

1. Summary

North Somerset Council is committed to becoming carbon neutral by 2030 and would like to increase local renewable energy generation and include more supportive renewable energy policies within its emerging local plan. A public workshop was held in Yatton on 2nd April 2022, exploring whether renewable energy development could be increased in Yatton and Kenn and what might be acceptable to residents. The workshop was facilitated by the Centre for Sustainable Energy, with two members of staff present from North Somerset Council as observers. At the end of the session a short presentation was given with practical tips of how to reduce your heating bills.

The workshop was promoted through posters displayed in different locations in Yatton and Kenn including parish council notice boards, and other prominent locations. The event was also promoted through tweets and posts of Facebook forums such as Yatton Community, Yatton Everything else, Everything Kenn. The workshop was featured on North Somerset Council's consultation page and in the Kenn newsletter News and Views. All Yatton and Kenn Councillors were invited to the workshop by email and phone.

We also disseminated details of the workshop via email and phone to local organisations to be cascaded on to their members such as the Rotary Club, Step by Step Disability group, Voluntary Action N Somerset, Yatton Ramblers, Yeo Valley Lions, Kenn news and Views, local churches in Yatton, Claverham and Kenn, the Congresbury Community Bus (Bluey), local sports clubs such as the local Cricket, bowling and rugby clubs, local school newsletters, local girl guides and scouts groups and schools and Yatton Neighbourhood Watch.

Seven residents attended the workshop, all of whom stayed for the full duration of the event.

This note summarises what was said on the day by residents but cannot be assumed to be representative of the full range of opinion in the local community. The workshop should therefore be seen as the start rather the end of the conversation. A public consultation is being held to capture wider public opinion, and then a report will be prepared for the Council summarising the overall outcomes and giving recommendations for how the Council's planning policies for renewable energy might address the aspirations and concerns of residents. The forthcoming local plan consultation will then give residents further opportunities to influence emerging policy.

It should also be added that the workshop outputs are high level suggestions of what *might* be acceptable, but any policies (and any future planning applications) would require further detailed scrutiny. This would ensure that what's envisaged would be feasible, and would consider the impact on the landscape, noise impacts, disruption from construction traffic, and wildlife protection.

2. Community Energy Plan

Workshop participants commented that the following types and scales of renewable electricity technology might be acceptable:

Renewable Electricity

- **Large scale Wind turbines** – The potential installation of a single large-scale wind turbine with a tip height of 130 – 140 metres (up to 2.5 megawatt in output) to the east of North End and to the North of Yatton and the railway line.
- **Medium scale Wind turbines** – The potential installation of approximately 3 large scale wind turbines, measuring with a tip height of approximately 100 metres (up to 1 megawatt in output) on Kenn moor to the east of Kenn and to the south of Nailsea Wall.
- **Ground based solar farms** – The potential installation of a solar farm or solar farms of up to 17.5 megawatts in size, covering 84 acres, the equivalent of around 40 football pitches. A possible location was suggested next to the M5 motorway, to the north of East Hewish.
- **Anaerobic Digestion** - 1 x 500 kilowatt Anaerobic Digester if sufficient feedstock could be found. No location was identified.
- **Rooftop solar photovoltaic (PV) panels** – on 10% of homes, around 360 installations.

Renewable heat

Workshop participants commented that the following types and scales of renewable heat generation might feasibly be installed out by local homeowners in the next five years:

- **Domestic (rooftop) solar thermal panels:** on 5% of homes, around 270 installations.
- **Domestic air source heat pumps:** on 5% of homes, around 270 installations.

Overall impact

Renewable electricity generation

The renewable energy (wind turbines, solar panels, solar farms, anaerobic digester) suggested in the workshop would result in Yatton and Kenn generating approximately 118% of electricity used in the two parishes from local renewable sources. The two parishes would become net exporters of renewable electricity, helping other areas to reduce their reliance on fossil fuels.

Renewable Heat Generation

The suggested renewable heat technologies would provide 3% of Yatton and Kenn's annual heat demand, reducing emissions by 476 tonnes of carbon (CO₂e), reducing carbon emissions from heating by approximately 3%.

Overall impact on carbon emissions

Overall the renewable energy technologies and energy efficiency measures suggested in the workshop, if taken forward, would reduce the carbon emissions from the two parishes by approximately 29% (6,393 tonnes CO₂e).

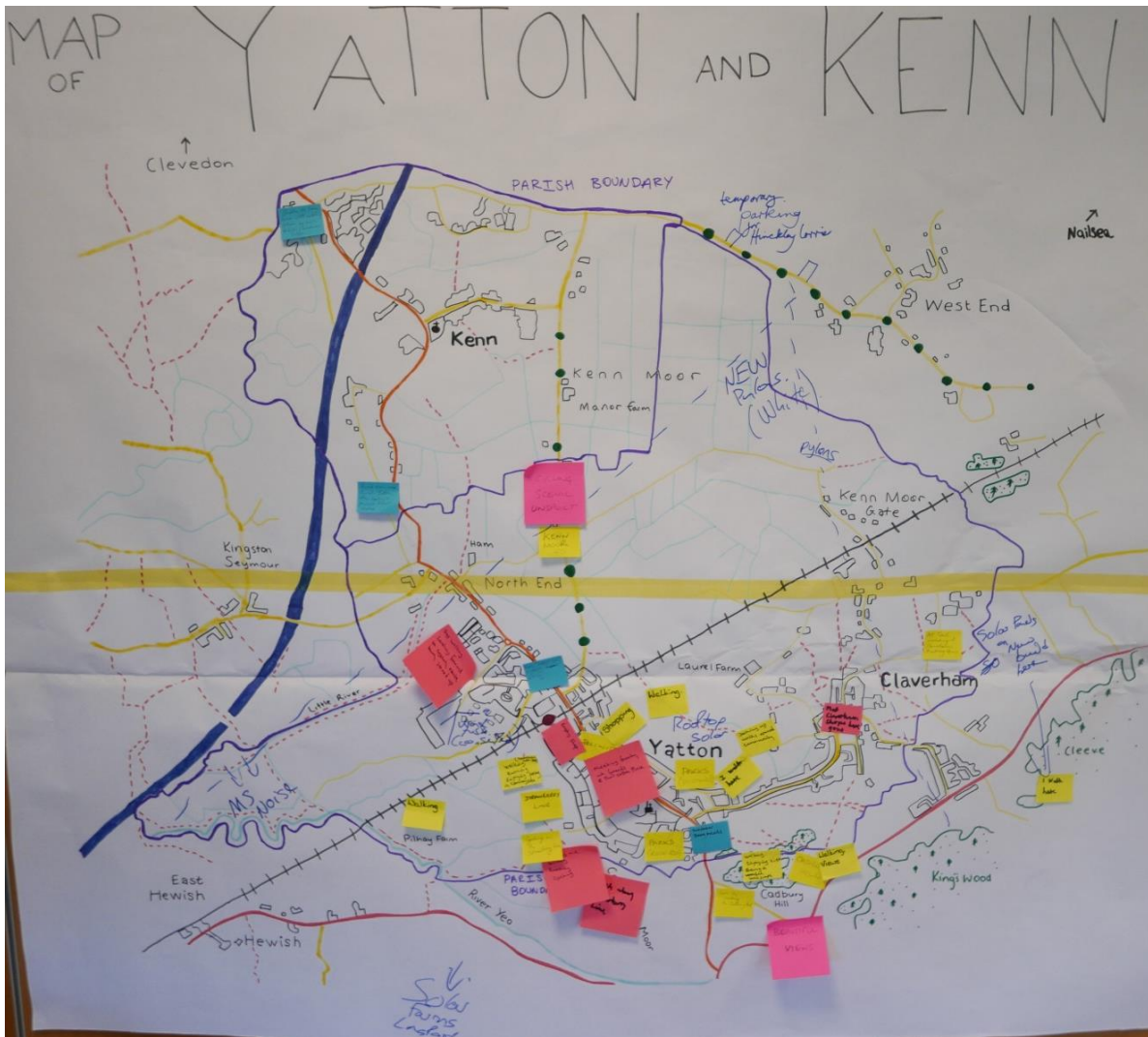
The group's suggestions regarding suitable locations and scales for onshore wind and solar farm development were informed by mapping of the technical potential carried out on behalf of the council. Excerpts of this mapping are attached in the body of the report below at appendix A.

3. Summary of workshop sessions

Landscape sensitivity

Following a brief opening session dealing with the framework for the day and introductions, workshop participants were asked to annotate a large hand drawn map with post-it notes illustrating their relationship with the area and landscape.

Yellow post-it notes denoted positive places or services in the local area, blue for locations with negative associations and small pink post-it notes for those which had been important which have now been lost.



Below is a summary of what was expressed on the map:

Positive / Cherished Places

- The Strawberry Line and surrounding area, for walking and talking, running and cycling
- Cadbury Hill, for walking, beautiful views and being in a wooded landscape
- Local walking routes to the north of Yatton and to the north-east of Claverham

Negative places identified:

- Narrow pavements through Yatton
- Traffic congestion along Kenn road from the motorway – not pleasant for cycling

Participants identified the high voltage line passing through the area to Hinkley Point.

“Lost” places or infrastructure

- Empty shops in Yatton
- The loss of much of the shops in Claverham

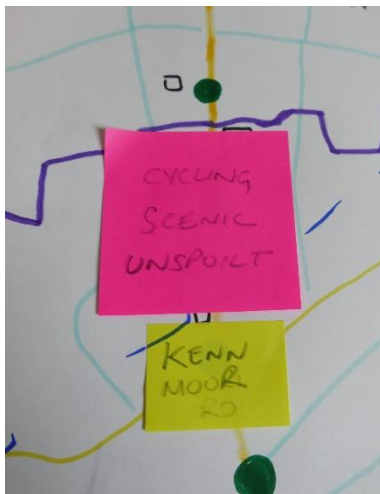
Emotions attached to the landscape

Using large pink post-it notes, participants were tasked with describing their local landscape and countryside with descriptive words (e.g. wild, beautiful, ugly); activities that they associate with the landscape (e.g. farming, hill walking) and; emotions (e.g. how they feel when they're out in the local countryside). The post-it notes were then attached to the communal map, and contained the following thoughts:

- Beautiful views from Cadbury Hill

In discussion, participants also stressed the following:

- Birds and quiet along the Strawberry line
- Ken Moor - Cycling, scenic and unspoilt





Energy Infrastructure in the Landscape - Existing

Participants were asked to identify existing energy infrastructure in the area and to discuss how they felt about it.

Participants identified the high voltage line planned to pass through the north-east of the area to Hinkley Point. Whilst a new design was seen as more attractive, participants commented that “because they are painted white they are super obvious”. They also identified a temporary parking compound to serve lorries heading for Hinkley Point, constructed between Kenn and West End.

The group also explained that planning permission had been granted for two wind turbines at Smart Systems to the west of Yatton, which were yet to be erected. No view was expressed as to whether this was a positive development.

Solar farms were also identified near Langford to the south of Congresbury. Participants commented that provided they were well sited, solar farms could be quite effectively screened, and their landscape impacts could be relatively low, and they gave rise to no noise impacts.

Participants mentioned that they had noticed solar PV on the roofs of new build developments in the East of Claverham and in North End, as well a number of individual dispersed properties throughout the area.

Landscape Change arising from energy generation

We asked participants what sort of changes they might see in the landscape in the next 10-20 years and how they felt about this, and about landscape change arising from renewable energy generation. Were there any scenarios that make you feel more negative or more positive about such changes?

The group was also asked whether rapidly rising energy costs and efforts to reduce reliance on Russian gas imports had had an effect on people’s views of renewable energy deployment. The group gave the sense that these issues were starting to have an impact on how they felt about local renewable energy generation.

One participant raised regret that the UK had lost its energy self-sufficiency. The country had been able to more than meet its energy needs from coal, but had let its self-sufficiency fall away and the country was now reliant on energy imports from overseas. The commentator was supportive of electricity interconnectors with Europe, although felt that existing pipelines and connectors are too one way and would like to be in a situation where we could also export excess energy the other way instead of just passively receiving it.

One participant raised the point that countries in Europe are much better at integrating energy infrastructure into the landscape, citing Spain in particular as an area where they felt it was done well, utilising ridgelines and high points for large infrastructure such as turbines and pylons.

As a whole the group seemed supportive of controlling our own supply and increasing individual communities' self-sufficiency. The group commented that if the area was to be more energy self-sufficient it should also benefit more from hosting renewable energy infrastructure.

The group also discussed the potential of microgrids, for enabling a community to be more self-sufficient. Microgrids work in parallel with the national electricity distribution grid and allow local building occupiers to trade unused electricity generated within the network. A microgrid might cover a street of houses or the centre of a village. Microgrids allow more of the renewable electricity generated locally to be used locally, capturing greater economic benefits for the community.

Community Energy Plan

Starting from nothing, participants were asked to suggest types and scales of renewable energy (represented by different cards) which might be acceptable, choosing from a menu of what might be technically suitable within the area, which had been informed by the renewable energy capacity study commissioned by North Somerset Council. The group was also shown the council's technical mapping of suitable areas for onshore wind and solar, see appendix A

Favoured technologies were placed on a table, and then the group discussed whether each individual suggestion was acceptable to the group. In this way, the workshop outputs were agreed by the group as a whole.

As technologies were selected, they were entered into a spreadsheet, designed to let attendees see the impact of their choices in terms of energy output / saved and carbon savings and allowing comparisons to be made between different scales and types of technology. This was then used to devise a hypothetical community energy plan. As technologies were selected the community map (which had previously been used to identify sensitive landscapes) was annotated with locations where specific technologies might be acceptable.

The key renewable energy types and scales supported by workshop participants for Yatton and Kenn were:

Renewable electricity

- **1 large scale (2.5 megawatt) wind turbines**, measuring of between 130- 140 metres in height. Each turbine would provide 11,651 megawatts hours of renewable electricity a year. This would power for about 1600 homes per year. A possible suggested location was identified to the east of North End and to the North of Yatton and the railway line, an area defined as being suitable in the council's technical evidence base.



The group acknowledged that this location was near to the model aircraft flying ground, and that potential conflicts would need to be resolved. 6 people voted in favour of this proposal and 1 abstained.

- Medium scale Wind turbines** – The potential installation of approximately 3 large-scale wind turbines, measuring with a tip height of approximately 100 metres (up to 1 megawatt in output) on Kenn moor to the east of Kenn and to the south of Nailsea Wall. 7 people voted in favour of this proposal and 1 against.



Below is a summary of the discussions around onshore wind:

- The group discussed the key impacts of onshore wind in some detail, including how noise and ecological impacts are assessed through the planning application process. It was stressed that bats would be a key issue in any wind application, and that several significant planning applications were being held up at the moment due to

their impact on bats. CSE summarised the environmental impact assessment process that planning applications would go through, as well as some of the evidence that would be collected to submit with the planning application (in an environmental impact statement) for example noise studies and in the case of proposals close to designated wildlife sites, multi-season bird surveys or bat surveys.

- The facilitators shared a slide showing that although the area to the east of Kenn is defined as being suitable for onshore wind in the council's technical evidence base, the area is designated as a Site of Special Scientific Interest and any possible conflict would need to be resolved if this was to be acceptable. The moor was designated as a site of Special Scientific Interest¹ due to the drainage ditches which contained populations of rare aquatic plants. The group commented that medium scale turbines might potentially be acceptable within fields away from ditches and rhynes, subject to further exploration by the council and consultation with Natural England.
- In respect of noise, the group were potentially supportive of wind sites being developed along the M5 Motorway, where background noise levels were already high. However the councils mapping only showed suitability for small 0.5 MW turbines along the motorway, and so this wasn't put forward as a preferable option.
- One attendee expressed support for tidal lagoons in the Severn Estuary as being preferable to wind turbines being developed within their local area although there was mixed feelings about this in the room.

A Solar farm or farms, of up to 17.5 megawatts in size – This would power the equivalent of powering 4700 homes and would cover approximately 84 acres, the equivalent of around 37 football pitches. A possible location was suggested next to the M5 motorway to the north of East Hewish. All participants were supportive of the proposed solar farm, provided that there was wider consultation with local people.

¹ Citation for TICKENHAM, NAILSEA AND KENN MOORS Site of Special Scientific Interest
<https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/2000021.pdf>



Below is a summary of the discussions around solar farms:

- The group felt that the visual impact of solar farms was less as they could be hidden from view. The group was supportive of solar farms being designed to permit grazing beneath the panels.
- Projecting an OS map on the wall, the workshop facilitators measured out roughly the area of land that would be needed to accommodate a 17.5 MW solar farm, so that attendees could get an idea of the likely impact of this scale of development.
- **Domestic Rooftop solar photovoltaic panels:** likely rate of installations: 361 (10% of homes in the two parishes), producing 1390 megawatt hours of renewable electricity a year, the equivalent of powering 388 homes (10% of all homes in the two parishes). 6 out of 7 participants supported this.

Renewable heat

- **Solar thermal domestic:** likely rate of installations: 180 (5% of homes in the two parishes), producing 271 megawatt hours of renewable heat. 6 out of 7 participants supported this.
- **Air source heat pumps:** likely rate of installations: 180 (5% of homes in the two parishes), producing 1941 megawatt hours of renewable heat. 6 out of 7 participants supported this.

The group commented that in respect of the domestic renewable energy options (including domestic rooftop solar pv, solar thermal and the installation of heat pumps) there was a difference between what they thought was likely to happen (how many local people would install solar pv) and what the group would support in terms of local change and aesthetics. For all domestic renewables, the

group would support much higher installation rates, but this was seen as unlikely without further subsidies.

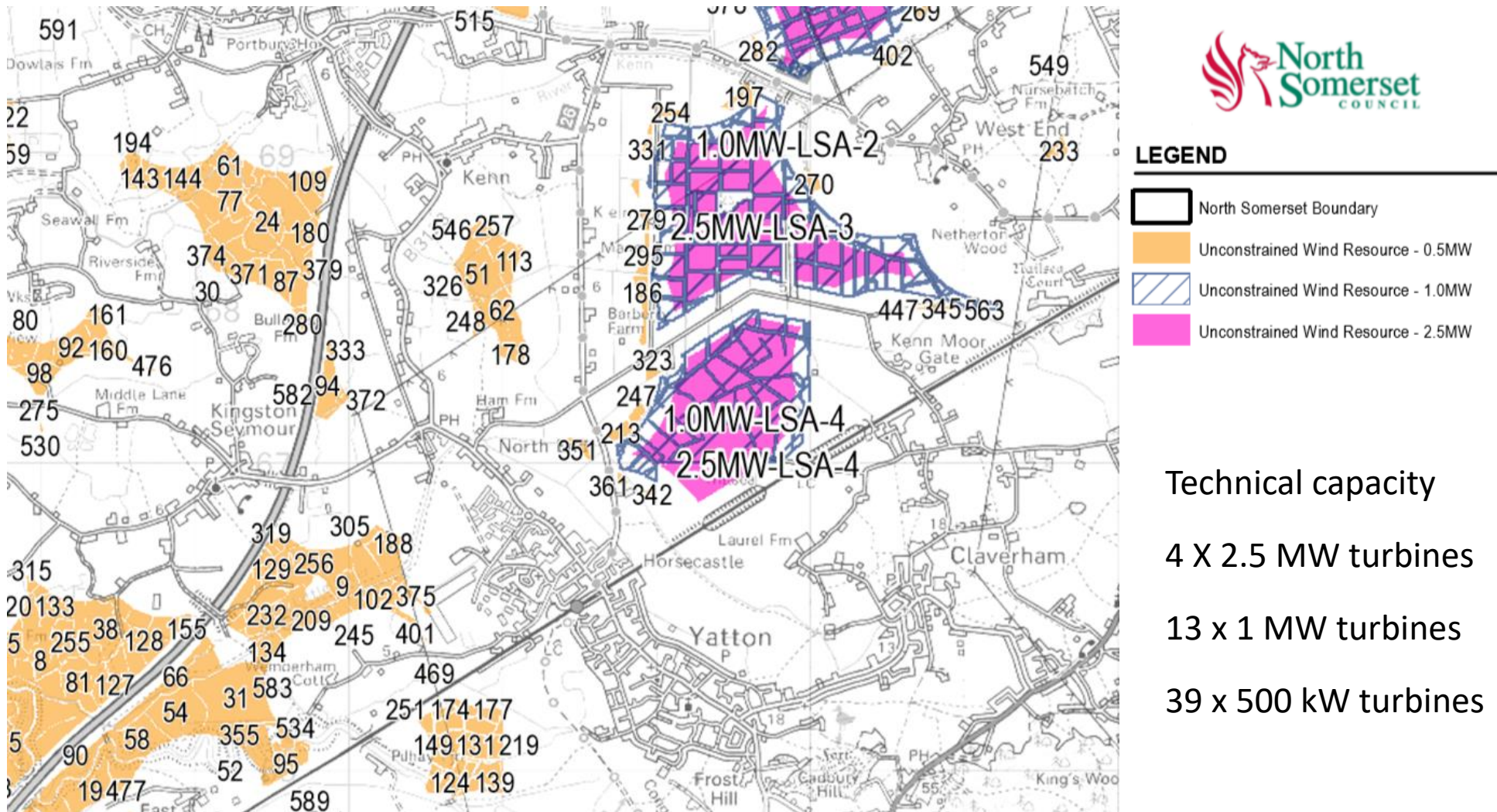
Overall impact

In sum, the proposed changes would:

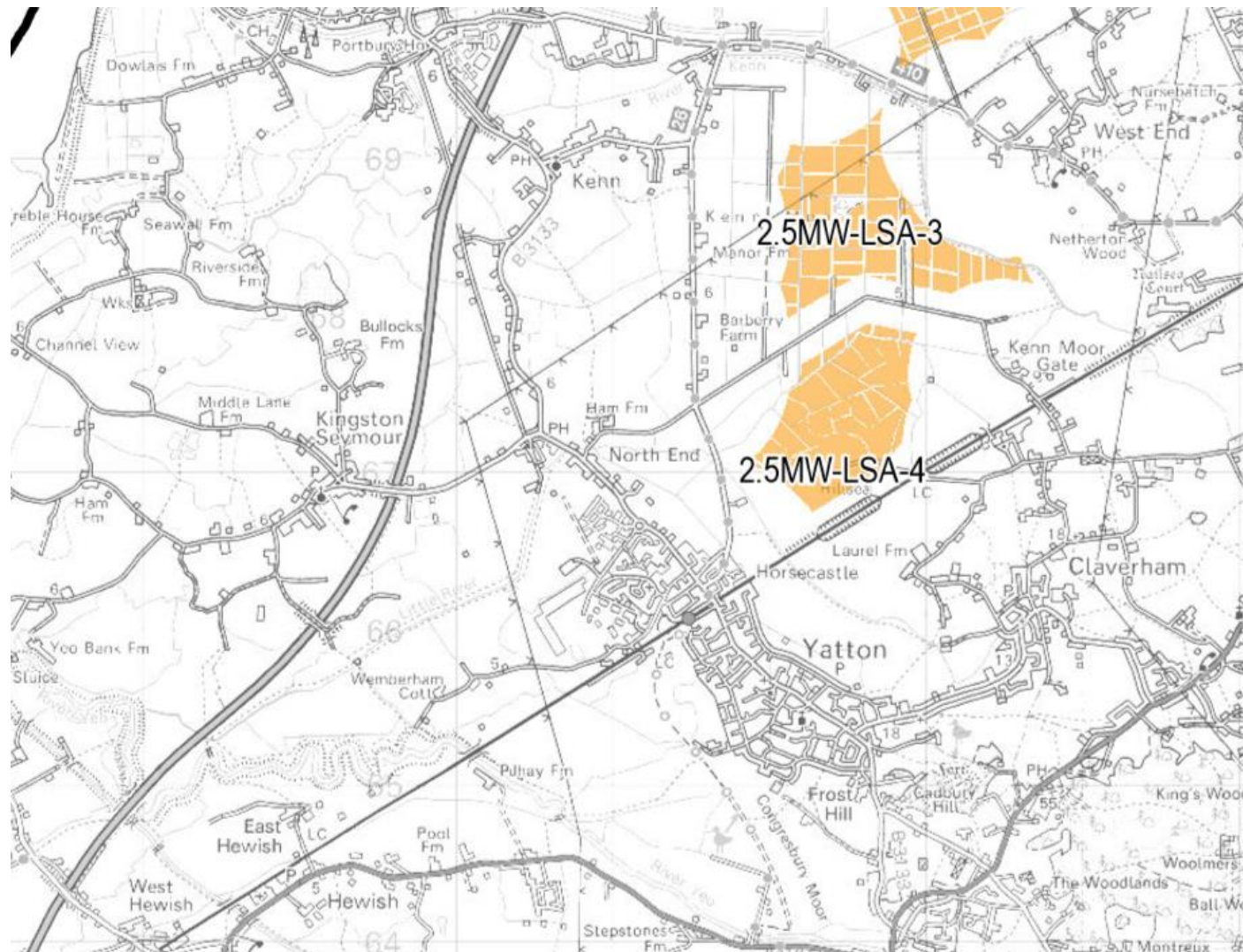
- Provide 118% of Yatton and Kenn's annual electricity demand from renewable sources
- Provide 3% of Yatton and Kenn's annual heat demand from renewable sources
- Reduce the total carbon emissions from the two parishes by approximately 29% (6,393 tonnes CO₂e).
- Cost roughly £22million

Appendix A – Potentially suitable areas for onshore wind. Technical assessment. Except from RERAS study



The numbers on the map represent potentially suitable locations for 1 MW turbines



Combined Wind Search – 0.5 MW, 1 MW and 2.5 MW - FIGURE W7-NS



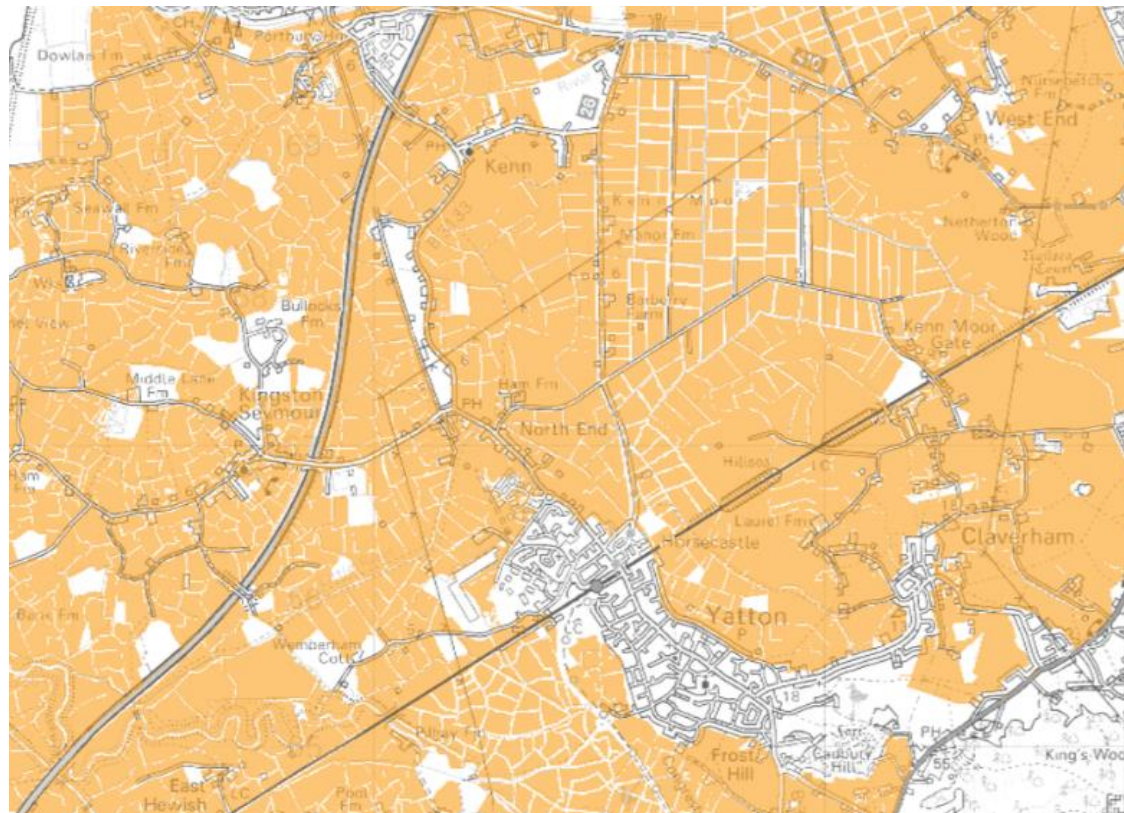
LEGEND

-  North Somerset Boundary
-  Unconstrained Wind Resource



Suitable areas for large scale 2.5 MW wind turbines – 130 metres high to blade tips

Appendix B - Unconstrained areas for field based solar. Technical assessment. Except from RERAS study

This map illustrates the sites which in technical terms could be developed for solar farms. However, these areas will need to be refined further through the Local Plan process, taking into account other considerations and constraints, as part of developing a strategy for renewable energy development.



LEGEND

-  North Somerset Boundary
-  Unconstrained Land



Countryside Stewardship Targeting & Scoring Layers

Biodiversity

- Sites of Special Scientific Interest (England)
- Sites of Special Scientific Interest (England)

Designations

Land-Based Designations

- Non-statutory
- Green Belt (England)

Key planning constraints including Sites of Special Scientific Interest and Green Belt

Appendix C - Completed spreadsheet of potentially suitable technologies, energy generated and saved and carbon emissions before and after

Technologies	Number of Cards	Number of installations		MWh supplied/saved		Equivalent homes powered/heated	Cost	Extra information	
				Electricity	Heat				
Onshore wind - small (500 kW / hub height: 40m / rotor diameter: 35m)	0	0		0	N/A	0	£0	Total cost	
Onshore wind - medium (1MW / hub height: 70m / rotor diameter: 55m)	3	3		6990	N/A	1948	£3,750,000	£21,820,839	
Onshore wind - large (2.5 MW / hub height: 100m / rotor diameter: 80m)	1	1		5825	N/A	1624	£2,500,000	Total equivalent homes powered	
Hydro (200 kW)	0	0		0	N/A	0	£0	9395	
Hydro - micro (25 kW)	0	0		0	N/A	0	£0	Total homes in community area	
Solar PV - domestic (4 kW) (1 card represents 5% of homes)	2	361	10%	1390	N/A	388	£1,875,929	3608	
Solar farm (2.5 MW / 12 acres)	7	7		16863	N/A	4700	£8,750,000	After the 'Energy transition exercise'	
Anaerobic digestion (500 kW / 250 acres)	1	1		2637	N/A	735	£2,600,000	Annual local electricity supply [MWh]	
CHP - Anaerobic digestion (100 homes district heating)	0	0		0	0	0	£0	33706	
CHP - Geothermal, mine water (100 homes district heating)	0	0		0	0	0	£0	Annual local electricity consumption [MWh]	
Water source heat pump (100 homes district heating)	0	0		N/A	0	0	£0	28656	
Solar thermal - domestic (1 card represents 5% of homes)	1	180	5%	N/A	271	25	£721,511	proportion of electricity demand produced locally (%)	
Air source heat pump - domestic (1 card represents 5% of homes)	1	180	5%	N/A	1941	180	£1,623,400	118	
Ground source heat pump - domestic (1 card represents 5% of homes)	0	0	0%	N/A	0	0	£0	Annual local heat supply [MWh]	
								2212	
								Annual local heat consumption [MWh]	
								73889	
								proportion of heat demand produced locally	
								3	

