Future Energy Landscapes Workshop

Arundel Parish: Tuesday 14th July 2026

This report summarises what happened and what residents of Arundel and the nearby parishes said during the Future Energy Landscapes workshop in July 2026. 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.

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

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 conversation about what scale and types of projects might be acceptable to local people and what impact those technologies might have on their local energy needs.

The workshop was funded by the South Downs National Park Authority (SDNPA) and supported by Arundel Town Council. The objective was to ensure communities (in or near the SDNP) 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.

Arundel Town Council

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.

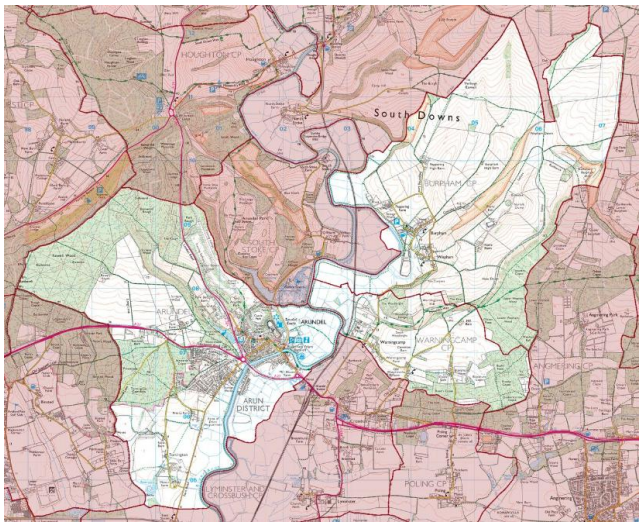
[1] See **Appendix 1** for details of the data, research and assumptions that have been used to build this workshop.

Workshop summary

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

Workshop boundary: These workshops use the civic Parish boundary to pinpoint the discussion around an area and landscape 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.

For the purposes of this workshop and due to the fact Arundel Town Council boundary does not have much open landscape we included the local neighbouring parishes of Burpham and Warningcamp.



Arundel, Burpham & Warningcamp parishes

Arundel is a market town and civil parish in Arun District, West Sussex and is cut in half by A27 and the South Downs National Park boundary. The much-conserved town has a medieval castle and Roman Catholic cathedral and the River Arun runs through the eastern side of the town. **Burpham and Warningcamp** are neighboring rural parishes with open landscape sitting mostly in the National Park with a few scattered houses and large farm buildings.

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 talking about their local area on the tables 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) Solar Farms
b) Wind Power group
c) Domestic solar group
d) Domestic heat pumps group

***** There was interest from the group about the feasibility of **hydropower** using the fast flowing Arun River. A study had been carried out some years ago. As the workshop draws its data from proven and tested technologies the workshop did not bring hydro/tidal into the conversation but there might be an opportunity outside of the workshop to revisit this as the technologies are developing so quickly.

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 effect 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 the 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.

Parishes in Numbers

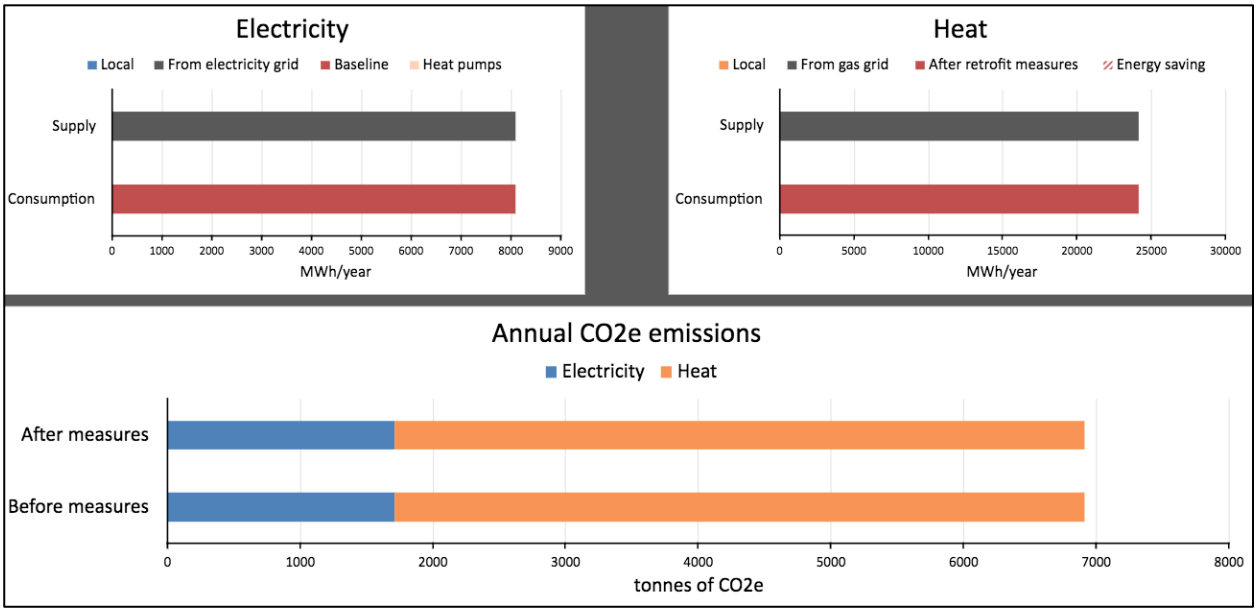
- 3,380 Residents
- 1,850 Homes
- 8,100 MWh elec. per year
- 6,900 tonnes CO_2 / year

[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.

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 Farms

The first group discussed their feelings about ground mounted solar farms in units of 6 acres in the local landscape. Out of a rating of 5, with 5 being enthusiastic about the technology locally, individuals scored either a 2 or a 3. There was consensus across the group that the area was too special to consider solar unless on roofs or on car parks. They were not against the technology but felt that it was not worth spoiling the local natural area to produce a relatively small amount of energy against what was nationally required.



No to solar farm: 6 acre solar farm in the local area were deemed unacceptable by the discussion group

The graphs above show no impact on the supply of electricity or carbon emissions as solar farms were deemed unacceptable as part of the local future energy system. Despite the tables discussion concluding this the wider group shared their responses and discussed the following points:

- Local energy plans with local generation could mean lower local energy prices (see below for more details).
- The facilitator made the point that historically our energy system was very centralized with most electricity generated by a small number of large power stations in coal mining areas. We are now moving towards a more decentralized system with renewable generation being hosted by communities around the country.
- Other participants felt that there were some tucked away places within the boundary that would be suitable for solar and would have been keen to explore those options.

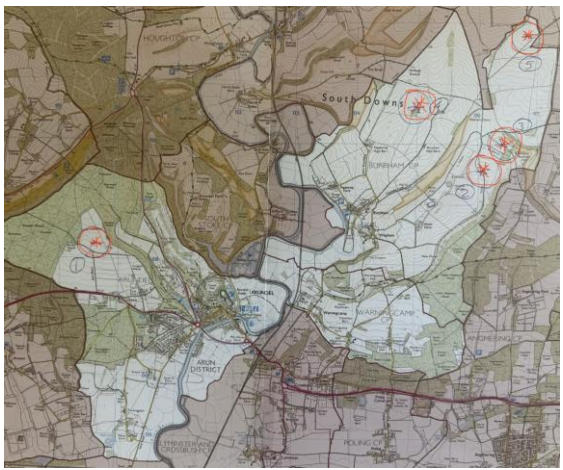
- Connection challenges for solar farms were mentioned and there is a national issue for the grid to take on the additional generation from different locations. Connection feasibility and costs would be an important consideration for all projects.
- A project in Europe was cited where they have panels between the railway tracks https://www.groupe-sncf.com/en/innovation/solar-power-between-rails
- The more distributed the panels are the more costly the cabling, connection and infrastructure. Roof top solar is part of the solution but is more expensive than ground mounted solar so there will always be a need for solar farms.
- Lakeside North Harbour in Portsmouth have completed an ambitious car park canopy solar project with over 8,500 panels https://www.portsmouth.gov.uk/uks-largest-solar-parking-canopy-project-completed-construction-at-lakeside-north-harbour/
- As a comparison to the visual impact of solar panels it was commented that vast areas near Ford now have huge greenhouses that glow at night.
- There is always going to be a tension between growing food and solar but in practice high grade agricultural land would not get permission for solar and there is no doubt that biodiversity improves with solar compared to monoculture and intensive farming.
- A final point about the landscape was that the South Downs, as they look now, are man made as a result of felling trees to create grazing land for sheep so Arundel sits in a man-made landscape already.

Wind Power

Two tables took on the discussion about the acceptability and impact of wind turbines in the local area. Each table explored three sizes of wind turbines as options for large-scale electricity generation: large turbines (2.5 MW, 140 m to blade tip), medium turbines (1.0 MW, 100 m), and small turbines (500 kW, 65 m).

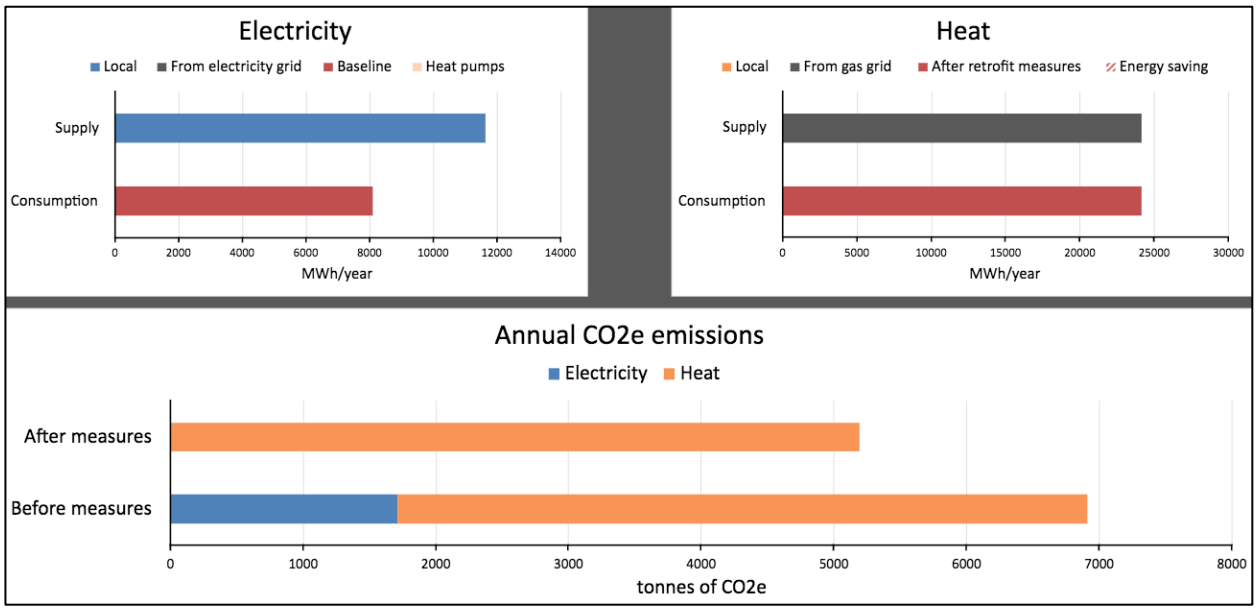
Wind table 1:

There were a range of views but the group was supportive of wind with some people feeling they were elegant and could have a local value and rating the technology between 4 and 5 for acceptability. The group noted the downsides (eg recycling, bird strikes) but felt they were much less of a problem than the benefits. They also acknowledged the need for a "mosaic of technologies" not relying entirely on wind. They proposed five medium wind turbines positioned around the local area with suggested locations shown in red circles on the photo here.



Hypothetical proposal of 5 medium wind turbines in the local area acknowledging that wind turbines are not currently permissible in National Parks

The electricity graph below shows that these five, medium wind turbines would have a big impact and generate 30% more electricity than is currently needed (blue line in electricity graph) and so remove all emissions associated with electricity in this scenario.

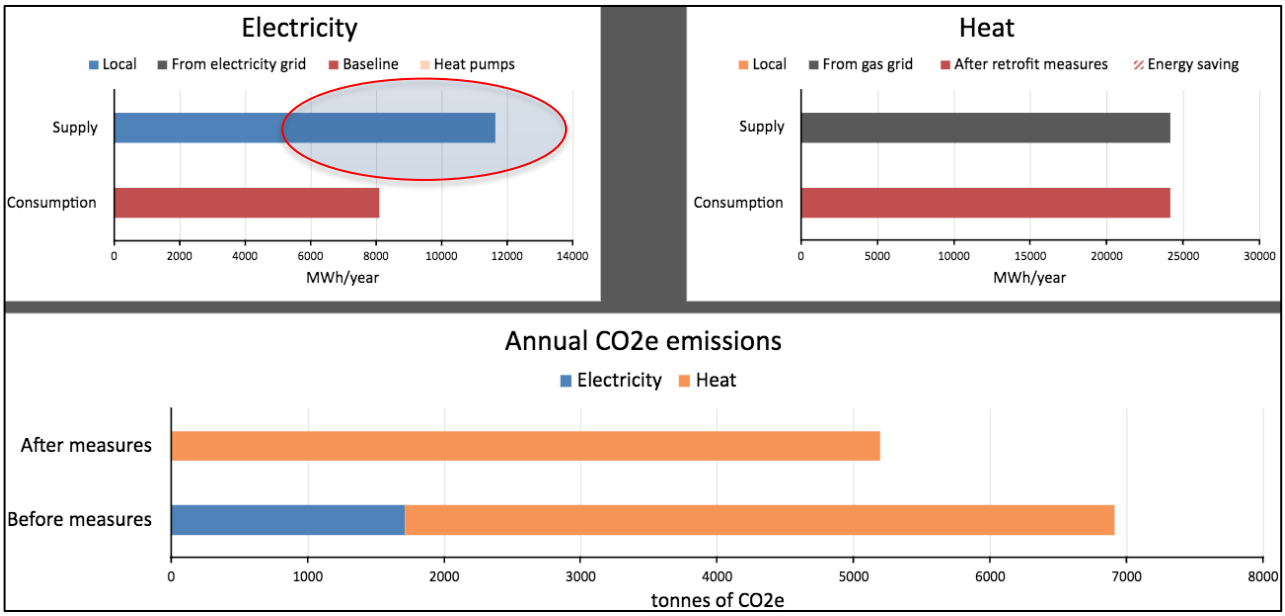


Impact of 5 x medium (100m to blade tip) wind turbine on local electricity supply

Wind table 2:

This table was also in broad support of the technology and thought it was a great technology as it does not take up too much space compared with solar, still allows farming etc. However the table was unable to reach a consensus on how many turbines and where to locate them locally. Points raised included the impact on the tourism economy and if tourists might not like wind turbines in the landscape would they visit. If no suitable locations could be identified they discussed effectively offsetting their local emissions by investing into Rampion 2, the proposed extension of the off shore wind farm off the Sussex coast.

They had a few options that they discussed from 10 small turbines to 5 medium ones and for purposes of illustration we looked at the impact of 10 small wind turbines but the group were not committed to that as their plan.



Impact of 10 x small (75m blade tip) wind turbine on local electricity supply

The impact of 10 small turbines, shown above, is comparable to 5 medium turbines suggested by the first group. The conversation therefore turned to the further trade offs around turbine height, their quantity and location.

Further comments were made and discussed by the wider group:

- It was noted that wind turbines do kill birds, but the estimated 100,000–200,000 annual bird deaths in the UK from turbines are far fewer than the tens of millions killed each year by domestic cats.
- There are experiments in Norway with painting the wind turbines to warn off migrating birds.
- Wind turbines are impressive and do generate a lot of power, as the graphs show, however the electrification of transport and heating is also going to more than double how much electricity we use and need now.
- One participant shared how important it was to be asking people how they feel about renewables and see how views might be changing ie. Local visitors to here might like wind turbines. Germany has turbines everywhere and a strong tourist economy.
- Benefit of local community generation: community owned wind turbine or solar farm connected to a single substation, and then consumers who are also connected to that substation can take that energy at times of peak production when it's producing at a cheaper rate. It can be sold cheaper because it avoids the transmission costs of going across the wider electricity network. Energy Local facilitates this process by matching a generator with a network of consumers to set up Energy Local Clubs.
- Community Benefit is also possible from investing in community owned renewable projects and getting a return on that investment or benefitting from the community

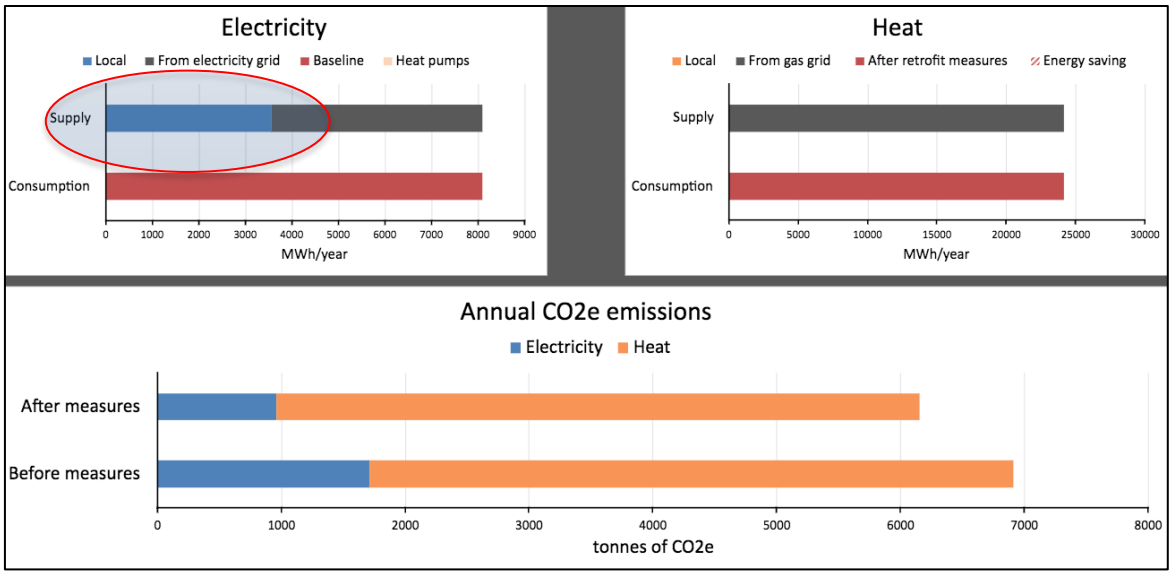
benefits fund which is where profits from these projects go and are then handed to communities as grants.

- Arundel benefits from the fact that it is unlikely to see a huge amount of house building so the numbers on the graphs regarding energy demand are not going to be impacted upon by a dramatic increase in housing stock and population.
- Solar and wind can be along side but there are issues about safety and noise

Domestic Solar

The discussion then moved from large-scale solar and wind to domestic rooftop solar and the group were very positive about the technology. They scored it a 5 for being acceptable in the local context and felt that it was very possible to do something even in a place like Arundel with its historical town. They acknowledged that local opinions might be different, but felt that they could see a future with 75% local uptake of solar on domestic roof tops. They also could imagine solar being installed on outbuildings and even on land near outlying villages. It was noted that for homes in the conservation areas they could have solar on non-street facing roofs. They were also keen to see them on community buildings, schools, libraries, and council buildings and should be compulsory on car parks and on all new builds. They discussed the barriers about the cost vs the savings, listed building issues, rented properties, importance of payback periods and improving the design of panels.

Due to the large conservation area in Arundel where home owners have restrictions on where they can put solar we looked at what the impact of 50% of homes having 10-12 solar panels.



Impact of 50% of local homes having 10-12 solar panels

Using the CESAR tool, we can see from the graphs above that if 50% of all homes across Arundel, Burpham and Warningcamp had rooftop solar, that would supply approximately 40% of the current electricity demand which includes non-domestic usage. It would also halve the amount of carbon emitted from fossil fuel electricity generation. This illustrates that a commitment to domestic solar, house by house in Arundel could reduce the need to use larger scale renewable technologies.

The wider group shared their following thoughts and questions:

- With a west or east facing roof, you lose roughly 12% of generation against a south facing roof.
- Financial incentives for solar have included group buying schemes that some councils have successfully rolled out but microgrids where you benefit from one another's solar are currently not possible due to regulation.
- Government should be announcing low-cost or zero interest loans in April 2027 and some banks are offering loans already for batteries and domestic solar.
- Planning policies need to be updated and changed if SDNPA planners want to embrace renewables. Arundel Lido had a frustrating experience with SDNPA when asking for planning permission for solar on the roofs of the lido and for some on a grass bank. The cost of complying with planning was so prohibitive it meant that they had to reduce the number of panels.
- There is a real tension between heritage and the climate crisis. SDNPA just produced a document about conservation and heritage https://www.southdowns.gov.uk/app/uploads/2026/05/SD_Climate_2026_07-FINAL-FINAL-FINAL-010526-1.pdf
- There are solar tiles that are effective but very expensive when compared to solar panels.

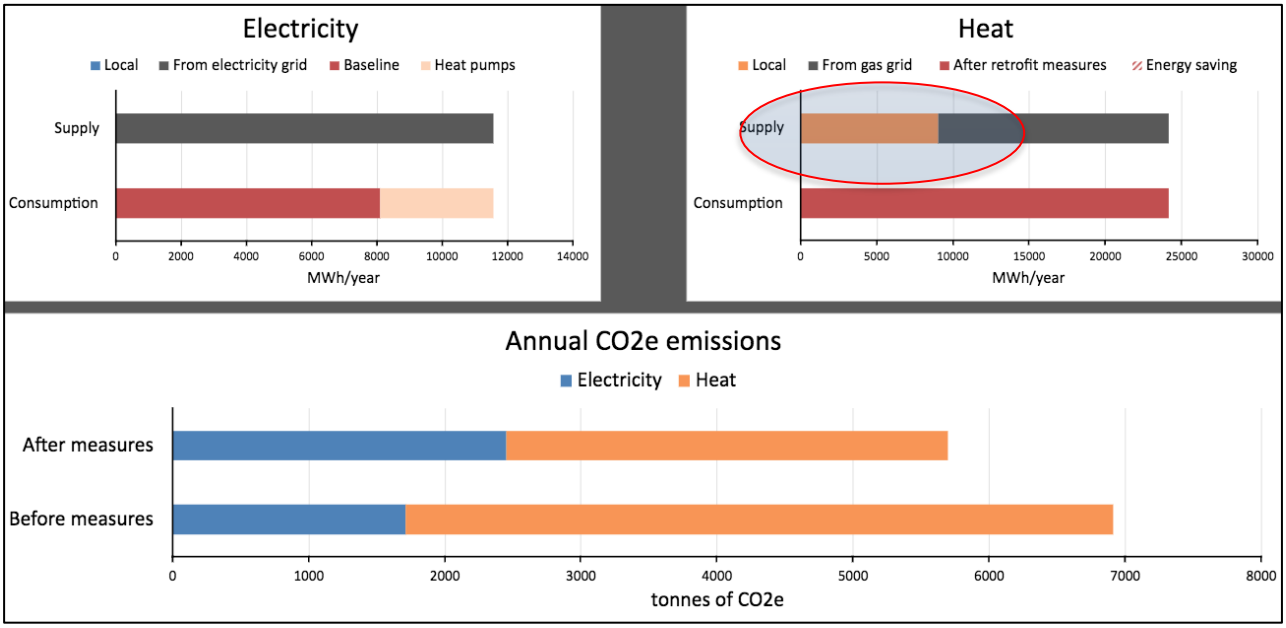
Heat pumps

The final table looked at heat pumps, which use energy very efficiently to create heat. They use electricity to increase heat extracted from the air or the ground, transferring it to the home and are highly efficient, using only around a quarter of the energy of a gas boiler.

The group spoke candidly about the disappointing experience local early adopters have had of the technology when the heat pumps have not worked properly and it has been hard to find anyone to help. They scored the technology a 3 for acceptability but appreciated that the technology was improving all the time. With the three distinct parish areas and the historic houses, very close together there were challenges with limited space even if you were to ignore the fact they have a visual impact. The group agreed that more modern houses on the outskirts or south of the A27 could definitely benefit from heat pumps

especially as the homes would probably be better insulated and therefore the heat pump would be more efficient.

We looked at the impact of 45% of homes in the area having an air source heat pump and unsurprisingly it meets approximately 40% of the heat demand. The electricity demand would increase, as indicated by the red bar on the electricity chart below. This is because heat pumps use electricity to run but are much more efficient than a fossil fuel boiler and therefore reduce the carbon emissions from heat generation. Heat pumps make a very meaningful impact when it comes to decarbonising local heating systems and would work in areas of these parishes.



Impact of 45% of local homes having a heat pump

The discussion was opened to the wider group and a few interesting points came up which were discussed:

- There is a skills shortage with some courses of poor quality for gas boiler installers to train for heat pumps. Colleges are responding and running courses for Green Tech jobs but they need experienced mentors and graduate positions to then get experience and advice.
- In Germany, the heat loss calculation, the process by which an installer assesses the size of heat pump, the size of radiator systems, is done by independent companies, and in the UK, it's done by installer which can create a conflict of interest.
- One participant asked about pipework and radiators. The facilitator explained that most homes with 15 mm pipework would not need to replace it. A heat-loss calculation would determine whether radiators needed to be larger, as heat pumps run at lower temperatures. In many cases, existing radiators can be reused. It depends how efficient you want the system to be.

Retrofitting

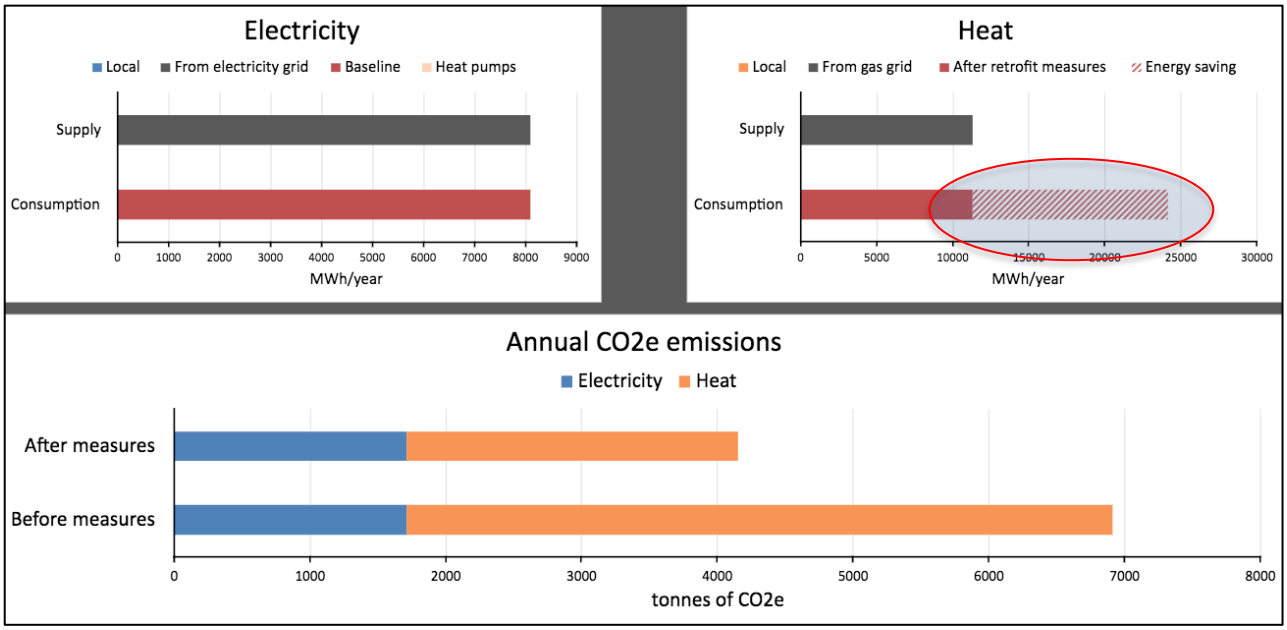
As with any community discussion about energy it must include a conversation about what we can all do to reduce the energy demands of our homes.

Making homes more efficient—especially by cutting heat loss—means far less energy is needed to keep them warm, which in turn reduces electricity demand when switching to electric heating. Retrofitting varies in difficulty: some homes are simple to improve, while others require more complex work.

We outlined three broad home types across the parish area and identified what percentage of the local housing stock was that age.

House type	% of local housing stock
Older pre-1930 houses: built with solid walls and natural ventilation, are draughty and harder to upgrade, though improvements are still possible.	**50%**
Homes built between 1930 and 1990: have cavity walls but were constructed before modern insulation standards. Many have some insulation, but often not enough, and there is still significant potential to improve their efficiency.	**40%**
Modern homes built after 1990: construction follows strict insulation rules and often need very little heating.	**10%**

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 Arundel area.



Impact on the heat demand following a local retrofit programme

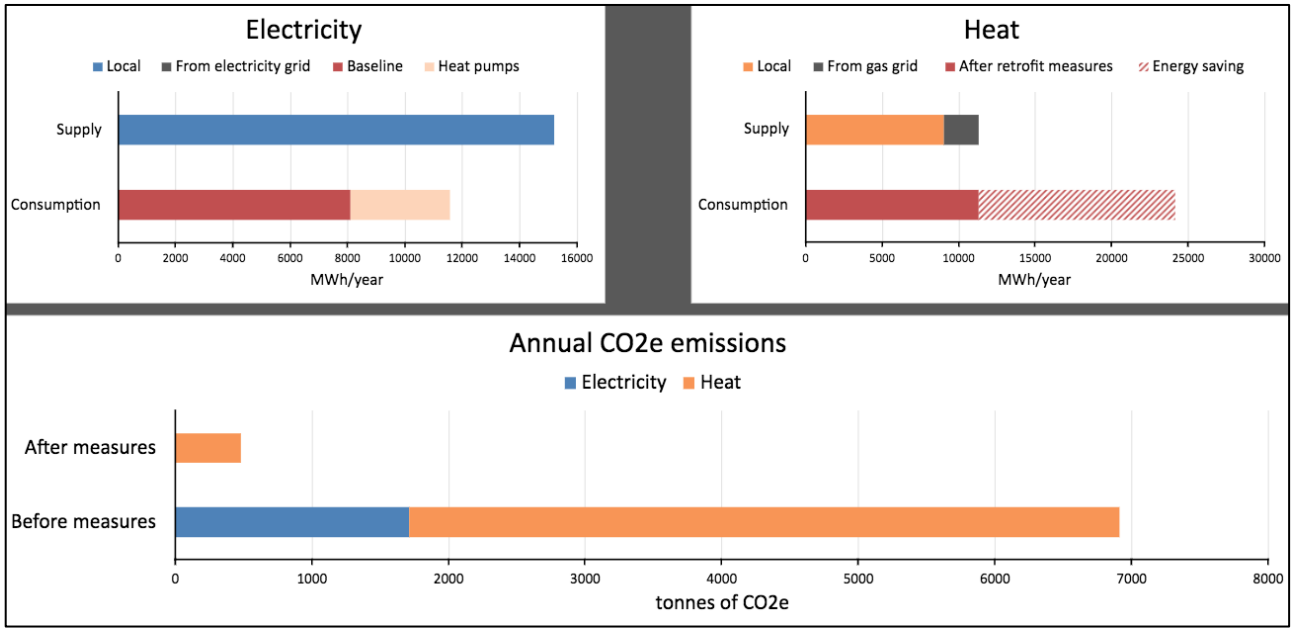
The above heat graph, with the dashed red bar against 'consumption', demonstrates that energy efficiency measures like draught proofing, insulation and double or triple glazed windows to improve the energy efficiency of the lowest performing houses, could halve the local heat demand. This demand reduction 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 mentioned by the groups none of the individual technologies hold the complete answer so the CESAR tool was used to see what might be generated if we were to combine the different technologies.

For this we input into the CESAR tool the number of technologies suggested by each group that were acceptable in the local area to see what the impact would be on supply and demand.

- Nil, 6-acre solar farms
- 5 x medium wind turbines
- 50% of homes with 10-12 solar panels
- 45% of homes with heat pumps



Arundel, Burpham and Warningcamp's Future Energy Landscape

By reimagining the local energy system in this way Arundel and its neighbouring parishes could hypothetically meet 75% of the reduced heat demand from a retrofit programme with the heat pumps (in reality these heat pumps would only heat the houses that they were installed in), whilst generating 25% more electricity than the local community needs with the wind turbines and domestic solar. This turbine, domestic solar and heat pumps combination would almost remove all the carbon from its current demand of heat and electricity from the burning of fossil fuels.

Conclusion and recommendations:

It was a great to have the local people of Arundel and neighbouring parishes come together along with District and Town Councillors to share their thoughts about renewable energy and to reimagine their local energy system.

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 but it was an opportunity to illustrate what renewable technologies offer communities.

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

- Share this report and summary to local people along with the Community Energy Survey to encourage others to share their thoughts on this topic.
- Ensure the local community is kept informed of changes to funding around domestic solar and heat pumps.
- Signpost local people to SDNPA advice and planning changes.
- Identify recommended installers and suppliers and use peer to peer to support installations of solar and heat pumps.
- Engage local school and town hall in a conversation about solar panels on the roof.
- Support and champion the Local Electricity Bill by following Power for People
- 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.

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 change 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 Renewables) 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

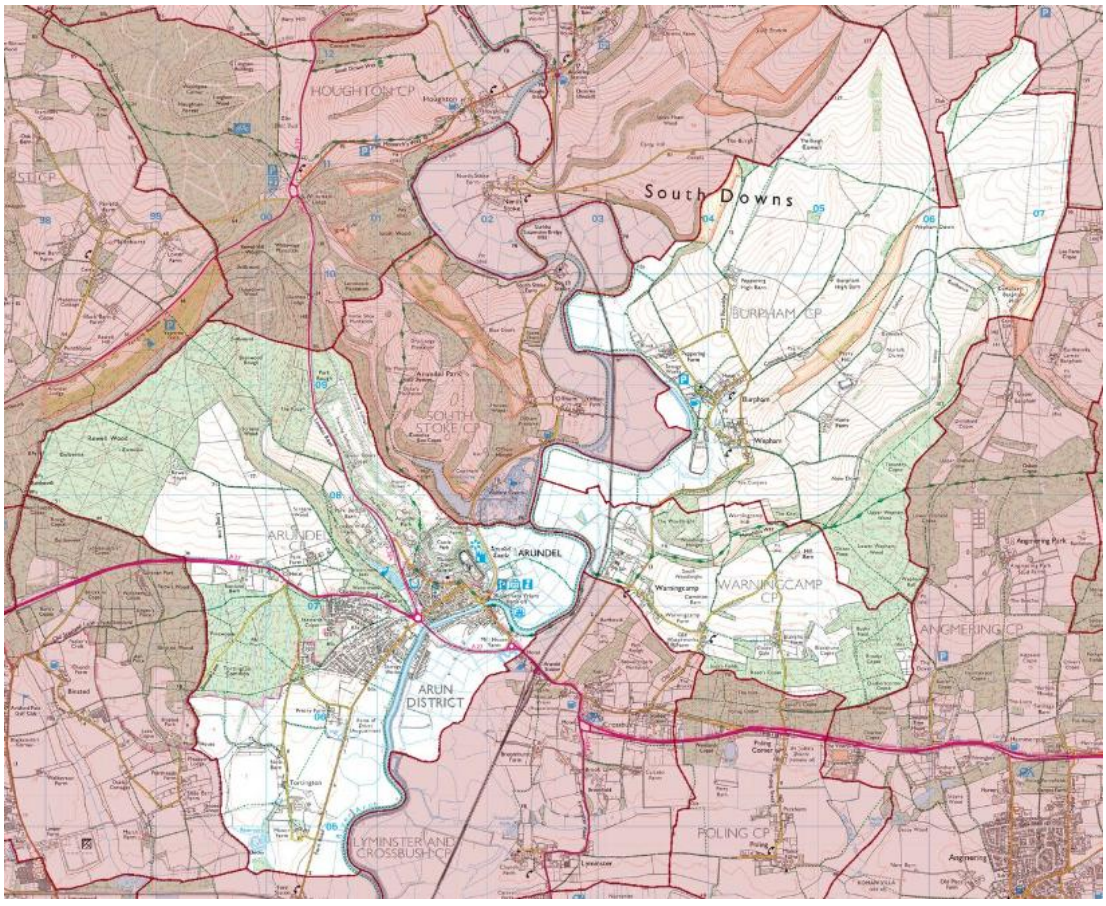
Arun District Council Carbon Neutral Strategy 2022-2030 https://www.arun.gov.uk/carbon-neutral-strategy/

West Sussex County Council: Energy Strategy 2030
https://www.westsussex.gov.uk/media/17532/energy_strategy.pdf

Energy South2East – towards a low carbon economy LOCAL ENERGY STRATEGY

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.



Arundel, Burpham and Warningcamp's Parish Boundary