

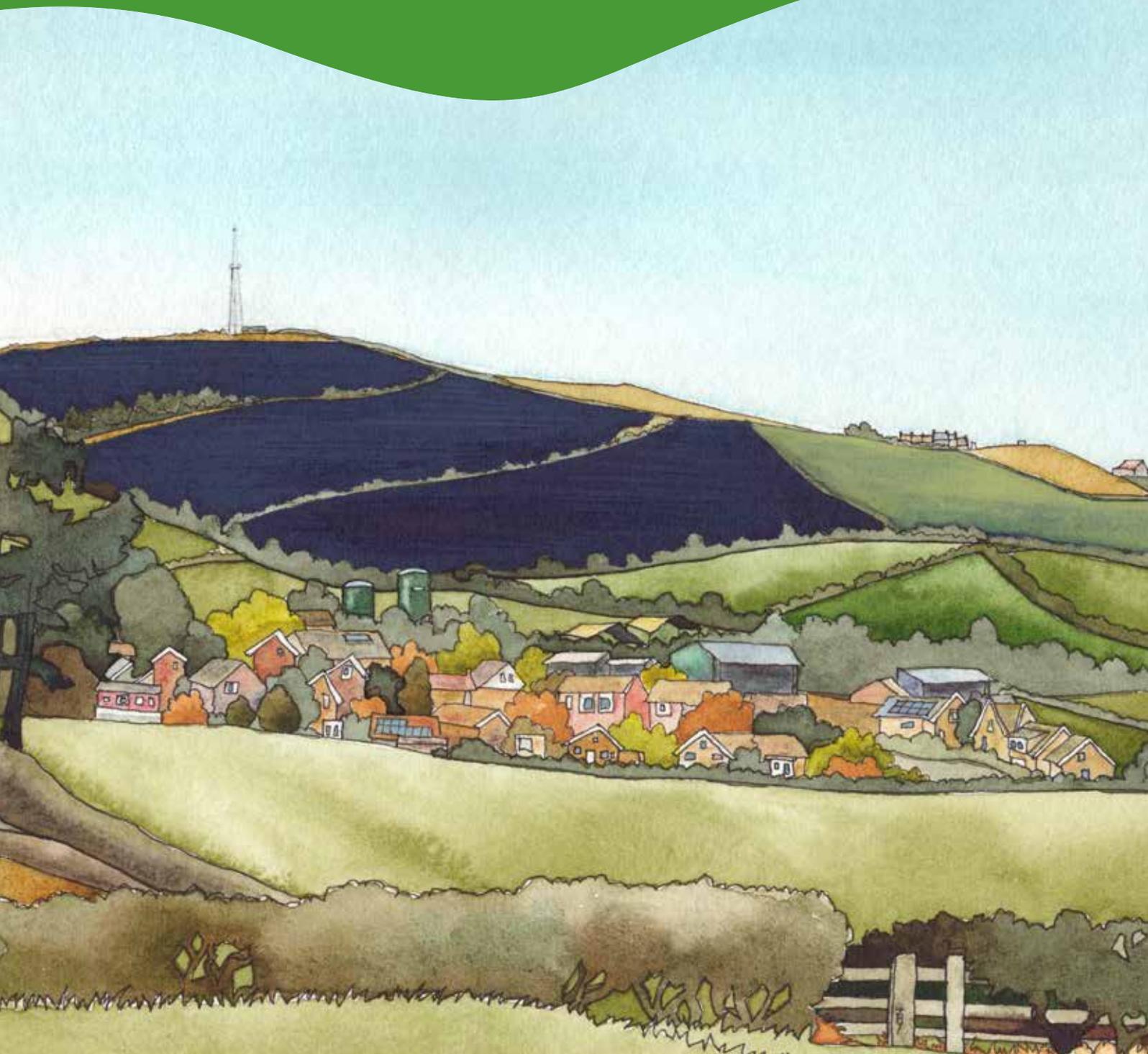


The
countryside
charity



The future of renewable energy in Loftus

A community vision



CPRE, the countryside charity

CPRE is the countryside charity that campaigns to promote, enhance and protect the countryside for everyone's benefit, wherever they live. With a local CPRE in every county, we work with communities, businesses and government to find positive and lasting ways to help the countryside thrive - today and for generations to come.

CPRE North Yorkshire

CPRE North Yorkshire was delighted to support this innovative project as we all recognise the growing demand for renewable energy.

It is too easy for local communities to have external plans dropped on them, before they have chance to consider options. The local community knows its own landscape, and it is important that potentially conflicting pressures can be brought together in a way which is acceptable to local people and the quality of their lives.

About Loftus

The Civil Parish of Loftus is situated on the eastern edge of the Borough of Redcar and Cleveland. The North York Moors National Park lies to the south of the town and stretches into the south-eastern half of the Parish. The northern coastline of the Parish features some of the highest cliffs in the east of England and is traced by the Cleveland Way National Trail. Flowing from the south are several becks, forming steep valleys covered in part by ancient woodland. The Parish is full of history, including Neolithic monuments, an Anglo-Saxon royal burial site and a medieval abbey. More recently, there is a significant industrial heritage in the area including

alum mining at Hummersea and Boulby, and ironstone mining and steel production at Skinningrove. The Parish of Loftus is relatively large at 4153 hectares and includes the villages of Carlin How, Liverton, Skinningrove and Easington, as well as the main town of Loftus itself. In 2011, the Parish population was 7988 residents. During the workshops that informed this document, we spoke to Loftus residents with a wide range of backgrounds, including a town councillor, members of the local walking groupⁱⁱ, a local farmer, and an employee of the North York Moors National Park Authority who attended in a personal capacity.

What we do

We connect people with the countryside so that everyone can benefit from and value it. We promote rural life to ensure the countryside and its communities can thrive. We empower communities to improve and protect their local environment. Through all our work we look at the role of our countryside in tackling the climate emergency, including seeking ways to increase resilience and reduce impacts.

MCS Charitable Foundation

“MCS Charitable Foundation are pleased to support this CPRE project which is demonstrating how to engage and involve people from across Loftus in the planning of renewable energy in their area. The project aligns with our vision for a world where everyone has access to affordable and reliable renewable energies for the benefit of the environment and communities.”

The climate emergency and the countryside

As councils and countries declare a climate emergency, the impact is already clear in our daily lives. The seasons are on the move, crops grown for generations fail and some species hover on the brink of extinction. Our countryside is changing - and we need to make sure it does so in a way that helps mitigate the impacts of the climate emergency and creates a countryside that we can all cherish.

In recent years, floods from heavy rainfall have brought to life the devastation a changing climate has on our daily lives. Images of sandbags piled up outside doors, submerged cars in flooded streets and local shops ruined by muddy water are now all too common.

Farmers struggle to grow our food and maintain their livelihoods in the face of such extreme weather, pushing the resilience of the countryside and its embattled communities to the limit. And some of our most cherished natural icons, such as English oak trees and beloved wildlife like hedgehogs and bumblebees, face challenges to adapt to changing weather patterns. Ecosystems are facing collapse and the biodiversity of our countryside is declining unabated. All of this threatens the look, feel and health of the landscapes we know and love.

The decisions that we make now, and the approaches that we take, will shape our countryside and its communities for years to come. It's essential that we get it right from the start.

We know that achieving net-zero carbon emissions will mean a huge number of new renewable energy developments, many of which will be situated in rural areas, and this raises the prospect of potentially enormous landscape impacts, as well as new income streams, arising from the energy transition.

The need for rapid action must not be at the expense of the conservation and enhancement of our precious landscapes. For new renewables in the countryside to be done well, local people must be better involved in the decision-making process to minimise the impacts of new developments on landscapes and allow for a just transition to net-zero.

That is why CPRE has created the Community Visioning process – to empower the people of parishes like Loftus to set out where and under what circumstances they believe that new renewable energy could be sited within their local landscape.

The Community Visioning process

The process used to create this vision was developed by CPRE, building upon previous work with the Centre for Sustainable Energyⁱⁱⁱ. It involved a series of three workshops in which residents of Loftus came together to discuss how they felt renewable energy could be appropriately integrated within their local landscape.

First workshop

In the first workshop attendees discussed their connection to Loftus and the countryside around it. Residents identified areas in the local landscape that are particularly familiar or cherished, as well as those places that they felt less positively about and the parts of their countryside that were important to them but had been lost due to landscape change. The discussion ranged over aspects of Loftus' countryside that residents felt are particularly distinctive and their emotional response to the landscape – how they would describe it and how it makes them feel. This discussion set the context for how residents would react to potential changes to their landscape as a result of new renewable energy developments.

Second workshop

The second workshop focused on issues to do with energy infrastructure and how much electricity Loftus residents need. This discussion began with attendees talking about their awareness and opinions of pylons, wires and other types of energy infrastructure in the countryside around them. We then considered how this might change as we use more electricity generated renewably in order to reduce carbon emissions contributing to climate change.

Using a tool (the CESAR spreadsheet) developed by the Centre for Sustainable Energy we were able to explore how much renewable electricity would need to be generated in the Loftus landscape in order to meet the needs of local residents, and how much different types of technology, like solar panels or wind turbines, could contribute towards this. By the end of the second workshop local residents had suggested a mix of new renewables that they would be willing to see integrated into the landscape around Loftus.

Third workshop

In the third and final workshop we used maps of the local landscape to identify locations for where the new renewables suggested in the second workshop could be sited. Issues around who would own and profit from new renewable energy schemes in the Loftus countryside were also discussed, as were ways that the impact on the landscape of these schemes could be minimised and even deliver benefits to nature and wildlife locally. Working together, attendees filled in a map of Loftus with where and how new renewable energy could be generated locally in the future, which forms the basis for this community vision.

The Loftus landscape and renewable energy

In the workshops that created this vision it was clear that the residents of Loftus have a very strong connection to their local landscape and its variety of habitats and heritage. The beauty of the surrounding countryside is a clear source of pride for local residents.

‘We’re very proud of the area’
‘We’ve got the evidence for Pangea in Redcar... and the Dogger Bank’

‘We like the location more than anything, it’s close to the coast, close to the woodland, the moorland...’

Attendees particularly valued the local network of footpaths and appreciated the countryside as a location for walking in, especially with the views of the coast.

‘Wherever you want to go there is a public footpath’, ‘every time you go out you can come back a different way’

‘Our coast matches up to anybody’s’
‘I think it is lovely. The coastline is one of the best around’

‘One of the best views in the country’

The discussions revealed a strong concern for local heritage and landscape features that are under threat, such as Kilton Castle. This included areas that have been damaged by storms and are at risk from the extreme weather events caused by climate change, such as river bank path erosion from flash flooding in Clarkson’s Wood and accelerated cliff erosion on the Hummersea coast.

‘Modern farming has come in the last few years’

Loftus residents are also particularly concerned by the state of nature locally with recent agricultural changes and the loss of hedgerows being noted as a serious impact on the countryside. There is a strong interest in more being done to support wildlife in the area and this was a recurring feature of our conversations.

Local industrial sites such as the Skinninggrove steel plant and Boulby Mine have become accepted parts of the landscape as well as valuable parts of the local economy. Throughout the discussions Loftus residents showed a real pragmatism in balancing enjoyment of the local countryside with the needs of industry and employment.

Throughout the visioning process, Loftus residents were supportive of producing their electricity close to home and so were open to exploring a range of options for renewable energy in the local landscape.

‘The more you can generate locally the better it is’

There is already infrastructure in the Loftus countryside generating renewable energy, including wind turbines at Kilton, Highfields Farm and Scaling and domestic solar panels at the Hummersea Hills estate, as well as a prominent windfarm offshore from Redcar.

‘It’s quite relaxing watching it’

While residents did not object to local energy infrastructure in principle, the strong appreciation for the surrounding landscape meant that there was a clear feeling that protections applied to the countryside in the North York Moors National Park, particularly in respect of underground intrusive electricity poles and wires, should be extended to the whole area.

‘Most people would rather have them underground, we don’t get a say’

‘We wouldn’t allow that in the National Park and our landscape is just as important...’

There is already an expectation that more renewable energy will come to Loftus’ countryside in the coming years but residents are concerned about the possibility of uncontrolled developments across their landscape. On the other hand, there is strong enthusiasm for making use of the potential for local becks (rivers) to provide hydropower.

‘20 years ago there was nearly nothing, in 20 years’ time wind and solar will be everywhere’

‘They’ve got to happen but hopefully we will have a say’

Overall, there was a clear feeling that new renewable energy schemes could be installed locally without causing serious harm to the landscape. Many residents felt that wind turbines can be aesthetically pleasing and the main concern was that they should be sited in a way that avoids impacting cherished views of the countryside. Attendees were also willing to accept a significant amount of ground mounted solar in their landscape if it is well screened, for instance with hedgerows that restore lost elements of the local countryside and support wildlife and biodiversity.

‘The elegance of wind turbines is a beautiful thing.’ ‘It’s either a wind turbine or a coal plant’

‘If we didn’t have it, it would have to go somewhere else.’ ‘If electricity cuts out in ten years... we’ll think, “Why didn’t we have half a dozen wind turbines in Loftus?”’ ‘Why don’t we all have a little bit of it [renewables] rather than having it all in one place?’

‘A big one at the top of the hill would be very dominant in the landscape’

‘Large is too large for this landscape’

(from the choices offered to residents, large refers to a turbine with a hub height of up to 100m or 330 feet)

‘As long as it is out of sight it’s ok’

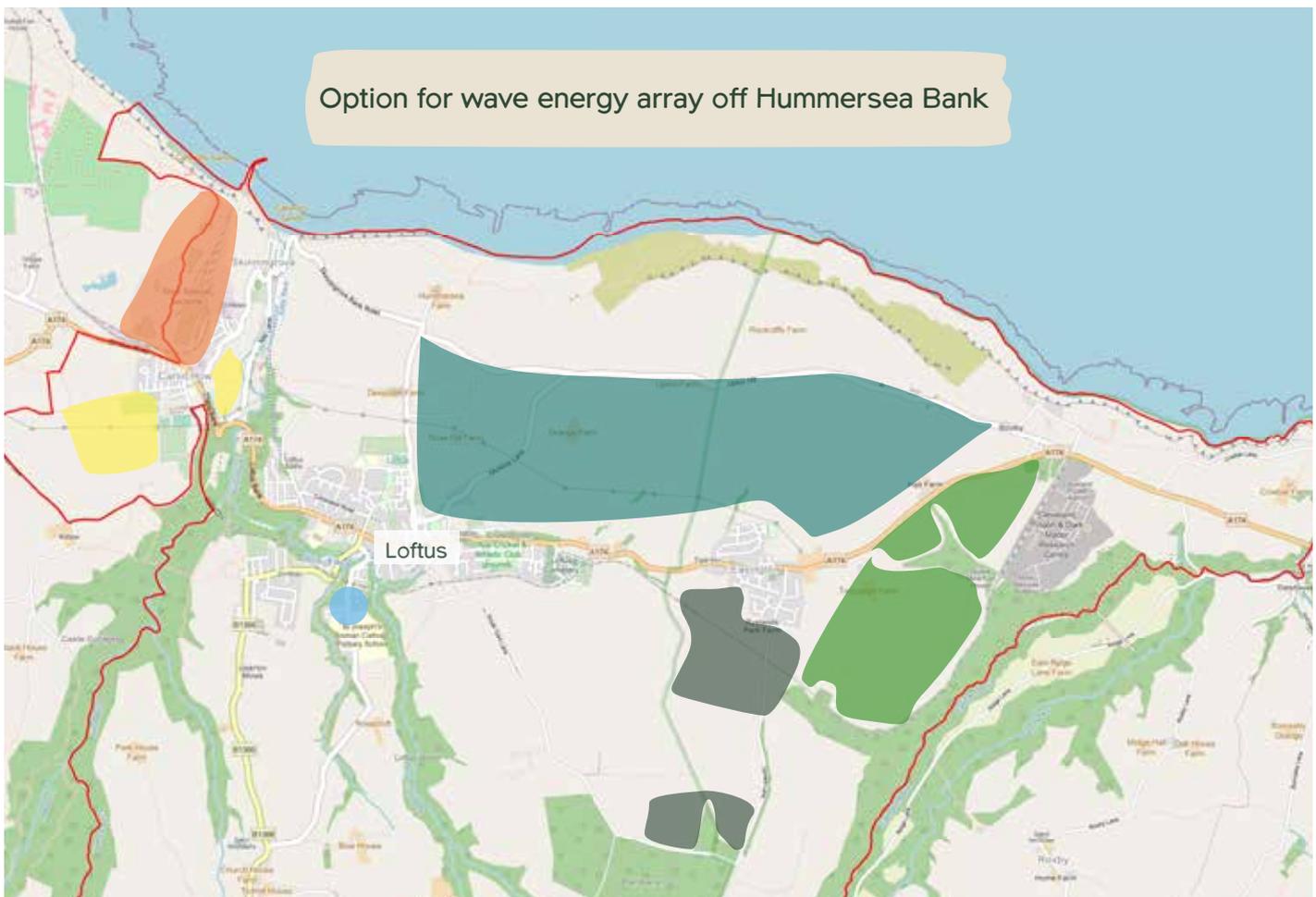
‘I don’t think 10 hectares would affect many people if it was done sensitively’

(referring to ground mounted solar panels on agricultural land)

Map of proposed installations

In total the workshop attendees proposed a vision for the future of renewable energy in the Loftus landscape which includes:

- 4 small wind turbines
- 2 medium wind turbines
- 1 micro-hydro scheme
- 20 fields of ground mounted solar panels
- Supplemented by solar panels installed on at least half of the houses across the Parish



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|--|---|---|--|
|  | Two medium wind turbines at rear Skinningrove steel works |  | Broad area of search for solar on south facing farmland (note pylon line to south) |
|  | Solar area of search: low grade land adjacent allotments Carlin How |  | Solar area of search near Boulby Mine |
|  | Potential micro-hydro scheme, Loftus Mill |  | Areas of search for additional small wind turbines |



Figure 1

Two medium wind turbines on brownfield land west of Skinningrove, seen from the Cleveland Way near Hummersea Cliff.

Wind power

Whilst it was felt by some that larger turbines could be intrusive in the wider Loftus countryside, half of which is within the National Park, it was felt that the main industrial ‘brownfield’ area within the Parish – within or close by the Skinningrove steel works – was a good site for two medium-sized turbines (60m or c.200 feet to hub). These would probably be best positioned to the rear (west) of the main works buildings. Achieving sufficient standoff to the steelworks, however, could mean siting them just outside of the Parish boundary. Liaison would be required with British Steel, adjacent landowners and Skelton and Brotton Parish. An illustration of the turbines in situ, as viewed from the Cleveland Way near Hummersea Cliff is shown in Figure 1.

For smaller turbines (26m or 85 feet to hub) it was suggested the Parish could accommodate up to four turbines. The main area identified was south east of the town and south of nearby Easington, roughly bounded by South Town Lane, Gother Hill and Grinkle Lane, with land above the Easington Tunnel, east of Grinkle Lane also being identified.

No specific locations for the turbines were suggested but an illustrative view from the A174 near Twizzlegill Farm, looking broadly south west has been drawn up, showing two new turbines which would then be perceived as part of a group with the existing similar-sized turbine at Highfields Farm, off South Town Lane (see Figure 2 below).

Figure 2

Two additional small turbines (turbine on right is existing at Highfields Farm) to the west of Grinkle Lane, seen from the A174 near Twizzlegill Farm.



Micro-hydro power

The local becks were identified as a characteristic feature which had been previously utilised for mechanical power, especially the former corn mill below the confluence of Middle Gill and the subsidiary beck running through Hancock's Wood. Although there is some infrastructure remaining, notably the high weir ('waterfall'), low flows in the beck suggest very little utilisable capacity (<20kW). Nevertheless, an initial scoping exercise could be carried out if reasonable estimates of head and flow can be obtained and a suitable turbine house location found.

There could be other potential micro-hydro sites in the Parish, given the existence of other mills, especially those on larger becks, such as Kilton, Liverton and Easington. Again, rough capacity estimates could be made if head and flow values are obtained.

Ground mounted solar

Quite large areas of potentially suitable land were identified for ground mounted solar installations and a target of c.20 fields, each of 2.5 acres (equivalent to 1.5 football pitches) was set. The main areas identified were on south-facing slopes between the A174 to the south and bounded to the north by the minor road from Hummersea, through Upton and Street House to Boulby, including land near Dwindinner Hill, Grange Farm and below the telecommunications mast adjacent Rockcliff Hill (see Figure 3). Although relatively close to the valued coastal landscape and the Cleveland Way, and therefore identified in local renewable energy capacity studies as sensitive^{iv}, very few views can be had from the coastal path into this area. However the area around Street Houses Farm is sensitive archaeologically, including historic landscape elements which could be impacted negatively by fields of panels and cable burial, and hence perhaps best avoided.

Roof-mounted solar

It was suggested that further low carbon solar energy could be boosted by an aim to retrofit roof mounted panels onto approximately 50% of the existing housing stock in the Parish, subject to the degree of financial incentives available to encourage uptake. It was also noted that a more consistent and pro-active approach would be required to policies relating to buildings within the town's Conservation Area.

Other buildings such as the United Reform church (also the subject of regeneration initiatives) and the former bus station in South Loftus could benefit from solar arrays. Noting concerns raised regarding the likely future difficulty of charging electric vehicles in Loftus, where little offstreet parking exists, it is suggested that the bus station area might be suitable for a solar charging carpark, available both to visitors during the daytime and residents overnight.

Figure 3

A solar array to the south of Boulby mast as seen from Grinkle Lane.





Figure 4

A solar array at the rear of Boulby mine, viewed from Roxby.

Further east, land to the south east of Easington was identified including south east sloping parcels between the A174, east of Ings Farm and the rear bund of Boulby Mine. This is illustrated in Figure 4 from the viewpoint of Roxby to the south.

Other peri-urban sites were identified at the western end of Loy Lane, adjacent to the extension cemetery, to the west of Carlin How allotments west of Mill Lane, and on rough ground to the east of Carlin How, forming the east bank of the Skinningrove valley. Some areas adjacent to the tower-mounted electricity line running west-east across the Parish, north of the A174, may be more suitable on account of the existing visual impact.

Other options for further investigation

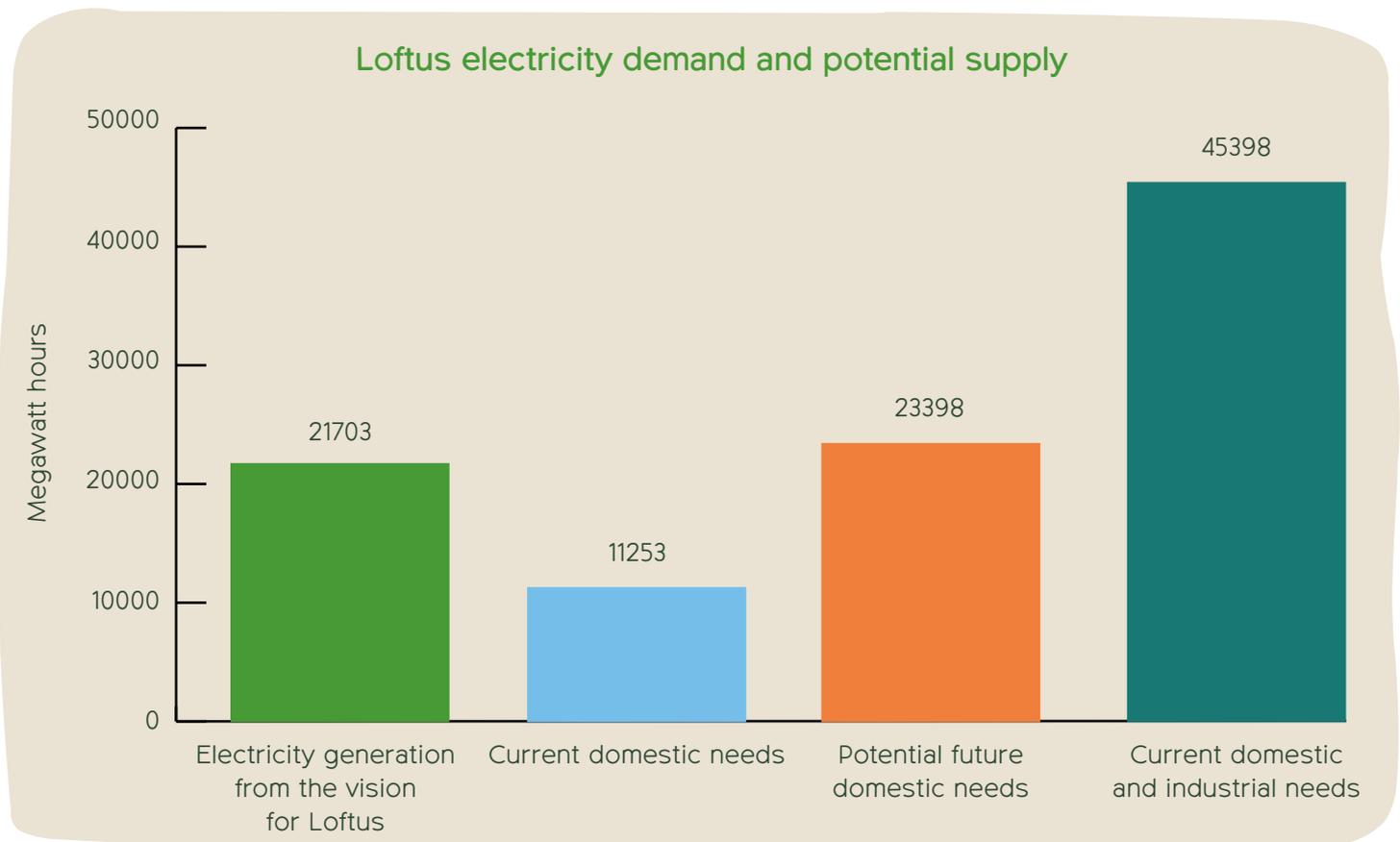
Although the following technologies would have little impact on the open countryside, residents also raised the local potential for deep geothermal energy from Boulby Mine and possibly also from warm mine water at depth associated with flooded ironstone mines in the Parish, notably around Skinningrove, which could be utilised in conjunction with heat pump technology. Community heat pump schemes are currently emerging as a local option in some parts of the country^v.

Finally, and partly in the light of concerns raised about the negative aspects of climate-induced higher wave energy causing accelerated coastal erosion, suggestions were made in respect of near-offshore wave energy arrays, for instance near Hummersea Bank^{vi}.

The benefits to Loftus of a low carbon future

In total, the new renewables that residents of Loftus proposed as suitable for the local countryside in the Parish would generate around 21,703 megawatt hours per year, nearly twice the domestic needs of local residents.

As the graph below shows, Loftus residents have put forward a plan that would provide nearly all of the electricity they would need in a future where their day to day use has increased significantly, with an assumption of half of residents moving to electric cars, and half of homes being heated by electric powered air source heat pumps. Given the high demand for electricity from sites like the Skinningrove steel works and the Boulby mine, it is notable that the sites identified as suitable for renewable energy in the Parish landscape could still meet nearly half of domestic and industrial electricity demand, just from local sources.



Throughout the discussions that created this vision, it was clear that Loftus residents want to be careful not to sacrifice the beauty of the local landscape for the sake of generating a commodity (electricity). However, there was also a recognition that having appropriate scale and well sited renewable energy in the area could bring valuable benefits to the Parish.

If the schemes proposed in this vision were to go ahead, residents would like to see some of the profits to be used to enhance the local landscape in other ways, for instance through undergrounding intrusive electricity wires that spoil some of the surrounding views.

Similarly, there was a clear desire for solar fields to bring investment in genuine biodiversity improvements such as local hedge and verge planting to support pollinators, provide wildlife corridors and prevent soil erosion. It was even suggested that the creation and management of new networks of hedgerows to shield solar developments could provide an important source of land-based employment and training in rural skills for young people in the area.

The possibility for solar farms to bring biodiversity benefits to Loftus can be seen in Figure 5 which envisions new hedgerows around solar panels seen adjacent to Micklow Lane.

Finally, there was a clear feeling that any growth in renewable energy generation across Loftus should also translate into lower prices for local residents so that clean energy produced in the Parish also helps to tackle fuel poverty.

Figure 5

New hedgerows shown around solar panels at the top of Micklow Lane.



Next steps

This document marks the beginning of a conversation. The vision for the future of renewable energy in Loftus' landscape will no doubt adapt over time and as more residents engage with the project. Nevertheless, by setting out a clear plan for where, how and on what conditions more renewable energy could be generated in their local area, this community vision gives the residents of Loftus a powerful tool to take the future of their countryside into their own hands.

Too often the shift to low carbon energy across England has become divisive and confrontational when rural communities have been presented with a proposed scheme in their landscape which they have had little input on and must either accept or reject. By developing this pro-active vision for the future, the residents of Loftus have sent a clear message about the importance of their landscape and what renewables done well would look like in their local context.

In summary, this community vision shows that the residents of Loftus are prepared to play a significant role in the effort to avert the climate emergency. This vision would generate enough low carbon electricity not just to meet the needs of the Parish of Loftus now, but also well into a future based around electric cars and electric heating in their homes. Loftus residents have shown that they are in favour of renewable energy not just in principle, but would also support hosting new installations in their countryside as long as these developments are sited sensitively to protect the stunning views across their landscape. There is an especially clear appetite for renewable energy schemes that contribute to the restoration and enhancement of the habitats, nature and wildlife that Loftus residents clearly value passionately.

There are many steps the residents of Loftus can now take to make their community vision for the future of renewable energy in their landscape a reality. There are discussions to be had with the local council and national park authority, to see this vision incorporated into local or neighbourhood plans. Northern Powergrid (the local distribution network operator) will also be an important partner, to ensure that Loftus has the right infrastructure to support the renewable energy residents want to see. This vision could be used to pro-actively seek out landowners and renewable energy developers who would be interested in bringing forward one or more of the schemes residents have shown support for. Or, perhaps most excitingly, this document could be used as a plan for establishing a community energy scheme in Loftus, with residents coming together to design and implement their own renewable energy development, with the profits flowing back to the local community.

CPRE will continue to support the residents of Loftus as they take this community vision forward. For any readers outside of Loftus, CPRE has a network of local groups across the whole of England who could partner with you to develop your own community vision for the future of renewable energy in your local landscape.

If you would like to find out more about this project and explore the opportunities for running the community visioning process in your local area please contact us at info@cpre.org.uk

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Disclaimer: the artist's impressions reproduced in this vision document are illustrative montages showing technologies and locations which have been suggested by local residents attending the community workshops. They do not imply any intention to develop those sites by the relevant landowner or indicate the feasibility of doing so, either in engineering or planning terms. They have been created to indicate the likely change in the local landscape and to foster further discussion of the need for and acceptability of such changes.

Useful links and key stakeholders

CPRE North Yorkshire

<https://www.cprenorthyorkshire.co.uk/>

MCS Charitable Foundation

<https://www.mcscharitablefoundation.org/>

Loftus Town Council

<https://www.loftustc.co.uk/>

Redcar and Cleveland Borough Council

<https://www.redcar-cleveland.gov.uk/Pages/default.aspx>

<https://www.redcar-cleveland.gov.uk/resident/planning-and-building/local-plan/Pages/Renewable-and-Low-Carbon-Study.aspx>

North York Moors National Park

<https://www.northyorkmoors.org.uk/>

Northern Powergrid

<https://www.northernpowergrid.com/>

<https://www.northernpowergrid.com/community-energy>

Centre for Sustainable Energy

<https://www.cse.org.uk/>

Community Energy England

<https://communityenergyengland.org/>

British Hydro Association

<https://www.british-hydro.org/micro-hydro/>

References

ⁱ https://www.nationaltrail.co.uk/en_GB/trails/cleveland-way/

ⁱⁱ <https://www.walkingloftusandthenorthyorkshirecoast.com/>

ⁱⁱⁱ <https://www.cse.org.uk/projects/view/1315>

^{iv} See Figs 4.13a and b, following p.110 in Renewable and Low Carbon Study for the Borough of Redcar and Cleveland, LUC, 2015. <https://www.redcar-cleveland.gov.uk/sites/default/files/2022-04/Renewable%20and%20Low%20Carbon%20Study.pdf>

^v <https://www.west-dunbarton.gov.uk/council/newsroom/news/2020/dec/district-heating-network/>
<https://www.cambridgeshire.gov.uk/residents/climate-change-energy-and-environment/climate-change-action/low-carbon-energy/community-heating/swaffham-prior-heat-network>

^{vi} See <https://www.emec.org.uk/about-us/wave-clients/pelamis-wave-power/>

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