

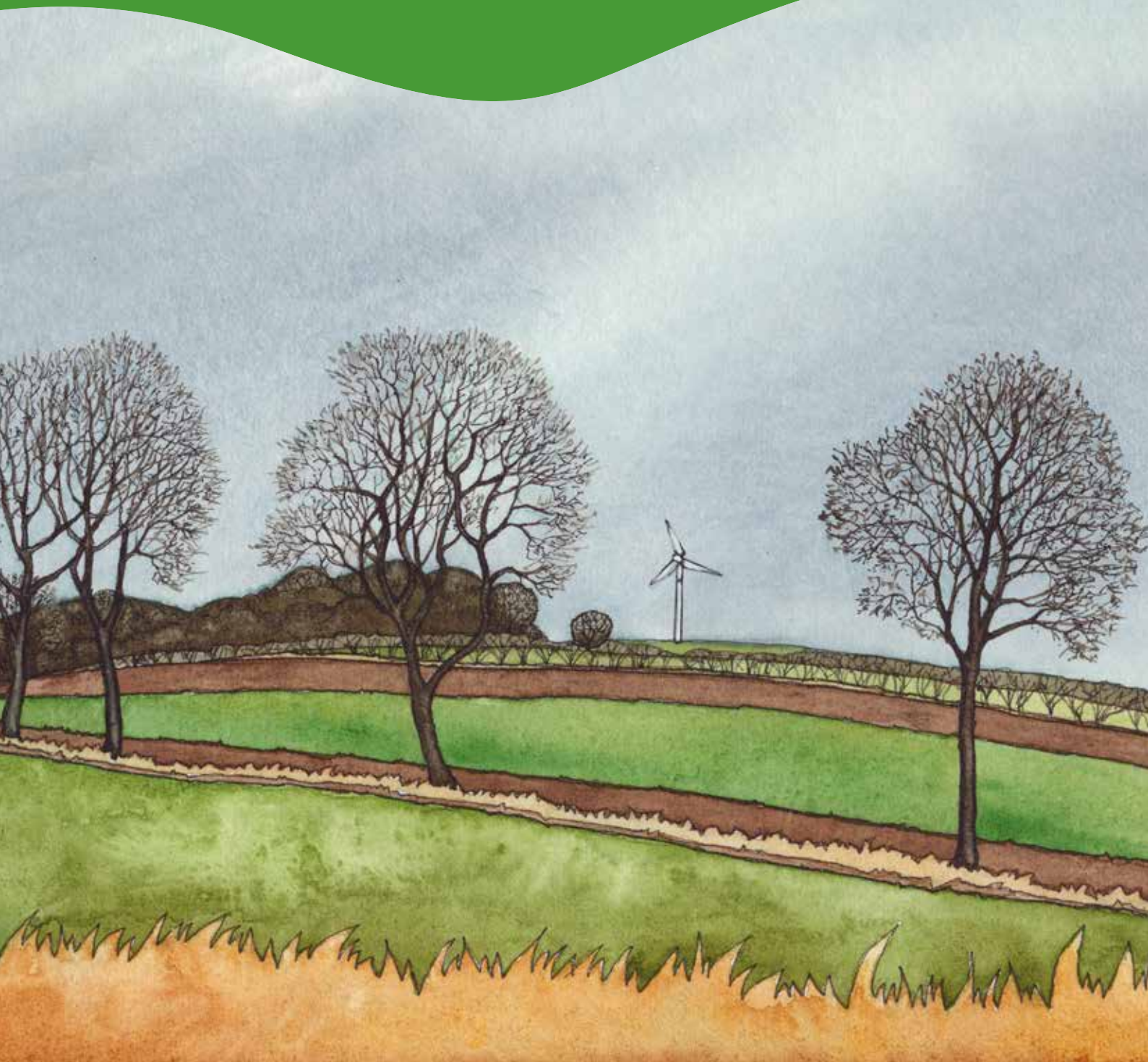


The
countryside
charity



The future of renewable energy in Thornton le Dale

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 and East Yorkshire

CPRE North and East 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 Thornton le Dale

The Civil Parish of Thornton le Dale is just east of the market town of Pickering, with about two thirds of the parish falling within the North York Moors National Park (NYMNP). The southern part of the Parish, including the High and Low Marishes within the Vale of Pickering, is part of Ryedale District. The Parish of Thornton is relatively large at 3920 hectares and is dominated by farmland and forestry, including Dalby Forest. Both the village and Dalby Forest are very popular visitor destinations. In 2011, the Parish population was 1759 residents. During the workshops

that informed this document, we spoke to Thornton residents with a wide range of backgrounds, including a county councillor, members of the local volunteer hub, local farmers, plus working and retired residents from many walks of life. Some of the workshop attendees lived outside of the Parish but had strong links with the area, including working or playing in the Parish. Twenty eight attendees took part over the course of the workshops, half of whom attended all three sessions, and four of whom were landowners in the parish area.

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 Thornton le Dale 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 Thornton 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 Energyⁱ. It involved a series of three workshops in which residents of Thornton 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 Thornton 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 the parts of Thornton's 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 respond 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 Thornton 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 the carbon emissions contributing to climate change.

Using the CESAR spreadsheet, a tool developed by the Centre for Sustainable Energy, we were able to explore how much renewable electricity would need to be generated in the Thornton landscape in order to meet future needs, and how many different types of technology, like solar panels or wind turbines, could be used to contribute towards this. No conclusions were reached in this session due to lack of agreement on the scale of ambition required for local low carbon provision.

Third workshop

For the third and final workshop we undertook an additional exercise to help identify preferred technologies and their scaling. Maps of the local landscape were used to pin point locations for where the new renewables could be sited. Issues around who would own and profit from new renewable energy schemes in the Thornton 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 the parish with where and how new renewable energy could be generated locally in the future, which forms the basis for this vision.

The Thornton landscape and renewable energy

In the workshops that created this vision it was clear that the residents of Thornton have a very strong connection to their local landscapes. Much of this was informed by many attendees being closely involved in land management and farming and their understanding of the way in which their activities shape the countryside. The beauty of the surrounding countryside is a clear source of pride for local residents, who also understand why it is such a draw for visitors. However a number of negative aspects of visitor pressure, especially in the summer season, were a consistent concern, such as excessive traffic.

Attendees particularly valued the local network of footpaths and appreciated the countryside as a location for recreation, both for walking and cycling.

‘It’s ‘doorstep countryside’: no need to take a car to go for walk, you just go straight out’

The discussions revealed a strong understanding of and connection to a working countryside, even by those who had moved to the village for amenity reasons.

‘Working life is part of the landscape and shapes the landscape: farming, forestry, shooting, fishery’

‘Working on the land ‘clamps’ us to the area’

Huge value was also put on biodiversity, tranquility and local beauty, including the village’s built heritage.

‘A soft landscape (compared to the moors)’
‘There is a sense of openness, solitude and peace’

‘Wildlife regularly comes right into the village, especially from forest areas in the north, deer for example’

‘We enjoy the natural environment: flowers, fields, flora.’ ‘We experience the seasons properly, feel close to them’

Throughout the visioning process, Thornton 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.

‘If we’re going to do it at all, we should do it for the needs of the whole parish’

It was also seen as a joint endeavour across the different parts of the community.

‘There’s a need for a holistic approach’

‘Involve all interests – estates, forestry and farming’

There is already energy infrastructure in the Thornton countryside generating renewable energy, including small wind turbines, solar panels and anaerobic digestion on farms in the Marishes and inbuilt solar panels on the new houses at Aunums Field. In the wider Ryedale area, there has also been a long history of natural gas extraction, feeding Knapton power station just south of the parish, though this is now decommissioned and being converted into a low carbon energy park.

Residents also noted the mini-pylon (tower) electricity line that runs south-north through the parish, with some regarding it as visually intrusive. While residents did not object to local energy infrastructure in principle, it was noted that the tower line had been removed and cables placed underground further north in the open moors in the national park. There was a desire expressed for local electricity lines in the Parish to be similarly undergrounded in the future. It was also noted that some burial of low voltage wires had occurred in the village but more needed to be done.

Historic use of waterpower on Dalby and Thornton Becks, for example at Burgess Mill, was noted but it was recognized that average flow was probably insufficient to generate meaningful amounts of electricity.

Overall, there was a clear feeling that a mix of technologies was best suited to the parish area. There was general agreement that medium or large wind turbines were not appropriate in the national park area of the parish and would also dominate views of the Marishes within the intimate landscape of the Vale of Pickering. However small turbines were seen as broadly acceptable, dotted throughout the landscape, especially where associated with farm buildings.

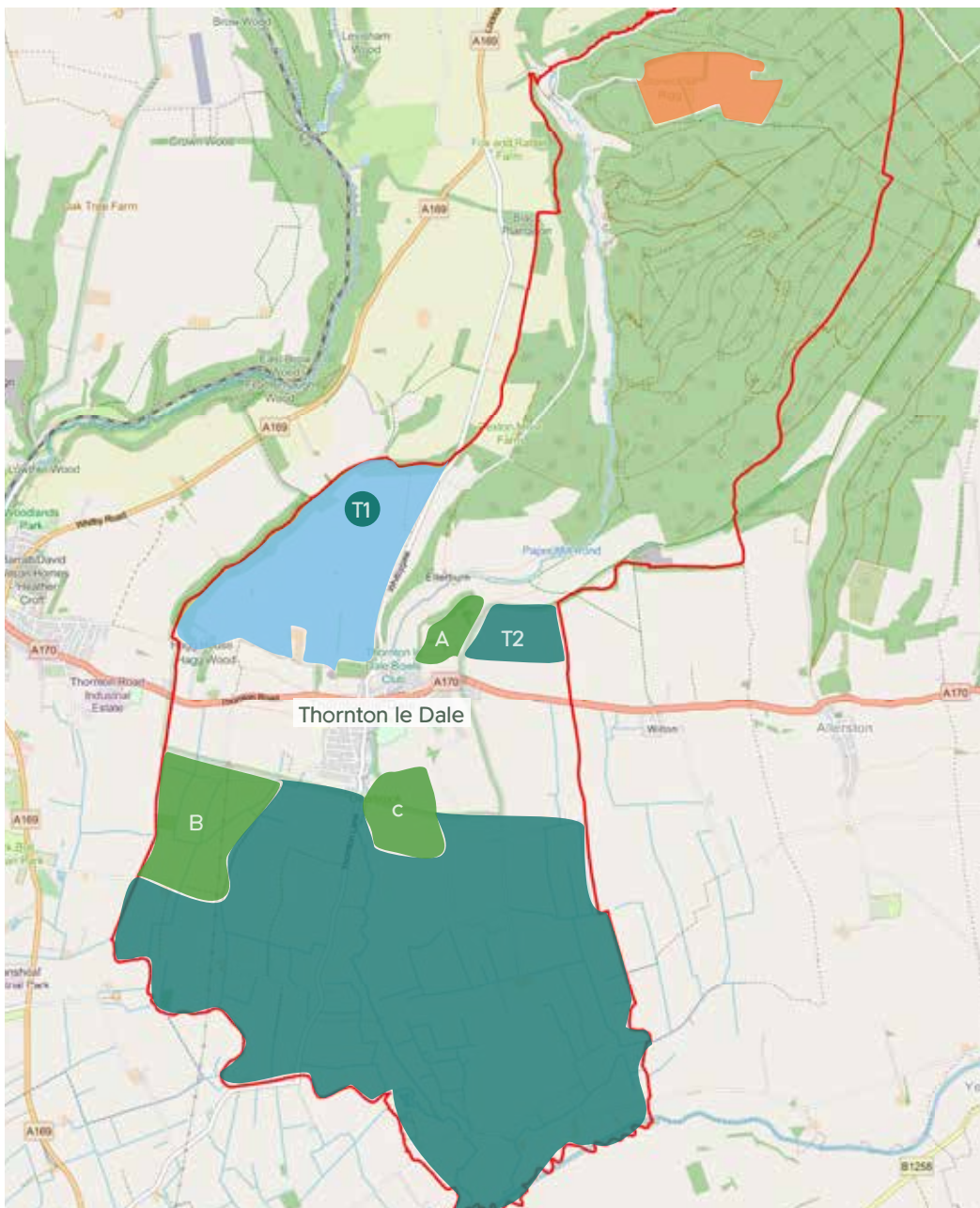
Attendees were also willing to accept a significant amount of ground mounted solar in their landscape if it is well screened, for instance with hedgerows that restore lost elements of the local countryside and support wildlife and biodiversity. Although deploying solar panels on roofs, both domestic and farm buildings, was stated to be a priority, this was not to be at the expense of the historic pantiled roofscape of the village.

It was also felt that another anaerobic digester plant could be countenanced, as long as there was good road access for any imported feedstock. Considerable interest was also expressed in a community ground source heat pump scheme.ⁱⁱ Finally the future need for charging of electric vehicles was also noted.

Map of proposed installations

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

- up to 8 small wind turbines
- up to 35 acres of ground mounted solar panels
- 1 new anaerobic digester
- supplemented by solar panels installed on approximately 25% of the houses across the Parish (an estimate of 200 properties with rooftop solar)



Dalby Forest - open areas (but shielded by forest edges) identified for small turbines or solar



High Fields area identified as broad area of search for small turbines and solar arrays



Small turbine sites
T1: top of High Fields, adjacent Whitbygate.
T2: top of Outgang Lane



Areas for solar
A: identified at former quarry/tip B: near the substation C: the sewage works



High and Low Marishes. Broad area of search for small wind turbines, close to farm buildings

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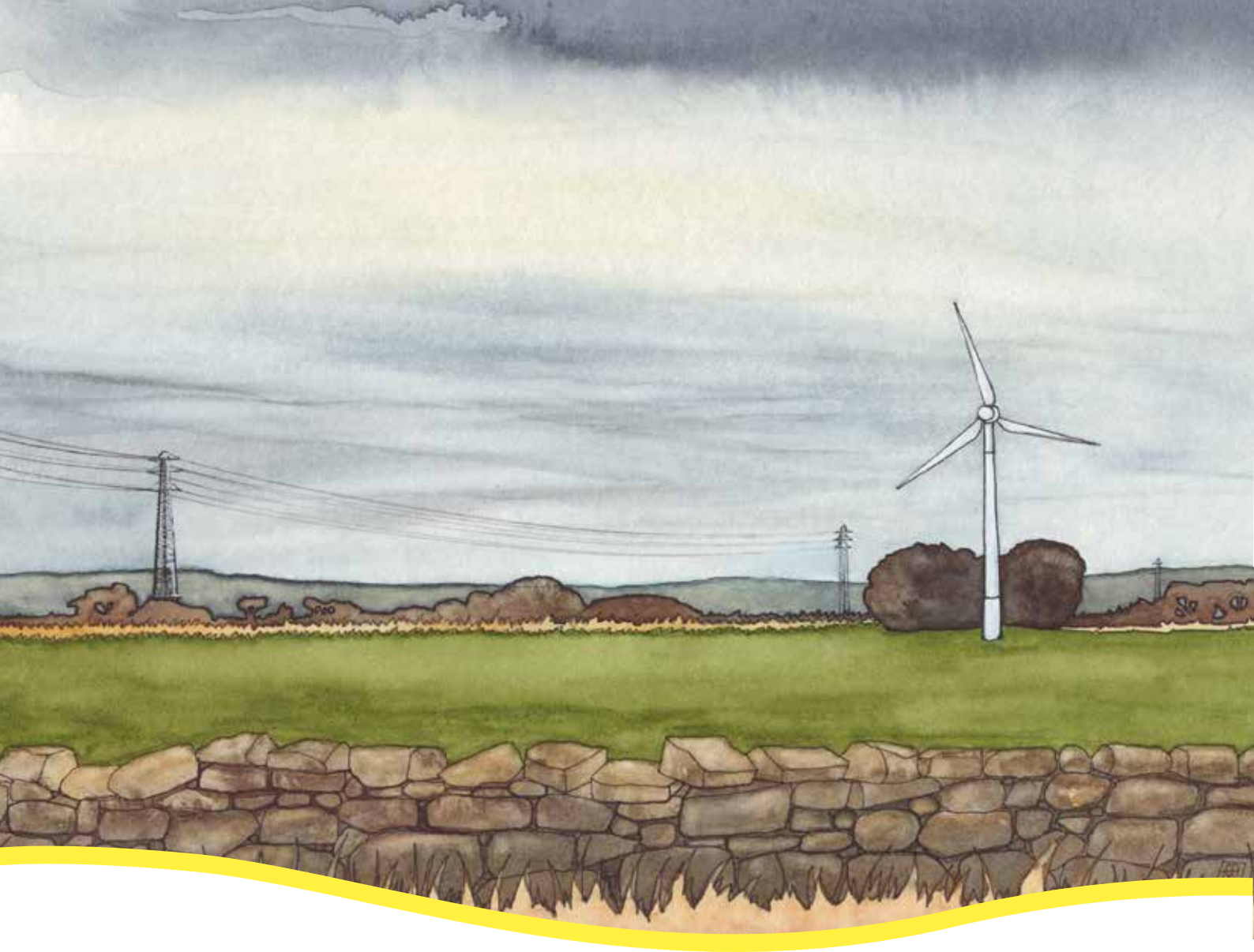


Figure 1

A small turbine at High Fields by Whitbygate, looking south from the footpath to Scalla Moor off the byway to Kingthorpe.

Wind power

It was felt by most attendees that medium or large turbines would be unacceptable with the part of the Parish that fell either within the National Park or in the intimate and enclosed small scale landscape of the Marishes. However, a number of areas were thought to be suitable for small turbines (26m or 85 feet to hub), including an open area within Dalby Forest, at Stoneclose Rigg, by High Rigg Farm; the plateau of High Fields, adjacent to Whitbygate where the tower electricity line already affects the open landscape (see Figure 1); and Thornton High Fields adjacent to Outgang Lane (see Figure 2). All were thought to be well screened from distant views or were unlikely to be a dominant feature on an upslope horizon.

Some of those locations are within the National Park (Stoneclose Rigg and High Fields plateau). The NYMNP's Renewable Energy SPDⁱⁱⁱ shows these locations to be within the 'Forest' and 'Limestone Hills' landscape types where wind turbines should either be 'located within clearings with a backdrop of trees or associated with buildings' or 'in association with settlements and buildings, particularly modern buildings. Turbines should be located away from long views across the flat tops', such as at High Fields. In the latter case, it is felt that careful positioning would avoid harmful long views.

A further broad area of search was identified across the Marishes, in the south of the parish where small turbines could integrate with the dispersed pattern of farmsteads and field edge trees, especially if located in visual association with existing agricultural buildings/farmsteads.

Figure 2

A small single turbine at the top of Thornton High Fields, seen from near Outgang Lane.



Roof mounted solar

It was suggested that further low carbon solar energy could be boosted by an aim to retrofit roof mounted panels onto c.25% of existing domestic housing stock in the Parish, subject to the degree of financial incentives available to encourage uptake. There was also a discussion of the possibility of solar panels being sited on the roofs of agricultural buildings in the area. It was felt that a more consistent and pro-active approach would be required in policies relating to solar on buildings within the village's Conservation Area. Other public buildings such as the Village Hall and the cricket club pavilion were also identified as desirable to assess for their potential.

Noting concerns raised regarding the likely future difficulty of charging electric vehicles in Thornton, where little off-street parking exists, it was suggested that the main visitor area might be suitable for a solar charging carpark, available both to visitors during the daytime and residents overnight.

Anaerobic digestion

There is already at least one anaerobic digester (AD) unit in the locality at Wray House, just outside the parish to the south west, served in part by imports by lorry. It was felt that there was landscape capacity for at least one additional AD unit in the area, as long as it was close to the A169 (Malton Rd) to minimize the distance HGVs would need to travel on potentially unsuitable minor roads.

Ground mounted solar

Quite large areas of potentially suitable land were identified for ground mounted solar installations and a target of 35 acres was set. The main areas identified were on the former, now restored, tip on Outgang Lane (at least 5 acres – see Figure 3); poor quality land adjacent to the sewage treatment works on Thornton Lane and east towards Longlands Lane, north and south of the disused railway line (around 10-12 acres – see Figure 4); land near the substation on Westfield Lane (minimum of 6-7 acres, probably more); clearings within Dalby Forest, such as at Stonerigg Close, where a 12 acre field was identified for illustrative purposes (Figure 5).

It was suggested that further sites may be readily identified on poorer land in the Marishes although it was recognized that many farmers would not want to give over large acreages to solar given the agricultural value of the land in this area.

Figure 3

Close view of solar panels on former tip, Outgang Lane (seen from the southwest).

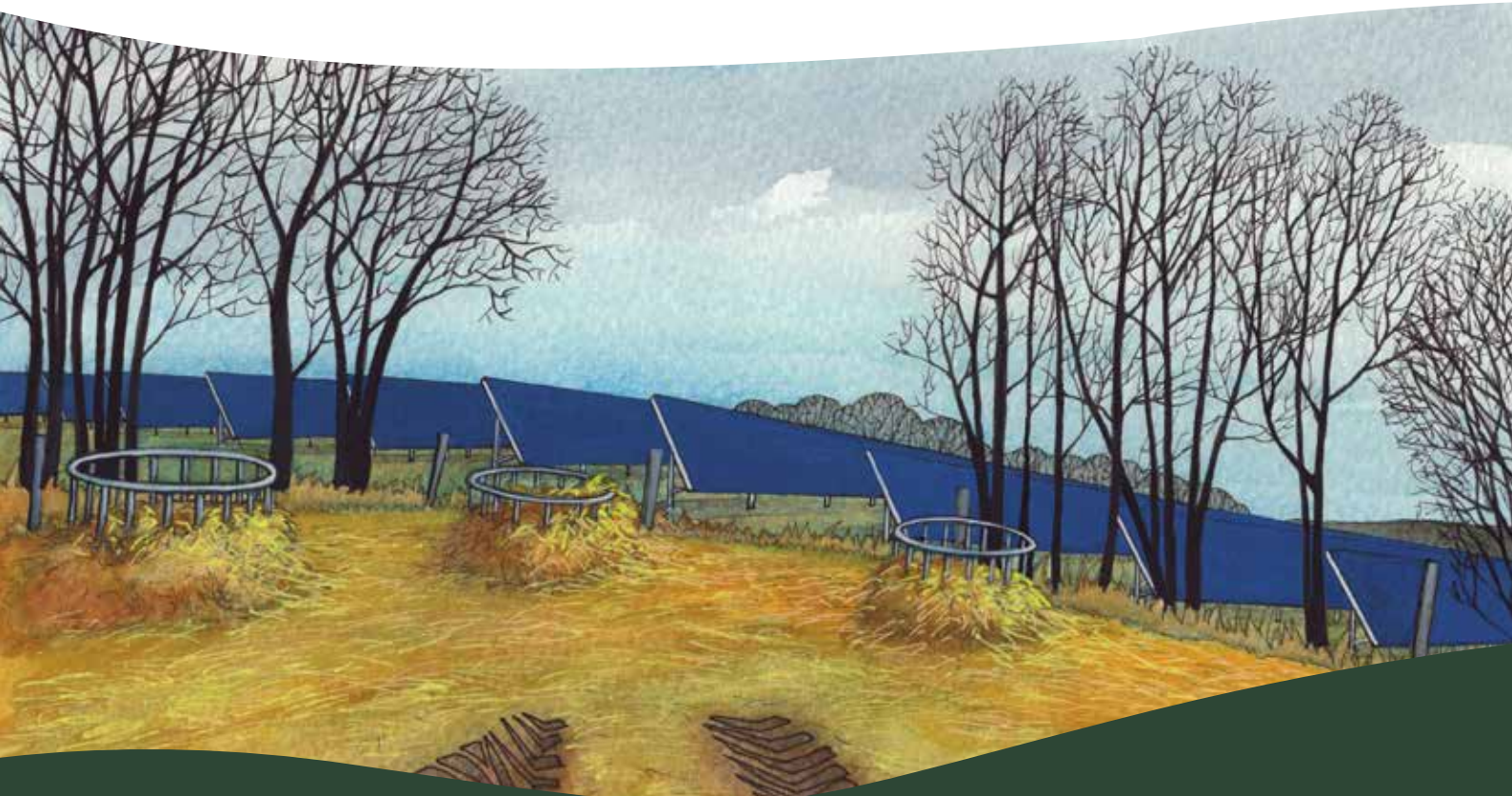




Figure 4
4a and b A solar array east of the sewage treatment works, Thornton Lane, as seen from the east adjacent to Longlands Lane. Illustrated at two different scales of deployment with the larger array using land to the north of the disused railway line.

Other options for further investigation

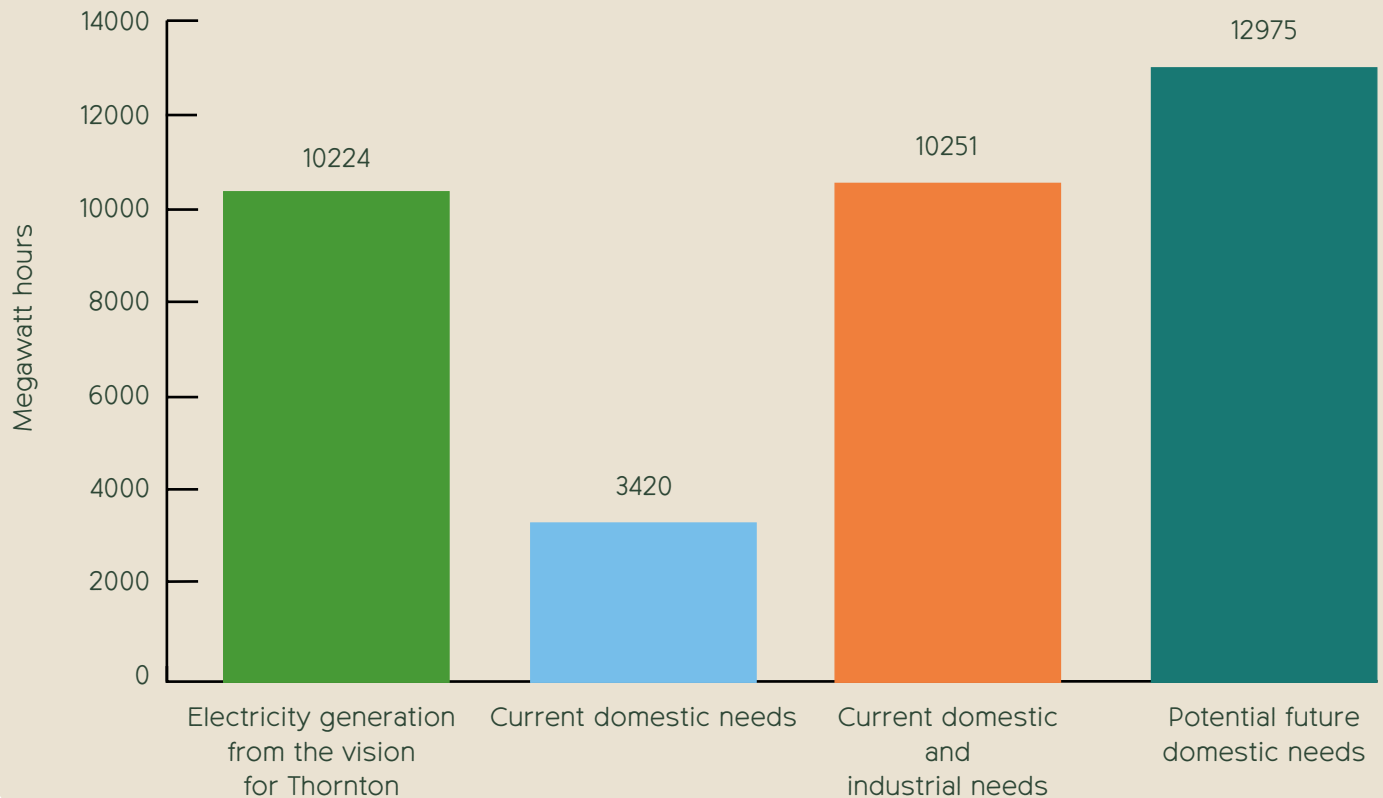
There was strong interest in a communal ground source heat pump solution that could service a large number of domestic properties in the village. Clearly this would be subject to finding an appropriate site for such an installation and also the feasibility of providing an extensive piping network to service those properties who might sign up to such a scheme.

The benefits to Thornton of a low carbon future

There was broad agreement that Thornton should seek to meet its future electricity needs, which may increase as growth was expected, but not at the expense of inappropriate renewables development. It was felt that a community focus was needed to feed future local demand.

Residents favoured a mix of appropriate renewable technologies and wanted to see community benefits delivered as a quid pro quo, whether through bespoke pricing deals or local betterment through biodiversity or other environmental or planning gain. There was a desire to move away from fossil fuels, in part because of previous pressure to develop fracking in the area. The local farmers evinced a strong desire to play their part as part of ongoing diversification. Finally it was noted that, due to a high proportion of the housing stock being historic, then domestic energy saving and retrofitting should be an important focus.

Thornton le Dale electricity demand and potential supply



In total, the new renewables that residents of Thornton proposed as suitable for the local countryside in the Parish would generate around 10224 megawatt hours per year, nearly three times the domestic needs of local residents. As the graph below shows, Thornton residents have put forward a plan that would

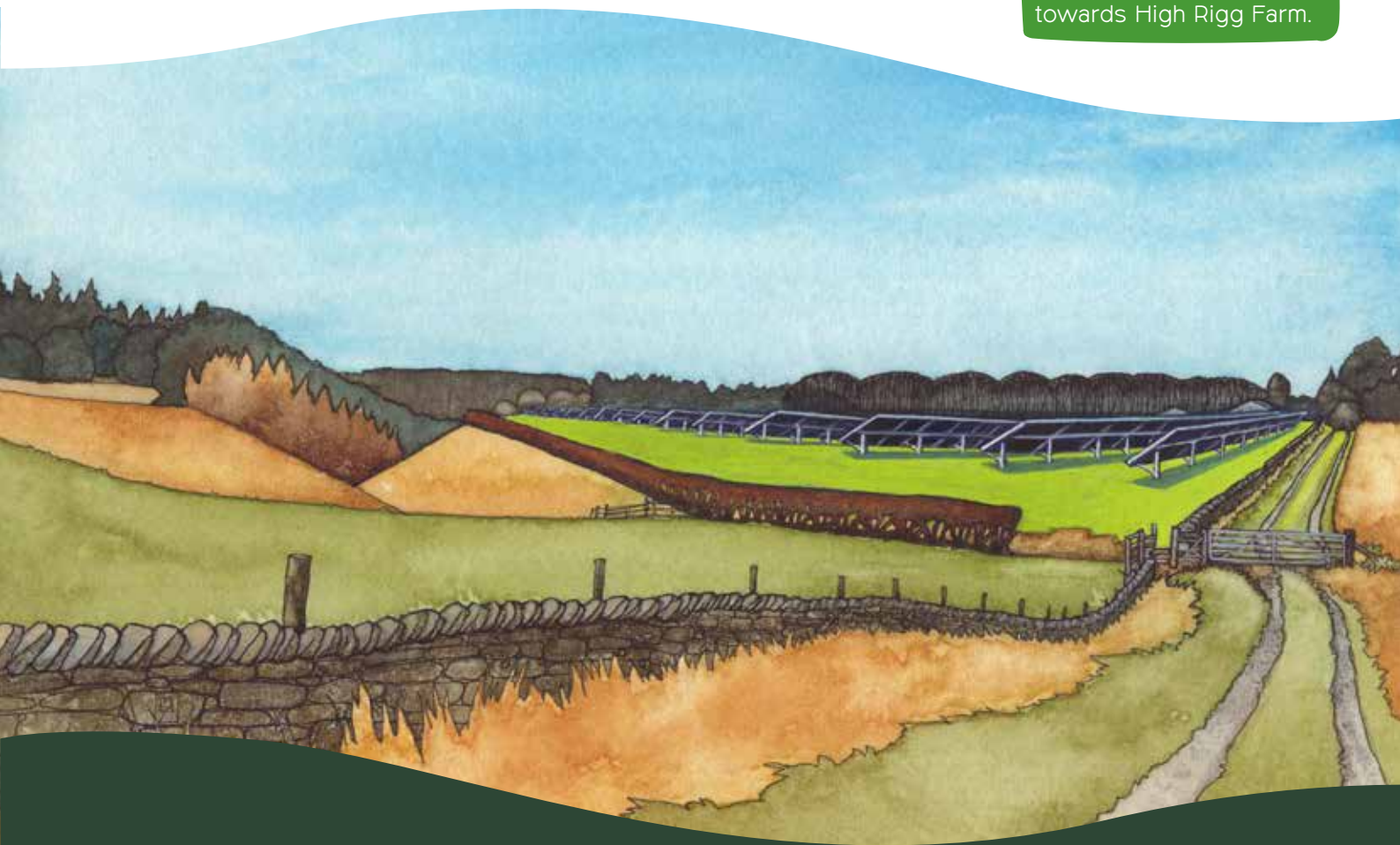
provide nearly enough electricity to meet local domestic and non-domestic needs, powering local businesses and farmers as well. The agricultural sector currently accounts for c.40% of the CO₂ footprint of the parish, with domestic and industrial/commercial use at c.16% each.

However, there would be a roughly 20% shortfall in meeting local electricity needs in a future where day to day use by Thornton residents 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.

There was a desire for solar fields to bring investment in genuine biodiversity improvements such as local hedge planting, which could assist in providing wildlife corridors, as well as helpful screening. Other betterment through planning conditions or negotiated planning gain close to installations could include landscape restoration. This might take the form of improved or reinstated dry stone walls (as illustrated in Figure 1) and the removal of intrusive infrastructure, for instance by undergrounding of electricity wires.

Figure 5

Solar array within Dalby Forest at Stonerigg Close, Sieve Dale centre left, as seen from the footpath, looking west towards High Rigg Farm.



Next steps

This document marks the beginning of a conversation. The vision for the future of renewable energy in Thornton's landscape will no doubt adapt over time 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 locally, this community vision gives the residents of Thornton 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 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 Thornton 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 vision shows that the residents of Thornton are prepared to play a significant role in the effort to avert the climate emergency. This vision would generate enough low carbon electricity to power 79% of needs of the Parish of Thornton le Dale into a future based around electric cars and electric heating in their homes. Thornton 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 countryside they and visitors value, including within the North York Moors National Park. There is a clear appetite for renewable energy schemes that contribute to the restoration and enhancement of the habitats, nature and wildlife that Thornton residents clearly value.

There are many steps the residents of Thornton le Dale can now take to make this vision a reality. There are discussions to be had with the local council and the 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 Thornton has the right infrastructure to support the renewable energy residents want to see.

This vision could be used to pro-actively seek out landowners, farmers and/or renewable energy developers who would be interested in bringing forward one or more of the schemes residents have shown support for. It was made clear in the workshops that the community and the land-based sectors like farming, forestry and local estates, should work together to maximise their impact. In addition, this document could be used as a plan for establishing a community energy scheme in Thornton, with residents coming together to design and own a renewable energy development, with the profits flowing back to the local community.

CPRE will continue to support the residents of Thornton le Dale as they take this community vision forward. For any readers outside of Thornton, 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 and East Yorkshire

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

MCS Charitable Foundation

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

Thornton le Dale Parish Council

<https://thornton-le-dale.org.uk/>

Ryedale District Council

<https://www.ryedale.gov.uk/>

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/>

References

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

ⁱⁱ <https://www.cambridgeshire.gov.uk/residents/climate-change-energy-and-environment/climate-change-action/low-carbon-energy/community-heating/swaffham-prior-heat-network>

ⁱⁱⁱ <https://www.northyorkmoors.org.uk/planning/framework/spds/renewable-spd.pdf>

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