locally generated electricity can be sold locally. At the moment, it's not possible to do that and Power for People are campaigning for the important change that is yet to be passed despite strong Parliamentary cross-party support.
- Question raised about SMRs (small modular nuclear reactors) – nuclear is likely to be part of the energy mix but not at a community level as SMRs are still a third of the size of regular reactors and might employ about a thousand people. They are therefore not really 'small' and yet to be proven as modular and there is no clear solution about what to do with the nuclear waste.

## Domestic Solar

This group had the task of discussing the domestic use of solar on roofs and gave the technology an overall score of five out of five for acceptability and felt overall it was a 'no brainer' particularly on new developments. However when they thought about the cost, and affordability as well as the housing stock they imagined only 30% of Lavant homeowners having solar in the future.




**Impact of 30% of homes having 10-12 solar panels**

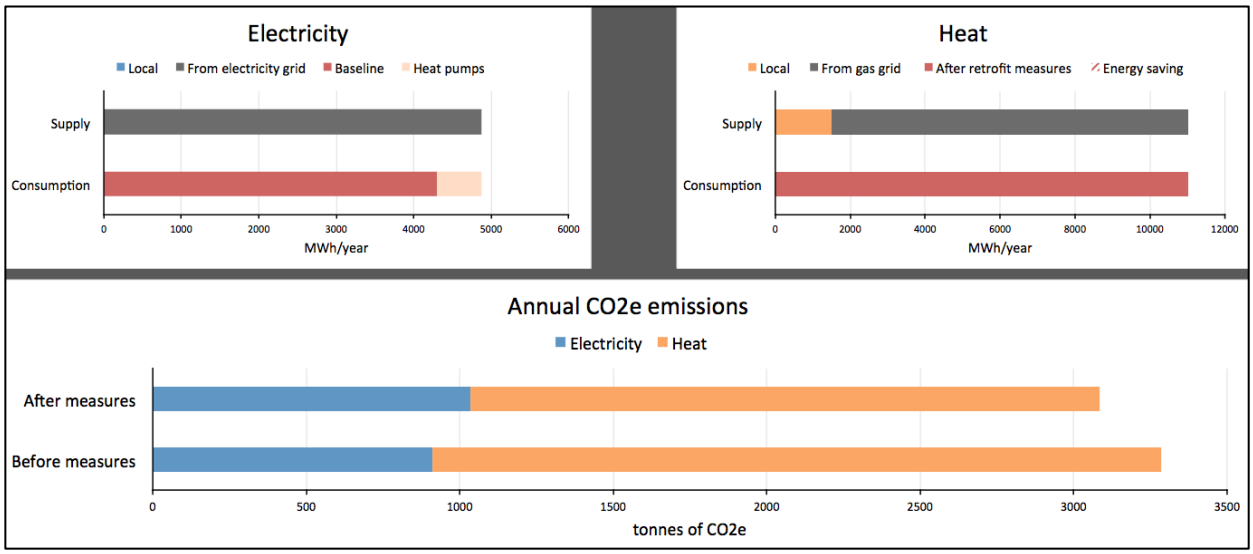
The graph shows that with a third of local households having solar installed that would meet about a quarter of the local current electricity consumed which in the CESAR tool includes non-domestic use. As a smaller scale domestic technology it would mean less electricity is needed from the grid, so less larger scale, high visual impact renewables would be needed and they would create an overall reduction in $CO_2$ emissions.

It was commented that the local housing association, Hyde Housing, is installing solar on a number of local homes at the moment which is likely the result of a government social housing grant.

## Heat pumps

The final technology that was discussed was domestic heat pumps and the group admitted to focusing mostly on airsource heat pumps. Ground source heat pumps work better with larger homes so they felt they were less locally applicable. They scored the technology 3-4 out of five with some a bit concerned about noise but the main concern was the initial installation costs. They recognised that heat pumps produce 80% less $CO_2$ than a gas boiler whilst the visual impact was negligible however they were currently often quite expensive to install. They agreed that there was the need for better financial incentives to encourage people to have a heat pump as the current grant is not sufficient to fully offset the cost of converting your house to have a heat pump. The running costs are also not significantly cheaper than a gas boiler so there is a need for the unit cost of electricity to go down so that they become more affordable to run.

They proposed a modest local uptake with 15% of homes having an air source heat pump in the future but felt a little optimistic as all the new homes in the recent local housing development all had a heat pump installed. All new homes built from next year will now have to have heat pumps as per the [Future Homes Standard].




**Impact of 15% of local homes having an air source heat pump**

The graph above shows the impact of 15% of homes taking on an air source heat pump which would make a contribution to the overall heat demand of the community, whilst requiring a bit more electricity to run them but reducing the overall carbon emissions.

The table and wider group also picked up on the following points:

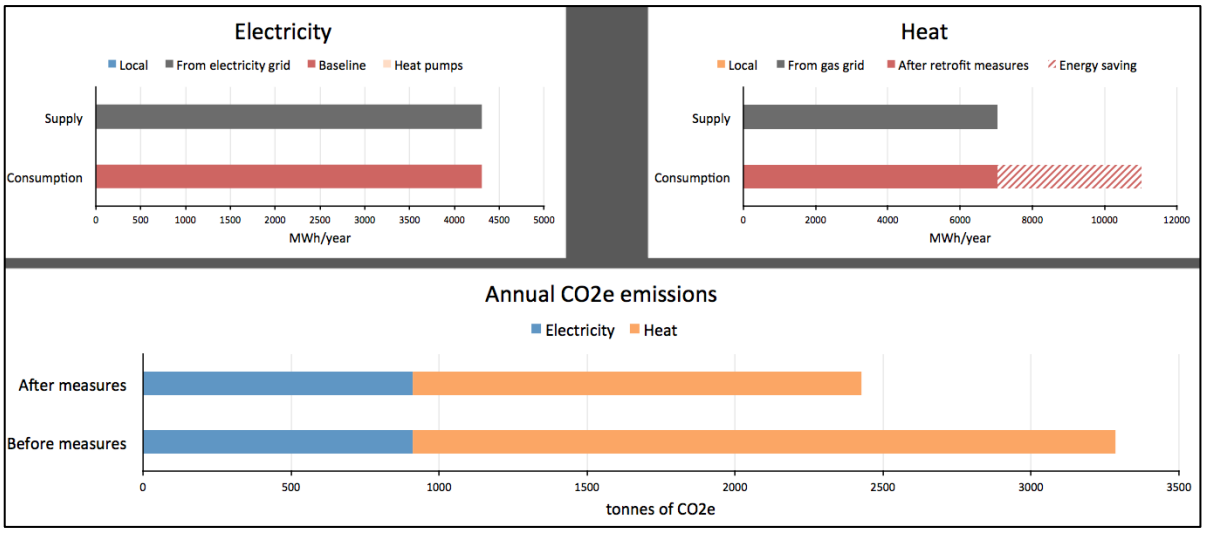
- Air to air pumps are also an option and they are cheaper to install. They blow hot air into the home rather than putting hot water into a radiator system and work like a reversible air conditioning unit. They are used more in the US and Canada but perhaps we have a cultural preference in the UK for water based heating systems.
- A useful way to enable communities to understand domestic renewables and inspire a greater take up is to run open home events where neighbours and residents can see a heat pump in situ and learn about how it works.

## Retrofitting

As was highlighted by the final question of the evening, any community discussion about energy must start with seeing what house owners can do to reduce their energy demand.

The CESAR tool allows us to look at how making homes more thermally efficient could reduce the heat demand, and therefore the energy required by Lavant Parish, based on some broad assumptions made about the local housing.

We suggested that 20% of local homes were built pre-1930 and 50% were built between 1930-1990 with 30% of homes built after 1990.




**Impact on the heat demand following a local retrofit programme**

The above heat graph, with the dashed red bar, demonstrates that energy efficiency measures like draught proofing, insulation and double or triple glazed windows to improve the energy efficiency of the lowest performing houses, could reduce the local consumption and heat demand of Lavant by a third. This demand reduction is the important starting point but it has to be carried out by the individual household and so it is hard to influence. Reasonable retrofitting would reduce the amount of energy needed to heat these homes and therefore we see an important reduction in the carbon

emissions from heating before even looking into domestic level or larger renewable infrastructure generation.

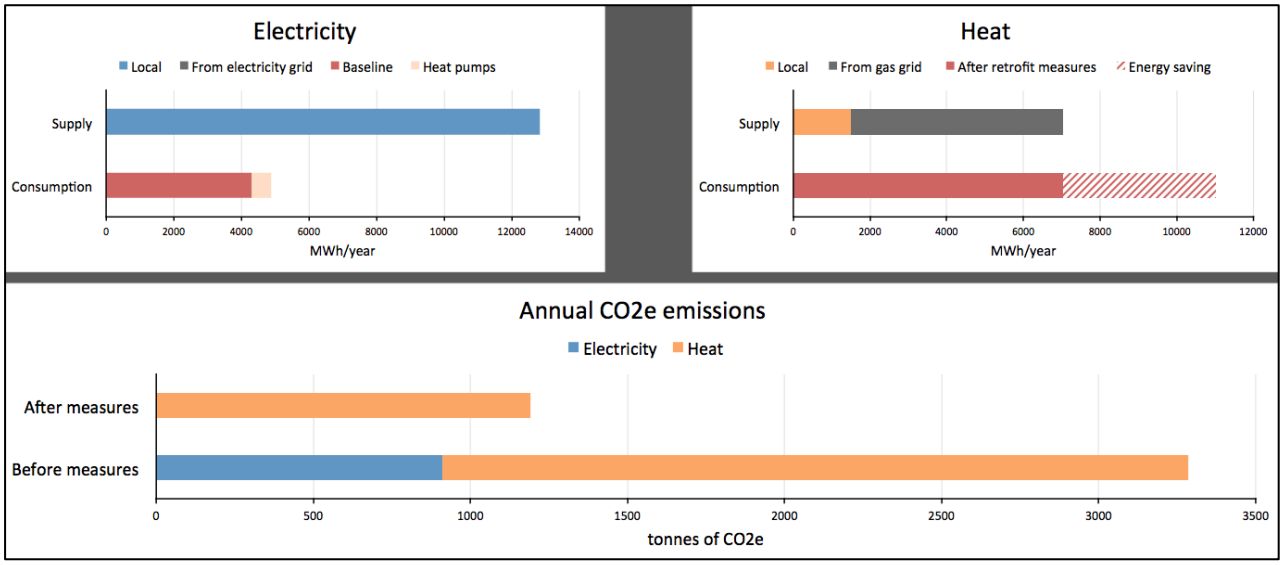
## Technologies in combination

As was discussed by the different groups, none of the technologies hold the complete answer so the CESAR tool was used to see what might be generated if we were to combine all the technologies.

For this we input into the CESAR tool all the technologies along with how much each group had suggested was acceptable in the local area to see what the impact would be on supply and demand. We also included the energy efficiency retrofit measures explained above.

As a reminder the technologies that the groups felt could hypothetically be part of Lavant's future energy landscape were:

- 3 medium wind turbines
- 2 x 12 acre solar farm (rather than the 18 originally discussed)
- 30% of homes with 10-12 solar panels
- 15% of homes with an air source heat pump




**Lavant Parish's Future Energy Landscape**

By reimagining the local energy system in this way Lavant could hypothetically remove over 60% of its carbon emissions from its current demand of heat and electricity from the burning of fossil fuels. The community could dramatically reduce the amount its local heat demand through a retrofit programme, whilst generating three times as much electricity as it currently uses.

## Conclusion and recommendations:

It was a great to have the Parish Council and local people of Lavant come together to share their thoughts about different renewable energy technologies and also learn from each other about how the different technologies work and what could be acceptable where they live.

This was a hypothetical conversation where we put to one side constraints such as planning, cost and grid capacity. These are very real practicalities, particularly in the South Downs National Park and would have to be considered to initiate a future community energy project.

The idea is to provoke local awareness and spark ideas about how we can all play our part in the energy transition. Here are a few suggestions from the workshop that the local community might take forward:

- Share this report and Lavant community survey more widely so that as many people in the local community can share their thoughts.
- Develop opportunities to share peer to peer experience of domestic renewables particularly heat pumps ie develop local case studies.
- Explore conversations with local landowners about the potential for solar, albeit small community owned projects (see above for suggested sites)
- Ensure the local community is kept informed of changes to funding around domestic solar and heat pumps.
- Identify opportunities to support local homeowners with how they might better insulate their homes, signposting to advice or using a thermal imaging camera to show the leaks.
- Support and champion the Local Electricity Bill by following Power for People.
- Mobilise local people to put pressure on the local authority to demand and enforce higher standards from developers building new homes in the area.

There is no simple solution but this workshop format demonstrates how local action can be shaped as people learning together in their local context. Sometimes these community conversations open local possibilities about generation projects but they also highlight what is critical and needs to be done at a national level through policy to help us all transition away from fossil fuels.

## Appendix 1 - Tools, assumptions and research

### Tools

**Future Energy Landscapes:** toolkit here

**CESAR (Community Energy Saving Renwables) workbook:** Showing renewable energy generation in relation to how much energy the community uses and the impact of renewables on carbon emission reduction.

**Impact Tool:** An estimator of a community's carbon footprint that works for parishes, wards, district councils and unitary authorities here.

## Assumptions

### Onshore wind and solar farms

Assessments of suitability of landscape for different technologies represent an upper bound estimate and do not take full account of the impacts associated with potentially limiting characteristics (proximity of roads, railways land type etc.) (LUC, 2018). Spacing of wind turbines is based on an allowance of five times the rotor diameter (LUC, 2018).

### Rooftop PV

Suitable rooftop is defined as one on which a minimum of a 1 kW solar PV system can be installed (8 m2 rooftop area required), with an orientation east through south to west and at an angle between 15° to 70° (Palmer et al., 2018).
Analysis suggests that in the City of Southampton district 67% of rooftops had one area that satisfied the criteria (Ridett and Anderson (2023), p19), while in the wider Winchester City area 78.8% had a rooftop surface that was deemed as suitable for a rooftop PV installation of at least 1 kW (Ridett and Anderson (2023), p20).
These figures are likely to represent an upper bound estimate of solar PV potential. For the purpose of the CESAR tool, an estimated potential of 75% suitability would provide a realistic upper bound estimate.

### ASHP/GSHP

Based on assumption that dwellings need to be reasonably airtight and well insulated. Significant proportion of post 1990 houses plus an allowance for others that might have had deep retrofit we assumed 50% of homes could have an ASHP. We then considered that older homes in the centre of the towns / villages would have bigger gardens so assumed 25% would have room for GSHP.

## Research

LUC (2018), Renewable and Low Carbon Study for the East Hampshire District, p48

Palmer D., Koumpli E., Cole I., Gottschalg R. and Betts T. (2018). A GIS-based method for identification of wide area rooftop suitability for minimum size PV systems using LiDAR data and photogrammetry. Energies, 11(12): 3506

UK Government (2023) Figures for English Housing Survey headline report 2022 to 2023.

West Sussex County Council (2024) Energy Strategy 2024

Chichester District Council Climate Emergency Action Plan (2019 and consultation and review 2024)