Future Energy Landscapes Workshop

Hambledon Parish: Thursday 23rd October 2025

This report summarises what happened and what residents of Hambledon Parish said during the Future Energy Landscapes workshop in October 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 Hambledon residents.

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

HAVE YOUR SAY About Hambledon's Future Energy Landscapes Workshop – Fill in form.

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 funded by the South Downs National Park Authority (SDNPA). 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.

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

- 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.

Workshop summary

Workshop purpose: To explore the question '***How might Hambledon 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.

Hambledon Parish is a small historic village in Hampshire within the beautiful South Downs National Park just north of Portsmouth. It has a vibrant community, with historic sites such as St. Peter & St. Paul Church and beautiful, scenic countryside walks. It is famous as the "Cradle of Cricket" and home to England's oldest comercial vineyard.

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
e) Anaerobic Digestion

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

Hambledon in numbers:

- 1,030 residents
- 450 homes
- 2,300 MWh electricity pa
- 1,850 t CO_2 pa

[2] The Community Energy Saving and Renewables (CESAR) tool was d
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.

change by using renewable energy technologies to generate local power.

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

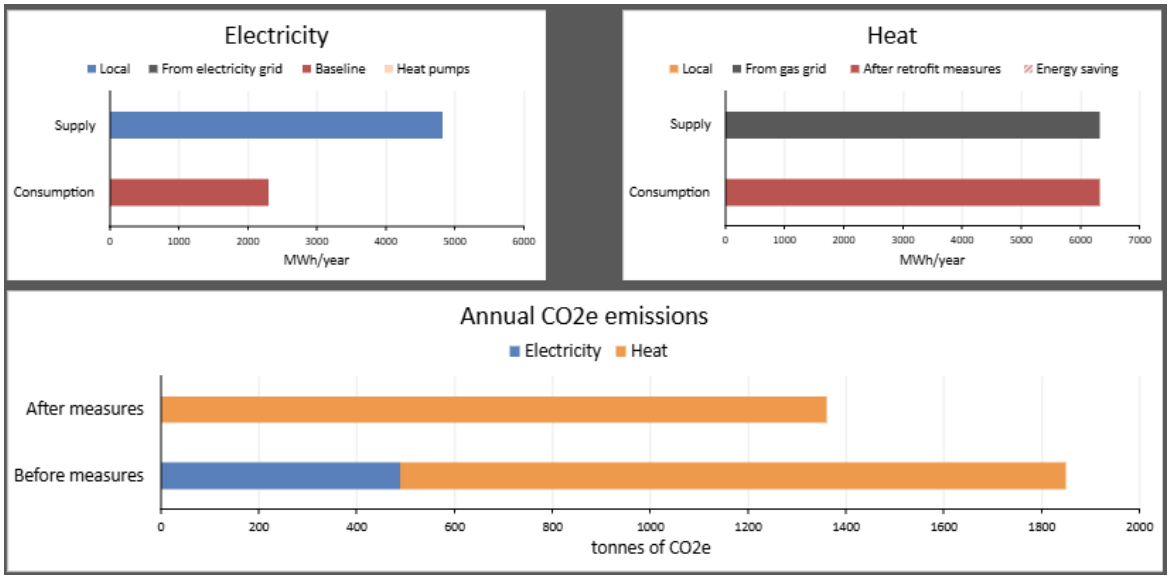
Solar Power

The first group were enthusiastic about solar power but felt more challenged by the technology when they considered it in their own landscape.

It was felt there would be more enthusiasm if the energy generated could be used locally and be seen to power Hambledon. However, it was noted that there are currently no mechanisms to enable local use of locally generated energy, it goes into the grid.

There was generally a preference on the table for rooftop solar e.g. industrial rooftops and carparks rather than agriculture land and they felt that any new housing rather than older houses should have solar panels.

Despite the reservations the group were keen to look at 2 x 12-acre solar farms but were unclear where it would go. The north part of the parish was considered the best place as it is the least populated and in theory would be seen by fewer people. It was however pointed out the south facing slope that was an area identified would be unlikely to get planning permission because of the visual impact.



Impact of 2 x 12-acre solar farm on the local electricity supply

The electricity graph above with the blue line shows that 2 x 12 acres could generate approximately twice the amount of electricity currently used by the local community to power their homes as well as removing all the carbon being emitted from national electricity grid generation (bottom graph).

The wider group shared their responses to this table's suggestion and discussed the following points:

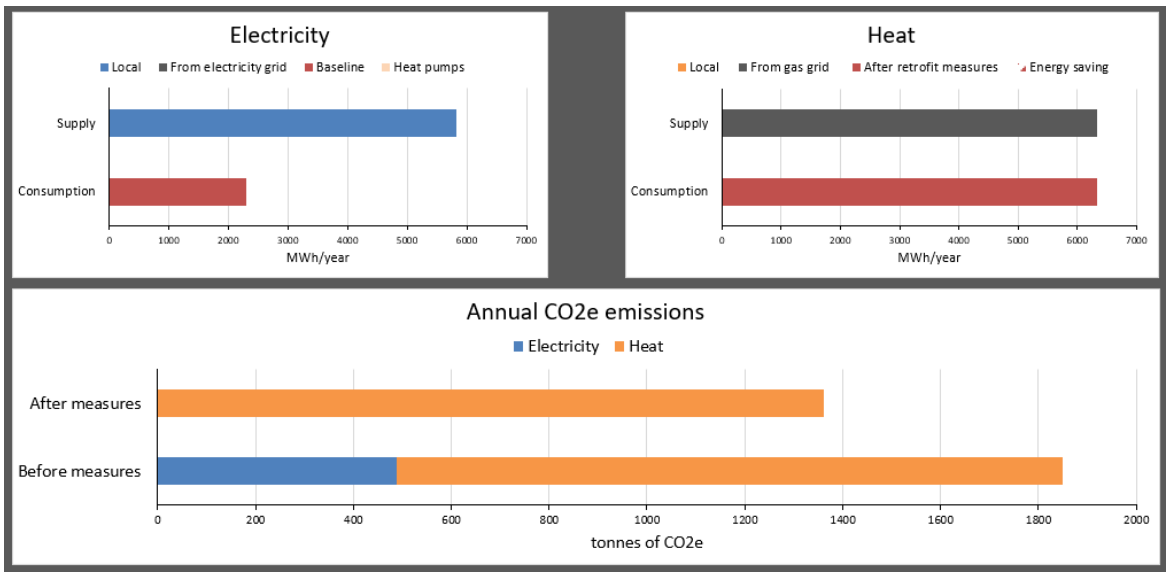
- There are ways in which local people can benefit from locally generated energy even though the electricity must go to the grid. For example, commercial developers can apply for a community benefit fund or if the energy is owned by the community through local investment a dividend can be paid to shareholders.
- A private wire is an option for large energy users. For example, at Energise South Downs Britannia Reeves & Broadway Park Solar Project a static home site is provided with electricity directly from rooftop solar on the nearby Britannia Reeves Removals firm buildings.
- A solar farm in the Hambledon location is also challenging because there is no substation
- Farmers won't want to use land for solar and planning permission is rarely given to install ground mounted solar farms on highly productive farmland.
- Agrivoltaics is an alternative not yet adopted in the UK. This is elevated solar photovoltaic. The panels are translucent and use the land & light twice. Used for specific crops or for grazing sheep that benefit from being protected.
- Agrivoltaics stops the land drying and workers can operate underneath it. It costs more and there is an increased visual impact but is a win-win outcome.
- Another potential benefit of solar farms is increased biodiversity because mono-arable crops, heavily sprayed can be replaced with grasses and wildflowers leading to biodiversity net gain.
- It's estimated that less than 1% of farmland would be needed to fully decarbonise the electricity grid, while over 1% of all land in the UK is currently used for golf courses.

Wind Power

This group had a wide range of levels of enthusiasm for wind turbines which are much bigger than some imagined. The main concern being the visual impact.

There is a lot of wind in the village with a southwest prevailing direction and there has been a proposal for a wind turbine before and there was once a windmill. The group explored the landscape for potential sites focusing on the high points and areas not close to the village. Old Hill was notable and Rushmere.

Small and medium wind turbines were thought of as better in terms of mitigating some of the visual impact. The group imagined a future where wind technology is more aesthetically acceptable such as treelike structures without blades and garden turbines based on 'Spiral' technology.



Impact of 1 x large (150 meters high) wind turbine on local electricity supply

Overall, the group thought wind turbines are not suitable for Hambledon and did not come up with a proposed number for the parish.

They were however keen to look to a future where Hambledon can generate electricity in a way that would benefit the community as well as protect the landscape. If this were possible with wind turbines then the technology maybe become more acceptable.

The group wanted to understand the impact of wind technology compared to solar and the above graph shows that one large turbine (150 meters high) generates more than twice as much as a solar farm and 2.5 x the amount of electricity used in the parish.

The wider group shared their responses to this table's suggestion and discussed the following points:

- There are 3 wind turbine sizes. Large (150 meters high to tip of blade), medium (100 meters hight to tip of blade) and the small wind turbine (65 meters high to tip of blade). There is a logarithmic relationship between electricity generation and height. Twice the height generates 4 x the electricity. Hence most wind turbines are large because commercially they make more sense.
- Offshore wind is more efficient however more expensive to build and maintain.
- Turbines must be positioned at least 500m away from residential areas to avoid noise disturbances.
- Some interesting data regarding wildlife protection and energy generation - in the UK, the existing wind turbines kill roughly between 100,000 and 200,000 birds a year. Domestic cats however kill 40 million birds a year.
- Fossil fuel generation also impacts wildlife. For example, at Fawley gas fired power station near Southampton – 100,000 fish per year are thought to die per year on the cooling grills.

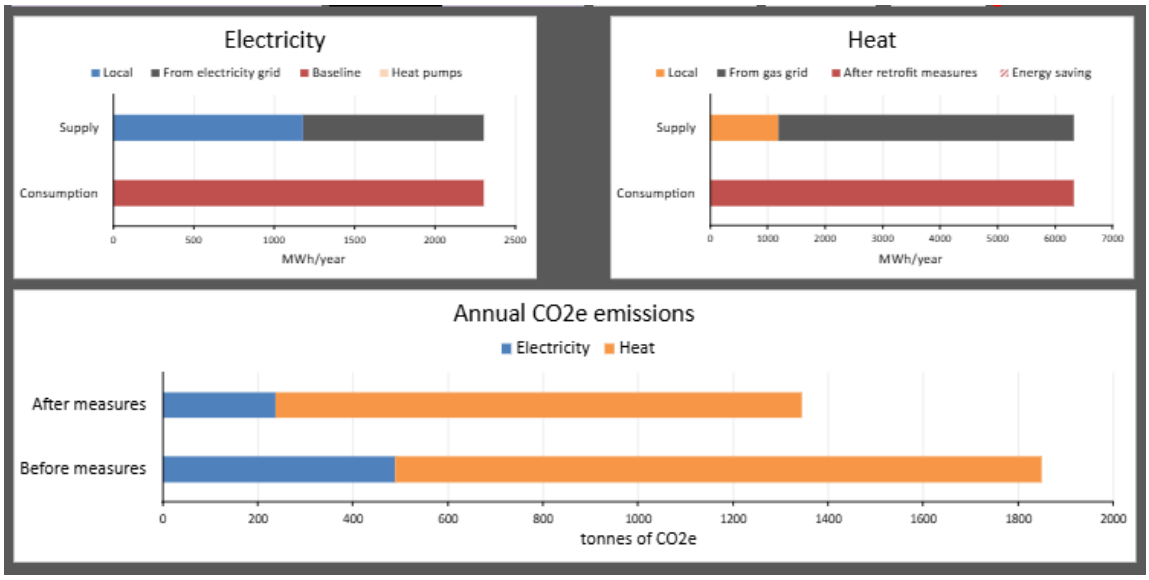
Combined Heat & Power (CHP) - Anaerobic Digestion

The last large scale renewable technology looked at was anaerobic digestion. The group looking at this technology were generally not in support of it and scored it at about two out of five in terms of acceptability.

The group recognised the benefits of the technology in terms of it being one smallish industrial building and therefore having low visual impact compared to the other large-scale technologies, solar farms and wind. It was noted that the waste from the vineyard in the parish could possibly feed an anaerobic digester. Other benefits noted included a steady income for farmers. However, it was felt unacceptable to grow crops that are not for food and 125 acres taken out of food production was thought to be a big impact locally.

Other significant concerns were inconsistent power and heat due to fluctuating crop yields and concerns that where the crops are grown elsewhere, they must be brought in in trucks to feed the digester. It was felt this is counterproductive in terms of environmental impact. Also, the cost of digging up roads to install the network of pipes to supply heat to houses is not realistic and would be a limiting factor.

The group felt anaerobic digestion may be more suited to urban areas where there might be food waste to be feed into the digester instead of crops.



Impact of 1 anaerobic digester supplied with crops from 125 acres

The group did not propose any potential areas for an anaerobic digester in Hambledon.

The graph above demonstrates hypothetically the impact of one anaerobic digester installed and supplied with crops from 125 acres. The power produced would supply about half the electricity used in the parish and just under a quarter of the heat, also removing over a quarter of carbon emissions.

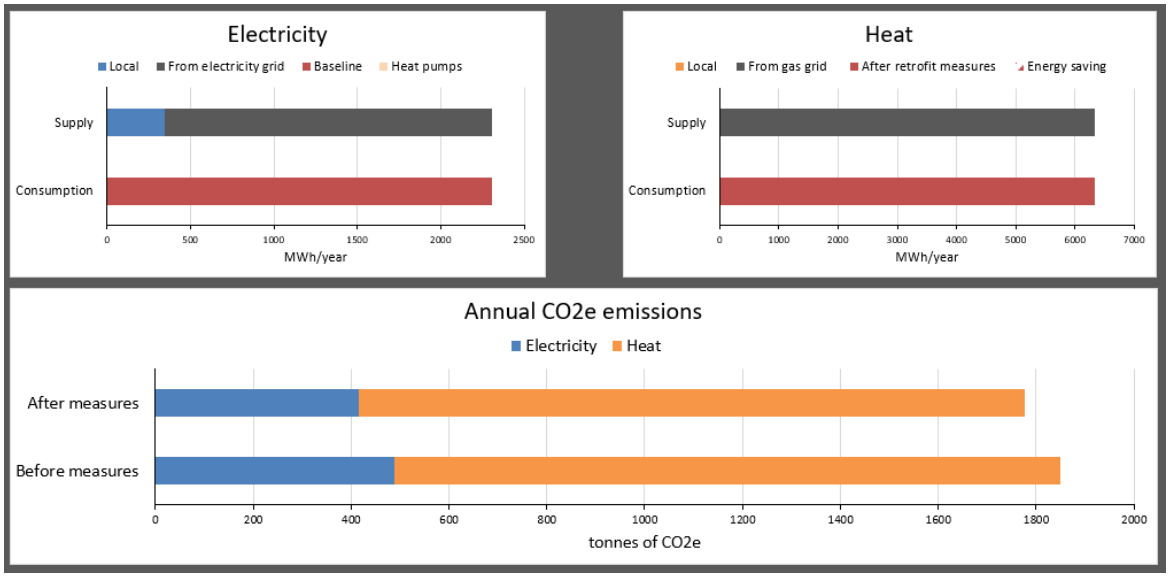
The wider group shared their responses to this table's suggestion and discussed the following points:

- Anaerobic digestion uses biological processes to digest crops, animal or food waste to produce methane gas. The gas is used in a turbine / engine to generate electricity and heat.
- The heat is transported as a local district heating network, e.g. Swaffham Prior in Cambridgeshire - where this has been done for 130 homes – but it is expensive to retrofit.
- Easier on new developments e.g. Welbourne in Fareham where they are going to heat 6,000 homes from an aquifer / underground reservoir. Water source heat pumps will be connected to a district heating network to the homes. Because it's a new build, they can put all that infrastructure in while they're building it.
- Currently, 30% of the maize that is grown in the UK is used for anaerobic digestion – so this method is already happening at reasonably large scale.

Domestic Solar

The group looking at domestic solar panels thought that the current technology design would probably destroy the appearance of the village but assumed that future designs would look more like roof tiles as is demonstrated at the Sustainability Centre, where panels are almost impossible to see. There was a range of levels of acceptability for domestic solar with concerns about the look, and their cost to buy and repair.

The group pointed out that the big problem for Hambledon is the valley location with most gardens having large trees with many houses in the shade a lot of the time. There was interest in the possibility of using other industrial buildings, like the school, vineyard, farm buildings and the church for solar rooftops.



Impact of 20% of local homes having 10-12 solar panels

The group proposed that due to the location that it may be possible to get 20 - 25% of houses in the village fully covered with solar panels, at some future date. The above

graph demonstrates the impact of 20% of houses in the village with domestic solar panels. The power generated would supply between 10-15% of the electric used in the parish reducing carbon emissions by a small but still a significant amount.

The wider group shared their responses to this table's suggestion and discussed the following points:

- Small pockets of roof solar panels on commercial buildings supplying several houses would be more acceptable.
- Solar panels in gardens were considered as being possibly acceptable and it was noted that outside the SDNP it is permitted development to have up to 9 square metres of solar panels in a garden.
- A storage battery can substantially increase the capture and utilisation of solar. The battery here in the village Hall increases our conversion rate of solar power from 30% to 50%.

Heat Pumps

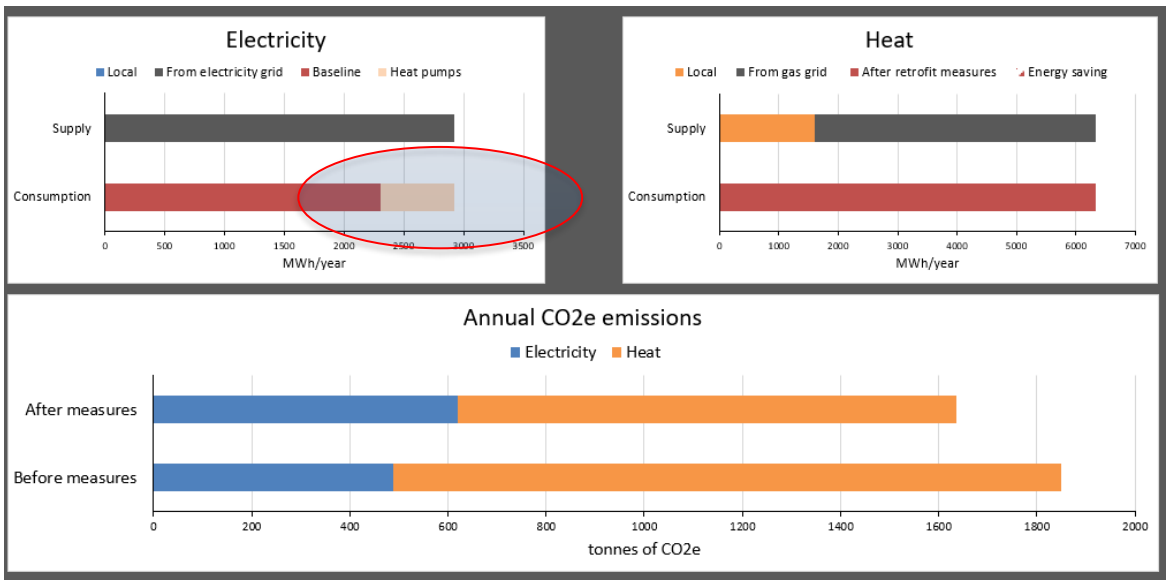
The final group looked at heat pumps. There was a range of heat pump knowledge in the group. The technology was thought acceptable in the landscape due to low visual impact, but the overall acceptability rate of the heat pumps was agreed at between 1- 3 with cost of installation and noise being the main areas of concern.

People in the group with experience of installing a heat pump said that they are only worth installing with the government grant. This is currently £7,500 which sounds a lot but is insufficient to offset all the additional cost in larger properties. There was indication of more people wanting them if the government would pay for them.

Whilst it was considered a myth that houses need high levels of insulation to receive a grant there was experience in the group of grant applications being refused for this reason. This condition for the Boiler Upgrade Scheme was removed nearly two years ago.

Regarding noise the group described experience of heat pumps producing sound especially amongst buildings that carry the effect. Significant impact of noise at night from a neighbour's heat pump was mentioned. This is not thought to be typical but doesn't help the individuals affected.

The government completed a consultation last year because previously there had been a requirement of minimum of 1 meter gap between a heat pump and the boundary of the property. However, there were fewer noise concerns about the technology than they were expecting, and this requirement has now been removed.



Impact of 30% of local homes having an air source heat pump

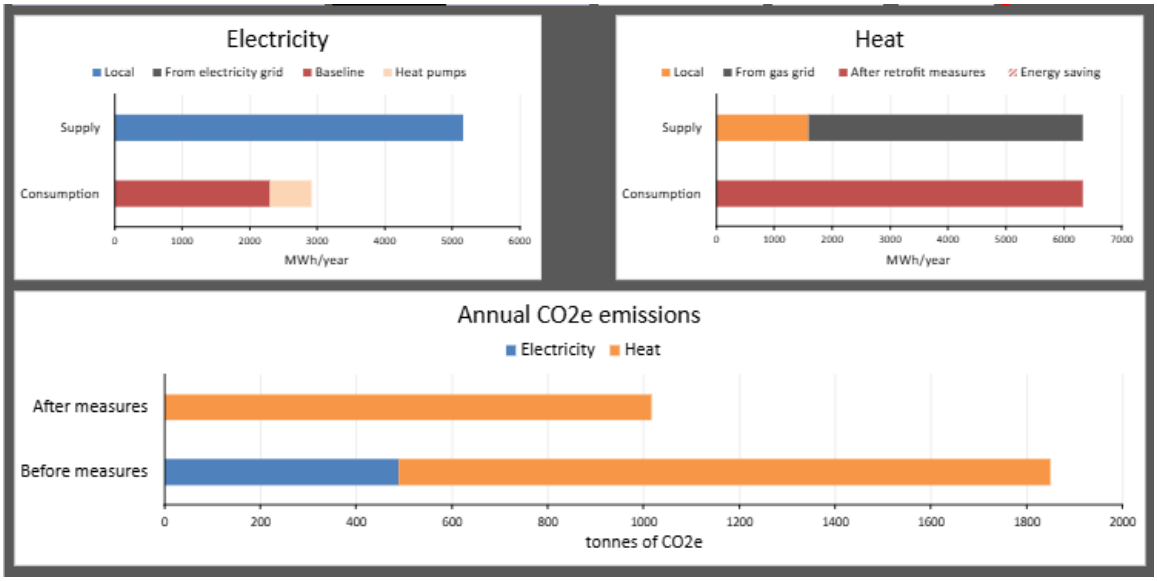
For the purposes of the exercise the group looked at what the impact would be if 30% of local homes installed a heat pump. The above graph illustrates that with this level of uptake, heat pumps would meet almost a quarter of the heat demand (see the orange line in the heat graph) for the parish whilst reducing carbon emissions from heat production. Heat pumps do use electricity so that would drive up demand for electricity (see the circled bar on the first graph). However, heat pumps produce three to four times as much heat as they use in electrical energy so they use much less energy and are a critical part of decarbonising how we heat our homes.

The wider conversation about heat pumps included the following points:

- The current government aims to reduce the use of fossil fuels to produce electricity for the national grid from 40% to 5% by 2030 meaning heat pumps of the future will be an even lower carbon technology
- There are schemes called Visit a Heat Pump around the country which are worth looking into where people can visit homes that have a heat pump installed and talk to the owners about their experience.

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 the technologies.



Hambledon's Future Energy Landscape

The above chart represents the combination of the technologies discussed (though we ran out of time so not demonstrated) at the workshop.

- 2 x 12 acres of solar farms
- 20% of homes with 10-12 solar panels
- 30% of homes with an air source heat pump

By reimagining the local energy system in this way Hambledon could hypothetically be emitting just over half the current carbon emissions, producing more electricity than is needed and meeting about a quarter of the heat demand.

Retrofitting

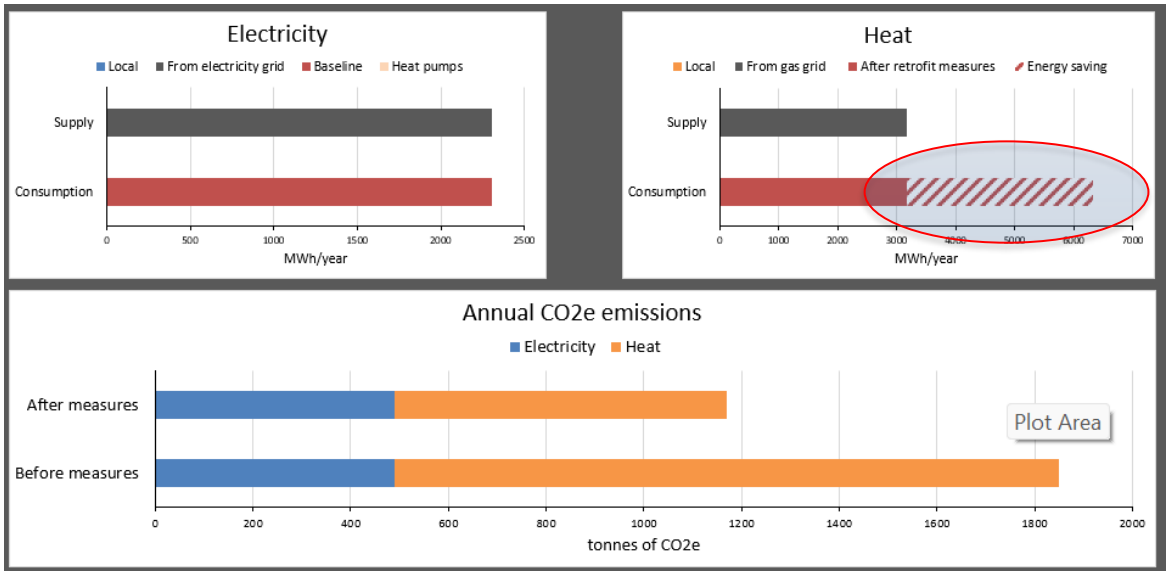
Retrofitting is making your home more thermally efficient, reducing the heat your home loses and the amount of energy you need. It is the other side of the equation from energy generation.

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 the Parish, based on some broad assumptions made about the local housing.

We looked at the mix of houses in Hambledon and estimated:

- 55% of homes, pre-1930: These homes were built using traditional methods, without cavity walls, no damp proof courses, built to allow the free passage of moisture, quite leaky properties in terms of heat. Thermal improvements might include secondary glazing, loft insulation and draught proofing
- 25% of homes, 1930 to 1990: These homes were built with modern construction methods but at a time when insulation was not required by building regulations. Thermal improvements might include cavity wall insulation.

- 20% of homes after 1990: These homes are thermally efficient. There's not much more you can do to improve them.



Impact on the heat demand following a local retrofit programme

The above heat graph, with the dashed red bar (highlighted with a circle), demonstrates that significant energy efficiency measures could halve the local heat demand.

This demand reduction is the important starting point, but it must 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.

Conclusion and recommendations:

It was a great to have the local people of Hambledon come together to share their thoughts about different renewable energy technologies and 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 Hambledon community survey more widely so that as many people in the local community can share their thoughts.
- Map out potential hidden sites for solar and explore conversations with local landowners about the potential for solar, albeit small community owned projects.
- Introduce local trusted installers to the school and support a project to get solar on the school roof.
- Support local farmers with identify feasible roof space for solar generation.
- 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 use of 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 housing in Hambledon.

There is no simple solution, but this workshop format demonstrates how people learning together in their local context can shape local action. 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.

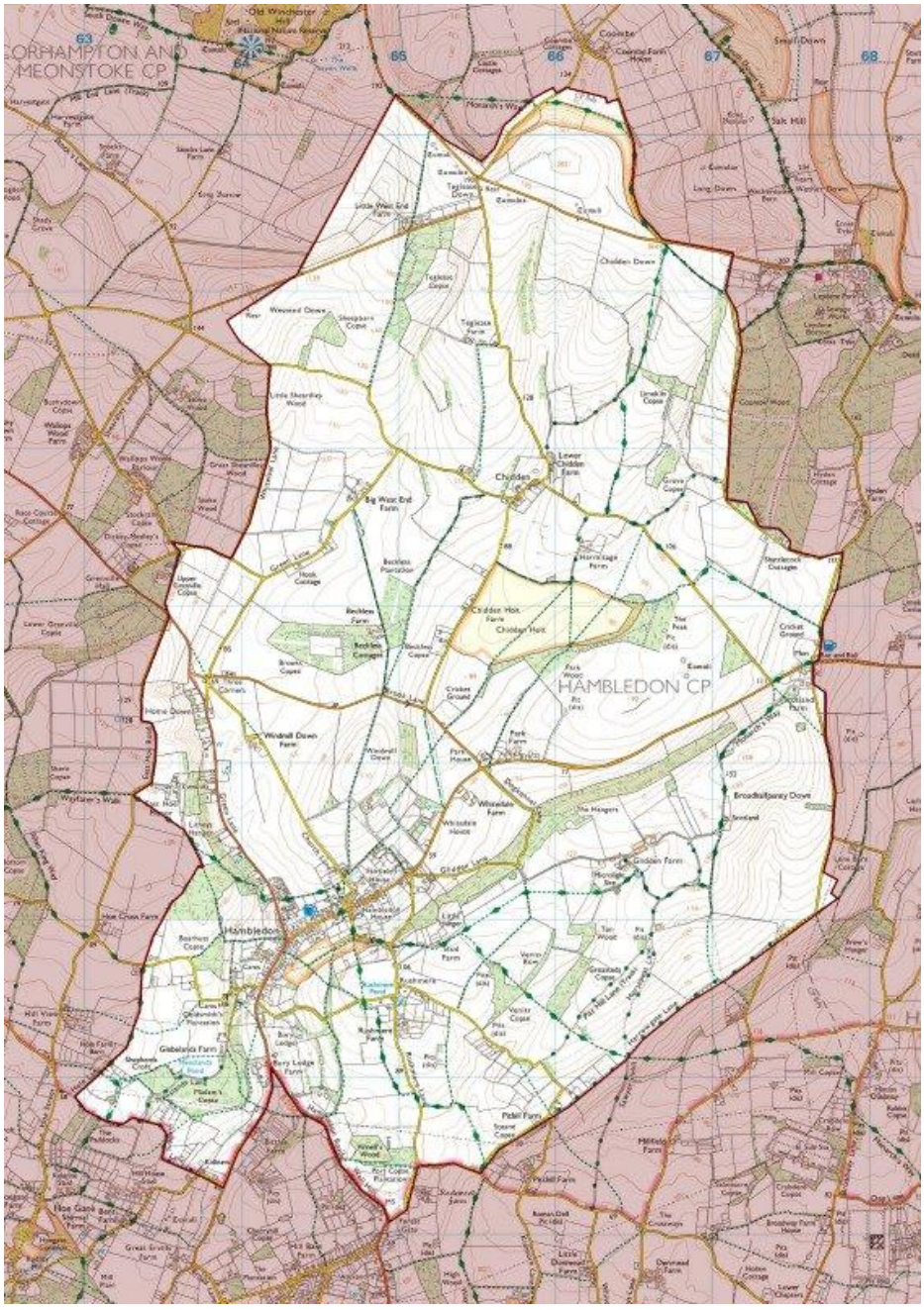
ASHP/GSHP
Based on assumption that dwellings need to be reasonably airtight and well insulated. Significant proportion of post 1990 houses plus an allowance for others that might have had deep retrofit we assumed 50% of homes could have an ASHP. We then considered that older homes in the centre of the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

Research

An updated assessment of the technical and economic potential for the renewable electricity generation in the pan-Hampshire area v2.0

Renewables Consultation – Winchester City Council

WinACC – Winchester District: the DESNZ data on greenhouse gas emissions from 2025 to 2023 (published 4 July 2025)

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.