

Central Lincolnshire Policy S14: Renewable Energy Evidence Report

Formerly Policy S13

March 2022



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1. Introduction

- 1.1. The Central Lincolnshire Local Plan is being updated since the first Local Plan for Central Lincolnshire, an area covering the districts of City of Lincoln, North Kesteven and West Lindsey, was adopted in April 2017.
- 1.2. This Evidence Report (which is one of a collection) provides background information and justification for Policy S14, which relates to generation of renewable energy.

2. Policy Context

National Policy and Guidance

- 2.1. Since the Central Lincolnshire Plan was adopted the National Planning Policy Framework (NPPF) was updated in July 2021.
- 2.2. Chapter 2 of the NPPF sets out national policy for achieving sustainable development, which separates it out into three objectives – economic, social and environmental. Within the environmental objective, “*mitigating and adapting to climate change, including moving to a low carbon economy*” forms a key part of achieving sustainable development – a key goal of the planning system.
- 2.3. At paragraph 20 of the NPPF sets out the strategic matters that should be addressed through strategic policies, including “*planning measures to address climate change mitigation and adaptation.*”
- 2.4. Chapter 14 of the NPPF provides national planning policy relating to climate change. It provides some clarity for the expectations of how Local Plans should address the challenges of climate change in paragraph 152 where it says:

“The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated.”

- 2.5. Paragraph 155 of the NPPF goes on to state that to increase the use and supply of renewable energy, plans should:

“a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);

b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and

c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.”

- 2.6. In relation to decision making, paragraph 158 of the NPPF states:

“When determining planning applications for renewable and low carbon development, local planning authorities should:

a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and

b) approve the application if its impacts are (or can be made) acceptable⁵⁴. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.”

- 2.7. Footnote 54 in bullet b) of paragraph 158 relates specifically to wind turbines where it states that “proposed wind energy development involving one or more turbines should not be considered acceptable unless it is in an area identified as suitable for wind energy development in the development plan; and, following consultation, it can be demonstrated that the planning impacts identified by the affected local community have been fully addressed and the proposal has their backing.”
- 2.8. This all makes it clear that there is a duty for Local Plans to proactively plan to deliver a renewable and low carbon energy future and that to do this, the plan must identify locations which are suitable for such renewable energy generation.
- 2.9. The Planning Practice Guidance (PPG) was first introduced in 2014 which offers ‘live’ government guidance. The PPG provides guidance to help in the implementation of policy in the NPPF.
- 2.10. The PPG includes a section of guidance titled [Renewable and low carbon energy](#). In this section it provides guidance for how Local Planning Authorities should plan for renewable and low carbon energy including setting out its importance:
- “Increasing the amount of energy from renewable and low carbon technologies will help to make sure the UK has a secure energy supply, reduce greenhouse gas emissions to slow down climate change and stimulate investment in new jobs and businesses. Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.”¹*
- 2.11. Elsewhere in this section there is guidance for how Local Planning Authorities should identify suitable areas for renewable and low carbon energy generation. The guidance in paragraph 005² specifically references a methodology produced by the Department of Energy and Climate Change for the assessment of suitable locations.
- 2.12. This section of the PPG goes onto provide detailed guidance for how to approach such policies, criteria that can be considered and other technical guidance.

¹ PPG Reference ID: 5-001-20140306

² PPG Reference ID: 5-005-20150618

Local Policy

- 2.13. The 2017 Local Plan includes Policy LP19: Renewable Energy Proposals which sets out the policy position for wind and other renewable energy generation proposals.
- 2.14. For wind energy, the policy does not identify locations that wind turbines are suitable and limits policy support to occasions where the location has been identified as being suitable for wind energy development in an adopted neighbourhood plan and where, following consultation, it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and the proposal therefore has their backing.
- 2.15. For other forms of renewable energy generation development, Policy LP19 states that proposals will be considered on their merits taking into account the benefits of the proposal and individual and cumulative impacts. Policy LP19 provides a list of criteria against which proposals will be considered including impact on landscape and townscape; residential and visual amenity; safety; and agricultural land grade stating that a balance of impacts and benefits will be considered in making decisions on such proposals.

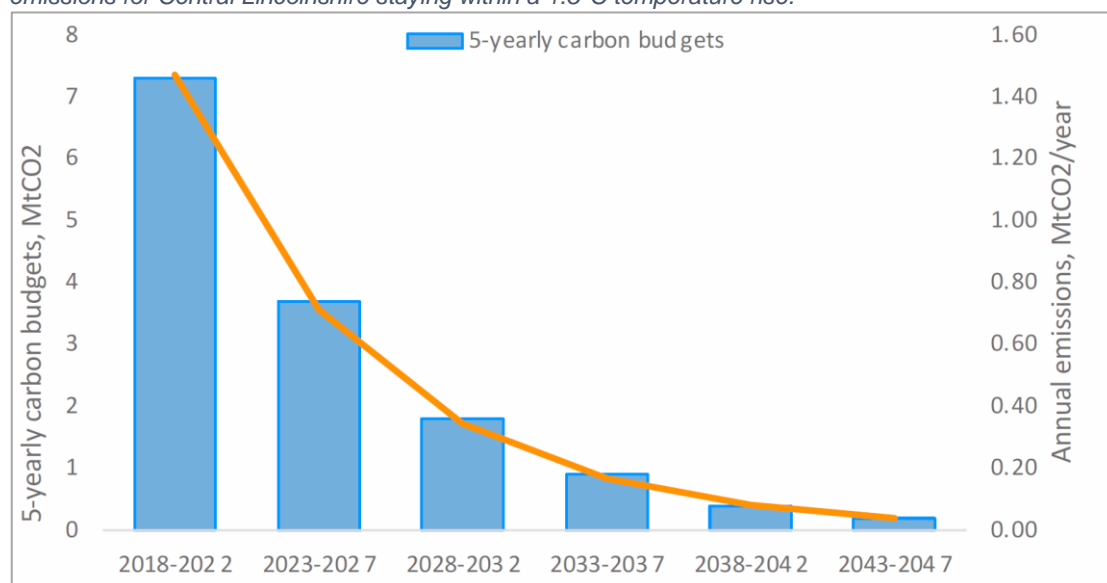
3. Context and Evidence

Climate Change Evidence 2021

- 3.1. Consultants were appointed in July 2020 to investigate the scale of Central Lincolnshire's contribution to greenhouse gas emissions and climate change, and the opportunities that exist to tackle these problems locally, including through the Local Plan.
- 3.2. This work set out the overarching context for Central Lincolnshire identifying what would need to be done in order to achieve a carbon neutral Central Lincolnshire by 2050 (and 2041 to align to the science-based approach) to accord with the Paris Agreement. This research painted a very challenging picture to achieve these goals.
- 3.3. This work was broken down into a number of distinct tasks which combine together to provide a holistic picture for the area. Of particular relevance for Policy S6 were Task C: Carbon Reduction Targets and the accompanying Policy Recommendations document.
- 3.4. Task C establishes what a carbon neutral Central Lincolnshire would look like and what has to be done to achieve this, both in terms of the Local Plan and through other means. Using the Tyndall Centre's carbon budget model, it establishes that Central Lincolnshire must emit no more than 9 MtCO₂ between 2020 and 2100. It then highlights that if emissions continue at 2017 levels, then this entire budget will be used up by 2027.³
- 3.5. The Task C Report also clarifies that in order to deliver on the Paris Agreement carbon budget, an annual reduction of 13.4% in emissions is needed. This is shown in Figure 2.4.2 of the Task C Report (replicated as figure 1 below). This is a stark reminder of the extent of the challenge that Central Lincolnshire faces if we are to do 'our bit' to address this global ticking clock.

³ Central Lincolnshire Local Plan: Climate Change Evidence Base: Task C – Carbon Reductions Targets February 2021; Bioregional, Etude and Currie & Brown – page 9, paragraph 2.4.3.

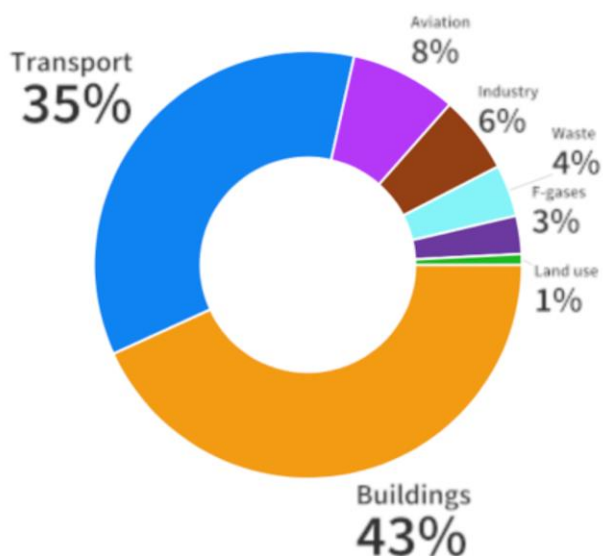
Figure 1: Replicated Figure 2.4.2 of Task C Report showing 5 yearly carbon budgets and annual CO₂ emissions for Central Lincolnshire staying within a 1.5°C temperature rise.



- 3.6. The report goes on to look at the ways in which the Central Lincolnshire Authorities might address the challenge, but it concludes that it cannot be achieved through offsetting and that a multi-faceted approach will be needed, targeting both energy being used and renewable energy being generated. These interventions include making new buildings net zero carbon as soon as possible, with a suggested target of 2022 to avoid exponentially increasing the scale of the challenge.⁴
- 3.7. Chapter 3 of the Task C report looks at the implications for the local plan of achieving the targets for staying within the carbon budget to remain within the recommended 1.5°C temperature rise, looking at what is needed to make individual sectors net zero carbon, by when and what the plan can do to enable this. The usage by each sector in 2018 is shown in Figure 3.1.1. of the Task C report, replicated as Figure 2 below, showing that buildings (43%) and transport (35%) make up the vast majority of the greenhouse gas emissions from Central Lincolnshire.



⁴ Central Lincolnshire Local Plan: Climate Change Evidence Base: Task C – Carbon Reductions Targets February 2021; Bioregional, Etude and Currie & Brown – page 11, paragraphs 2.6.3. and 2.6.5.

Figure 2: Replicated Figure 3.1.1 of the Task C report showing the greenhouse gas emissions by sector. Note: Emissions from the power sector are attributed to the sectors where the energy is consumed.



- 3.8. Section 3.3 then looks at how much renewable energy should be generated in Central Lincolnshire against national needs based on three scenarios: 1. Using the proportion of energy consumed within Central Lincolnshire; 2. Using the proportion of land area within Central Lincolnshire; and 3. Using the proportion of land area, excluding densely populated areas where generation would likely be limited. This identified that between 30% and 70% of energy demand in Central Lincolnshire in 2050 should be met by energy generated within the area. The consultants recommend the third option (70% of energy generated within Central Lincolnshire) for Central Lincolnshire as the most appropriate target to help the UK meet its targets.
- 3.9. These identified renewable energy generation targets are then converted into how much energy this would then require from the two main sources of renewables, solar and wind in Figure 3.3.2. of the report, replicated as Figure 3 below.

Figure 3: Amount of energy needed from Solar PV and Wind sources to meet the requirements under each energy scenario.

		Recommended target	
		Methodology 1:	Methodology 2:
		Methodology 3:	
	Solar PV arrays	230 MW	440 MW
	Wind turbines	150 MW	290 MW

- 3.10. The Task C report does clarify that the exact needs may vary as take up of solar in urban areas may exceed assumptions and so this should be used as a guide only.
- 3.11. Large scale wind turbines typically generate between 2MW and 3MW each. As was set out in paragraph 2.8 of the report put before members at the Committee meeting on 15 March 2021, taking the lower of the three options as an example:

- **Wind:** 150MW capacity (compared with 0 MW currently installed), which equates to 75 x 2MW turbines, which would itself require something like 200- 300 acres of land (that's approximately 150 football pitches). Of course, much of that 200-300 acres can still be used for other farming uses – the physical land take of the turbines would be very small indeed. In terms of height, a typical 2MW turbine is perhaps 90-100m tall to the hub, whereas the tip of the blade to the ground is perhaps 125-150m in height.

If larger turbines are used (say 3MW capacity, which realistically is the largest commercially available) the number of turbines drops to 50, and the land take maybe slightly less.

(Smaller turbines would have the opposite effect in terms of land take (i.e. more turbines, on more land), but more importantly they become increasingly less financially viable, on a commercial basis, the smaller they become).

- **Solar PV:** 230MW capacity (compared with 149MW currently installed), which equates to approximately 1,000 acres of land requirement. That's approximately 650 football pitches. This land take might be less (but not eliminated), if large scale roof deployment was achieved to help deliver this capacity target.

For context, Central Lincolnshire occupies 525,000 acres of land, so the above combined land take (1,300 acres) equates to around 1/400th (0.25%) of the Central Lincolnshire area.⁵

- 3.12. This provides some context for what it would take to achieve the levels of renewable energy required under methodology 1 (delivering enough renewable energy to cover the proportion of energy used in Central Lincolnshire as a proportion of the UK).
- 3.13. The climate change consultants recommend in sections 3.10-3.11 of the Recommended Policies document that sites are specifically allocated for renewable energy generation, including specifically for solar PV and wind turbines.

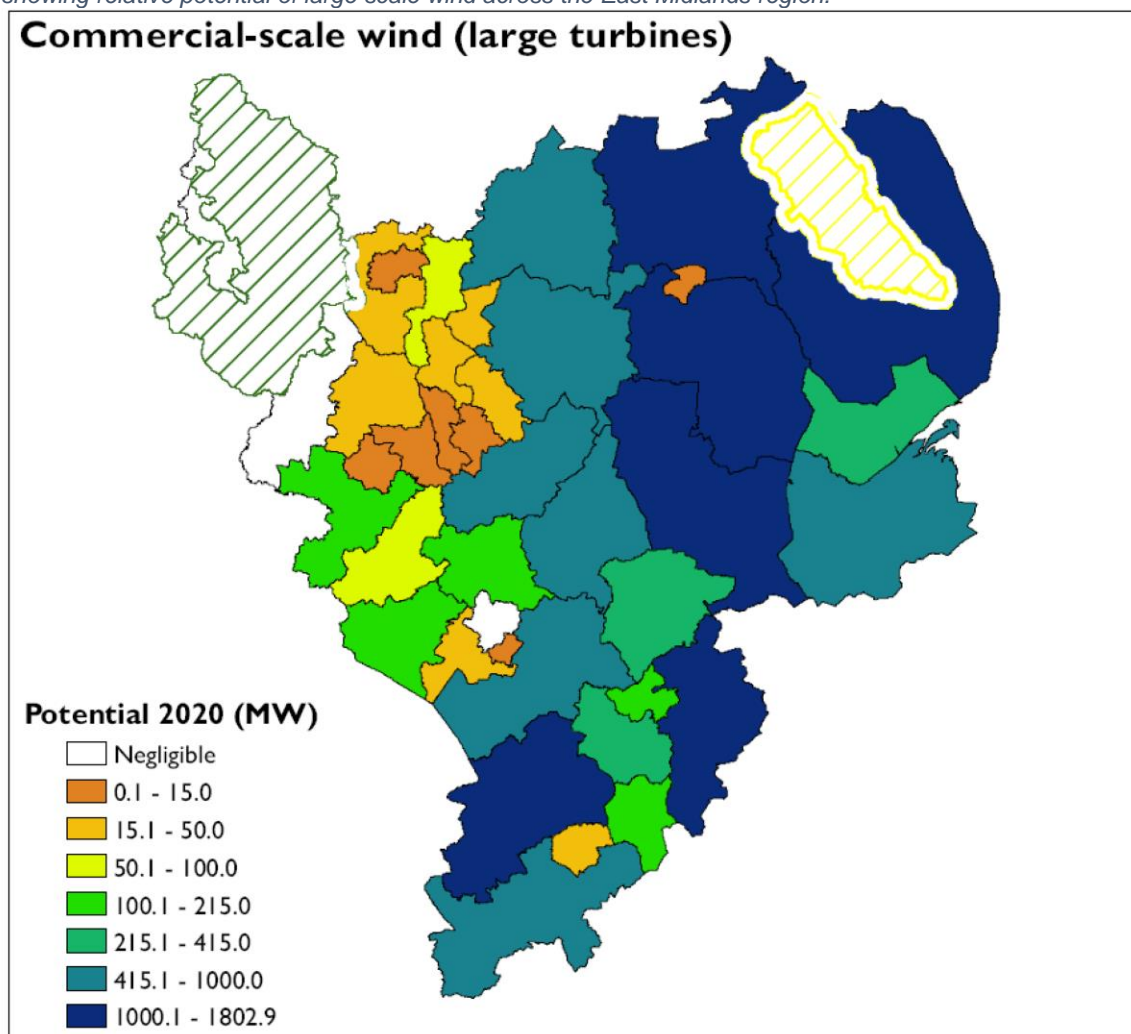
Central Lincolnshire Energy Study 2011

- 3.14. In 2011 the Central Lincolnshire Joint Strategic Planning Committee appointed consultants to produce a renewable and low carbon energy study. This study looked at understanding what the energy profile of Central Lincolnshire was and then where and what forms of renewable energy could be generated.
- 3.15. This study utilised the methodology of the Renewable and Low Carbon Energy Capacity Methodology for the English Regions (2010) (referenced in the PPG) and considered the findings of the *Reviewing Renewable Energy and Energy Efficiency Targets for the East Midlands* (2009).
- 3.16. Chapter 5 of this study looks at the potential for various forms of renewable energy generation. It identifies that the assessment in the 2009 East Midlands study highlights that wind speed in Central Lincolnshire are generally feasible for large-scale wind turbines. A map showing the potential capacity for new wind generation from the 2009

⁵ Report available on the CLJSPC agenda page - <https://democracy.n-kesteven.gov.uk/ieListDocuments.aspx?CId=729&MId=8310&Ver=4>

East Midlands study is replicated at Figure 31 on page 80 of the study, replicated below for ease of reference as Map 1:

Map 1: Reviewing Renewable Energy and Energy Efficiency Targets for the East Midlands (2009) - Figure 31 showing relative potential of large scale wind across the East Midlands region.



- 3.17. This shows that West Lindsey and North Kesteven are amongst the districts with the highest potential for delivering energy from large scale wind turbines. Conversely Lincoln is amongst the districts with the lowest potential, and this is confirmed to be due to negligible land availability. The 2009 East Midlands study is also referenced as identifying the challenges locally in Central Lincolnshire faced from airfields and radar interference. Wind speed does not typically change and lack of land available in Lincoln also remains to be the case now and so these conclusions still hold true. The challenges with airfields and radar interference are dealt with in section 5 of this report.
- 3.18. The Central Lincolnshire Energy Study then goes onto assess the presence of constraints in Central Lincolnshire, using the Department of Energy and Climate Change methodology. These constraints are listed on page 81 of the study and include:
- Non-accessible areas (including roads, railways, water bodies, built up areas and airports;
 - Exclusion areas (including ancient woodland, key elements of the historic environment, buffers around roads and railway lines of turbine tip height +10%,

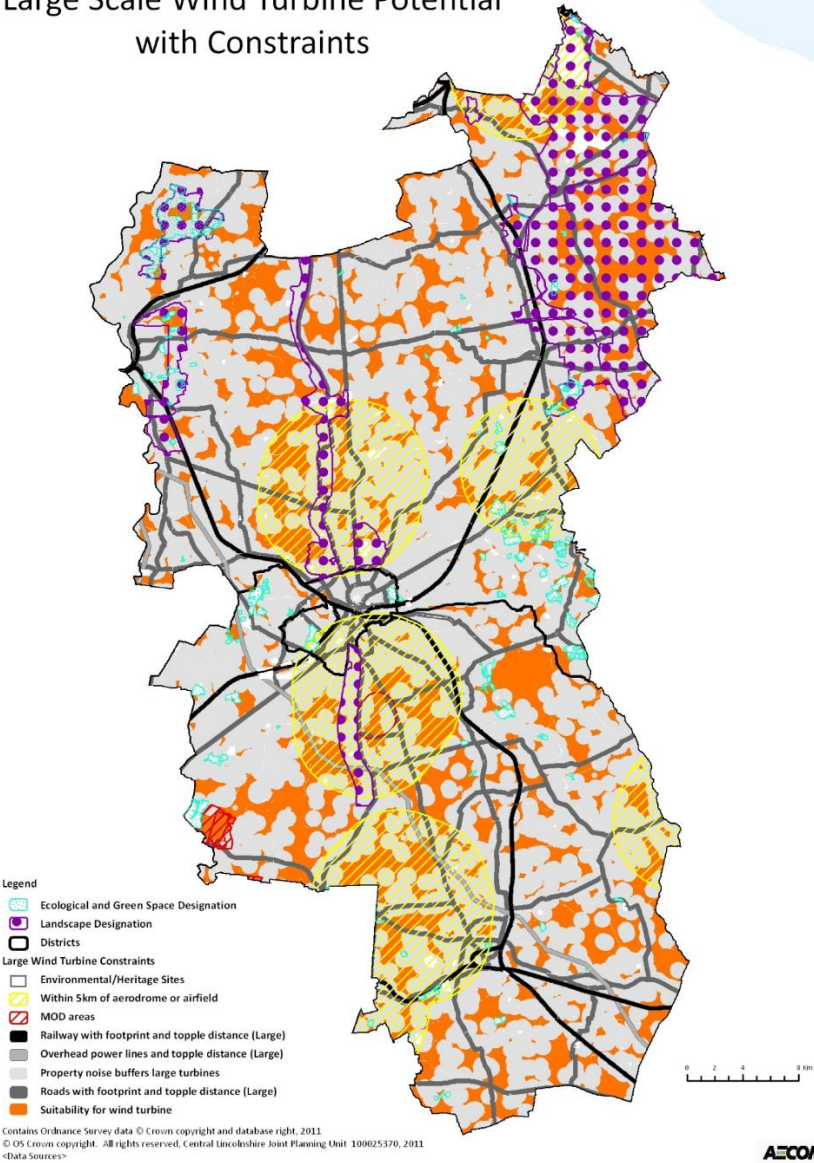
600m buffers around built up areas, and a 5km buffer around airports and airfields); and

- Designated landscape and nature conservation areas (including AONB, national and international wildlife designations).

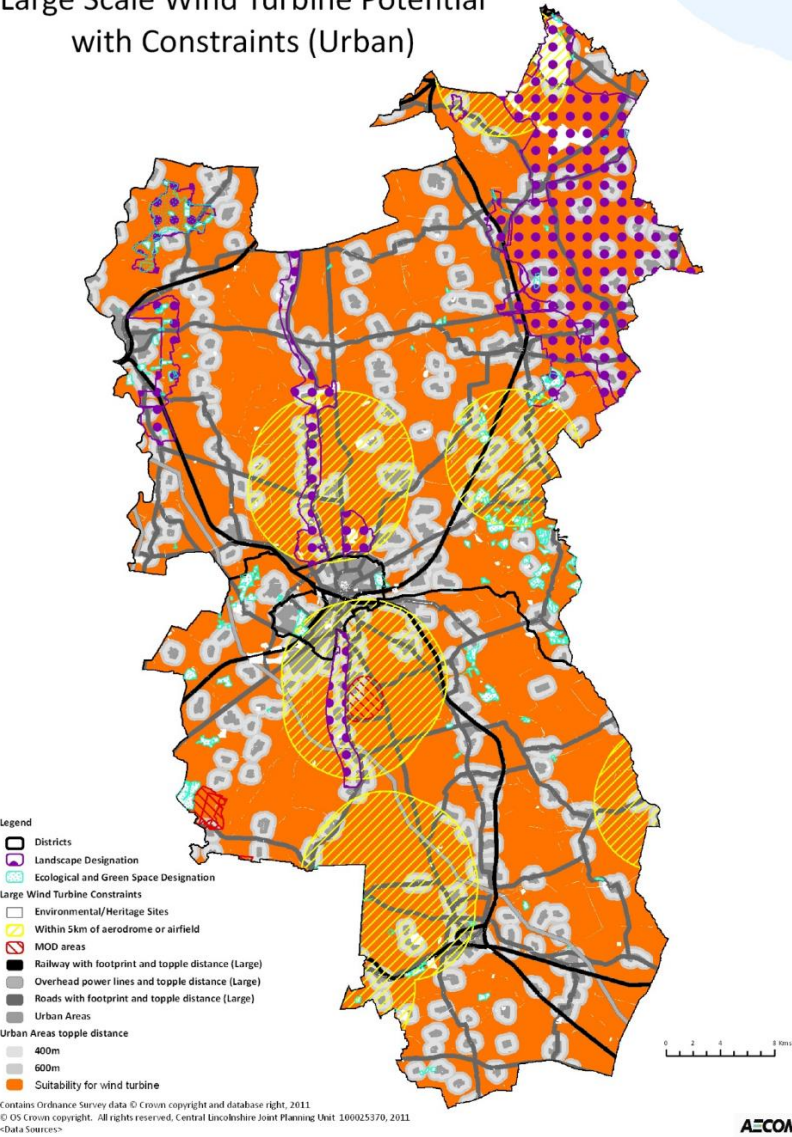
3.19. These criteria are then all combined to produce two maps on Figures 32 and 33 of the study. On these maps the orange areas are those considered “suitable” for wind turbines taking into account the listed constraints. The key difference between the two maps is that Figure 32 applies a 600m around all residences in Central Lincolnshire whereas Figure 33 only applies a 600m buffer around villages and hamlets. The report clarifies that this 600m buffer is to allow for impacts such as noise and shadow flicker, but that this is a conservative buffer and that it may be possible to avoid such impacts within these buffers. These are replicated below in Map 2:

Map 2: Central Lincolnshire Energy Study (2011) - Figure 32: Large scale wind turbine opportunity with 600m buffer around all residences, and Figure 33: Large scale wind turbine opportunities with 600m buffer around all villages and hamlets.

Large Scale Wind Turbine Potential with Constraints

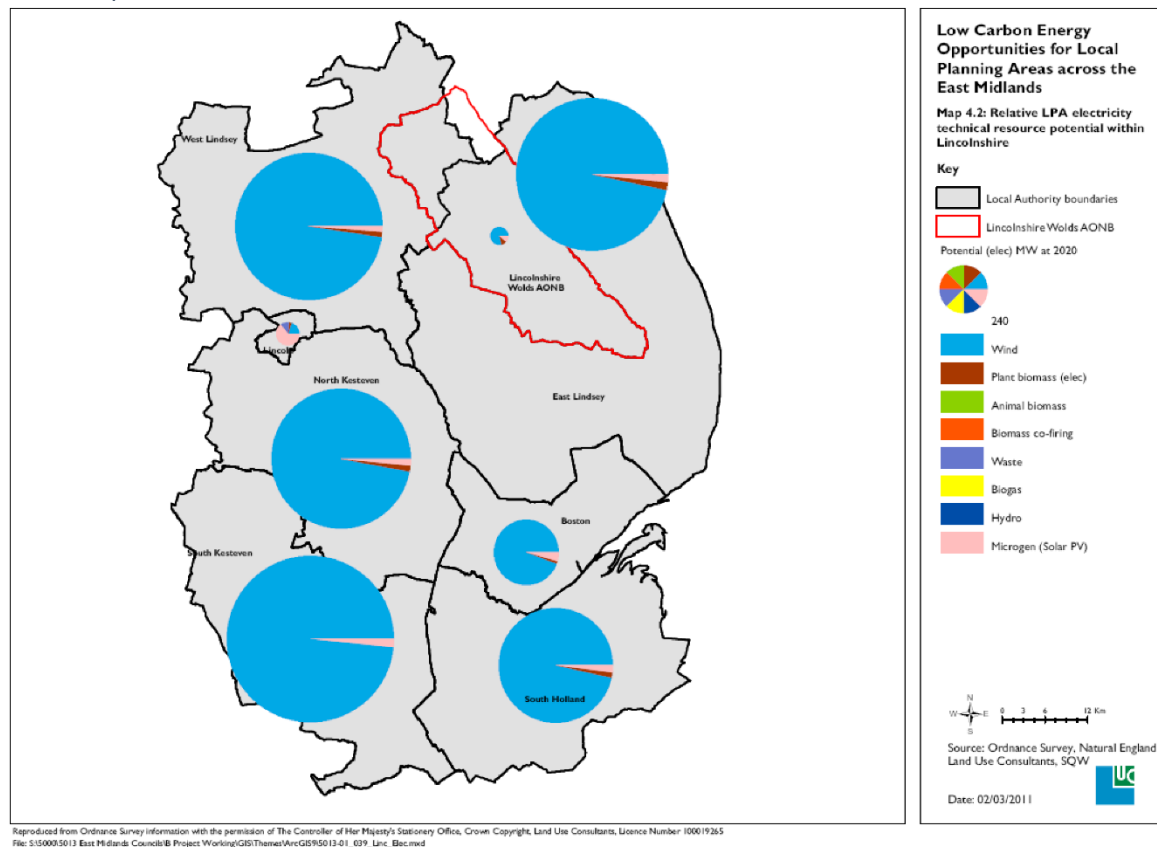


Large Scale Wind Turbine Potential with Constraints (Urban)



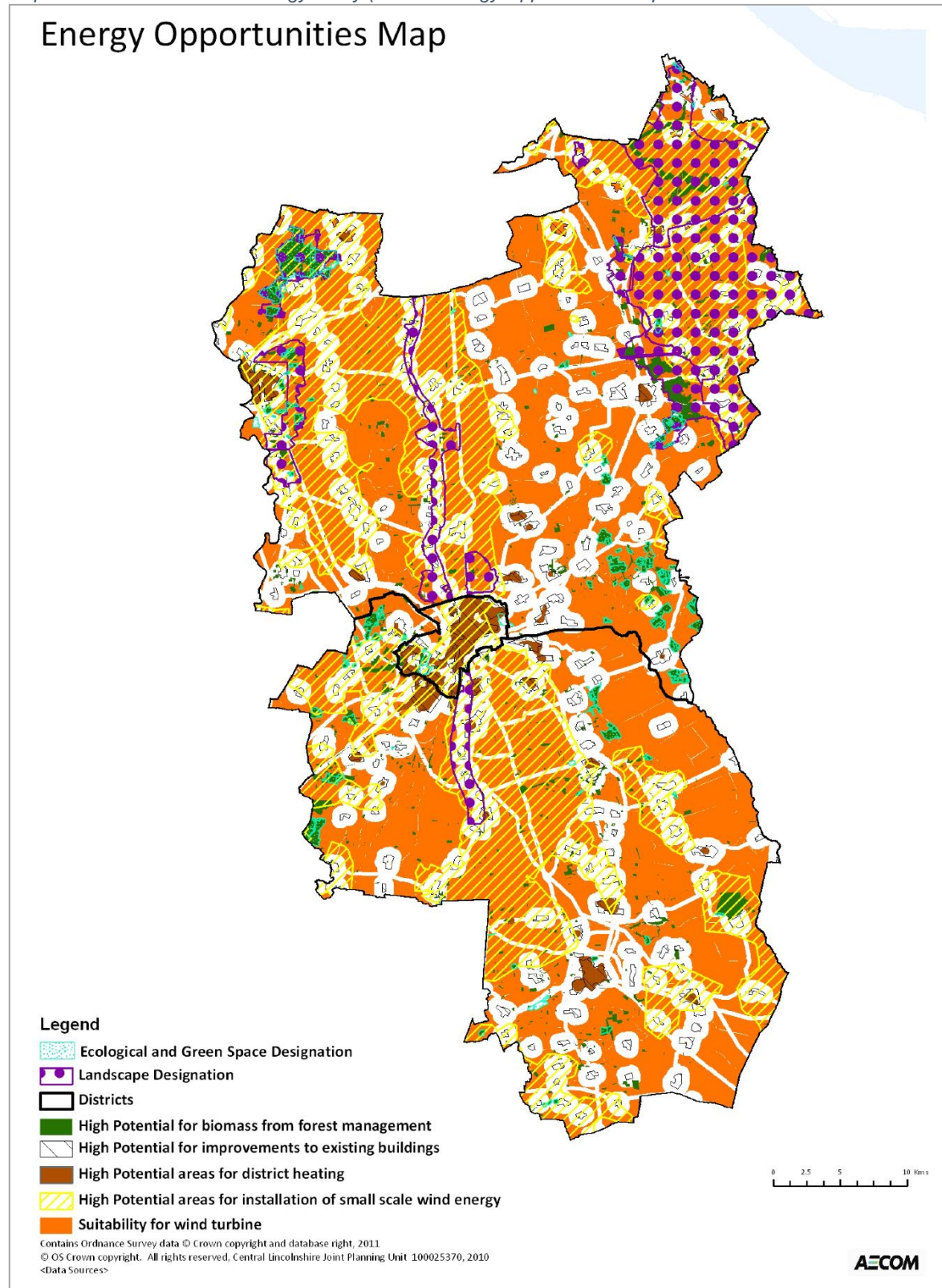
- 3.20. Whilst renewable energy technology has progressed substantially since this Energy Study was produced in 2011 many of the fundamentals of the methodology and the overall approach remain largely robust. One key element that can be taken from this study is that there are adequate levels of wind available, and that this is the principal opportunity to delivery substantial amounts of renewable energy within Central Lincolnshire. This is clearly demonstrated in Figure A1 of the study on page 224, replicated below as Map 3:

Map 3: Reviewing Renewable Energy and Energy Efficiency Targets for the East Midlands (2009) - Figure A1: Resource potential from across Lincolnshire



- 3.21. The study concludes with an Energy Opportunities Map (Map 4 below) highlighting all opportunities that exist geographically. However, it should be noted that this map does not show all opportunities that exist – for example solar farms are not included as considerations are more on a site basis with most areas having similar levels of sunlight in Central Lincolnshire.

Map 4: Central Lincolnshire Energy Study (2011 – Energy Opportunities Map



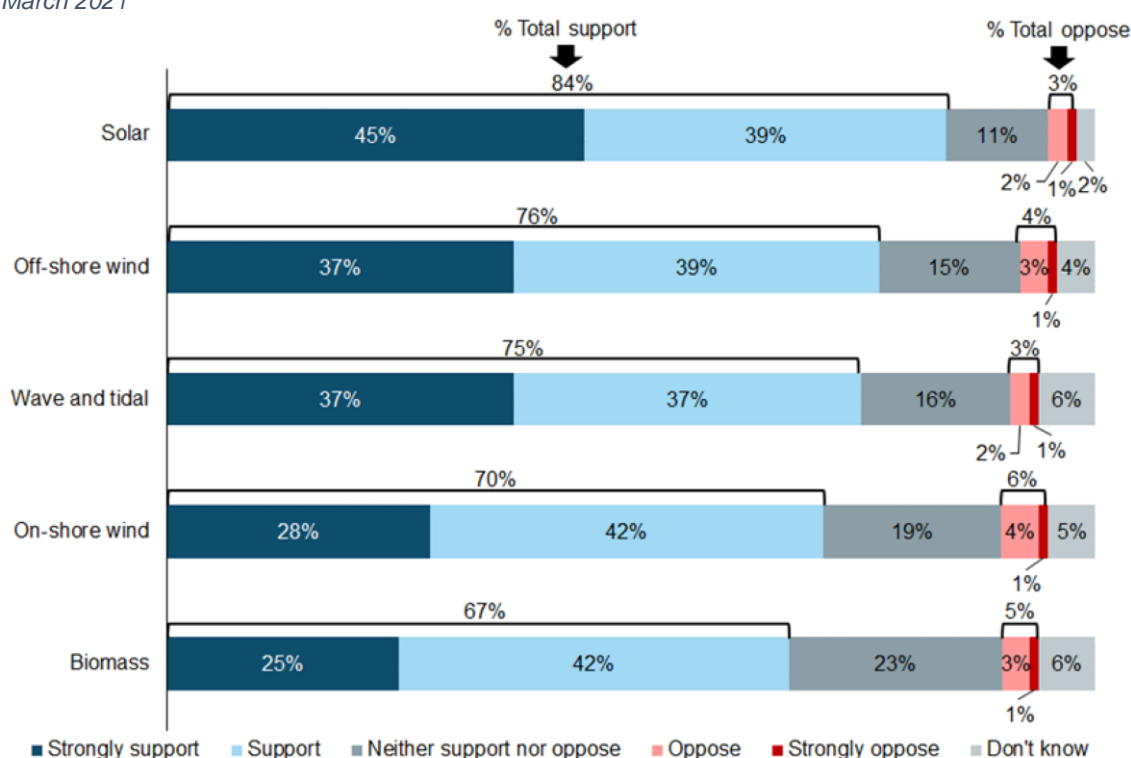
Department for Business, Energy and Industrial Strategy (BEIS)

- 3.22. The Department for Business, Energy and Industrial Strategy (BEIS) tracks public opinion quarterly on a number of energy-related topics amongst other business-related topics.

The most recent release was published in May 2021⁶ with more than 4,000 respondents answering the questionnaire in March 2021.

- 3.23. Whilst not specifically targeted at the population of Central Lincolnshire, this tracker does provide some interesting insight to popularity or opposition to a number of topics.
- 3.24. Question 21 of the questionnaire related to the level of concern about climate change. In March 2021 33% of respondents were very concerned and 47% were concerned, leaving only 18% stating that they were not concerned about climate change.⁷
- 3.25. Moving specifically to renewable energy generation the participants were asked whether they support or oppose the use of renewable energy for electricity, fuel and heat. 41% of respondents identified that they strongly supported it and 38% supported it – giving a majority of overall support with 79%. Of the remaining 21%, the vast majority neither supported nor opposed the use of renewable energy – 16% of the total. Only 3% of respondents objected to the use of renewable energy.
- 3.26. The questionnaire then went on an additional step to look to understand what forms of renewable energy developments people support or objected to. Figure 17 from the publication of results is replicated below as Figure 4:

Figure 4: Level of support for types of renewable energy from the BEIS Public Attitudes Tracker release, March 2021



This shows majority support for each type of renewable energy generation development. Of particular relevance are solar, which received 84% support, and on-shore wind, which received 70% support. Both forms have very low levels of opposition from the respondents to this questionnaire.

⁶ <https://www.gov.uk/government/statistics/beis-public-attitudes-tracker-wave-37>

⁷ Figure 4 of the BEIS Public Attitudes Tracker Wave 35

4. Issues and Options Consultation

- 4.1. The Issues and Options Consultation in 2019 did not include any specific question around generation of renewable energy but adopted *Policy LP19: Renewable Energy Proposals* of the 2017 Local Plan was not proposed to be changed.
- 4.2. Despite this some comments were received relating to wind turbines and other renewable sources of energy, summarised as:
- If attracting Innovative industry is to remain an aim of the vision, then becoming a leading area in the research, development & use clean energy (such as wind turbines) is an area in keeping with international & national policy changes, which central Lincolnshire could target to help deliver on various other parts of the vision; and
 - Renewables should always be encouraged, and this policy needs to be amended to encourage developers to provide solar panels on all new developments where feasible.
- 4.3. Beyond these specific references there was good support from many respondents towards the need to address the challenge of climate change and indeed to make it a central goal of the plan.

5. Regulation 18 Consultation

- 5.1. A Consultation Draft of the Local Plan was published for consultation between 30 June and 24 August 2021. During this eight week consultation comments were received on the plan, the policies within the plan, and supporting information and evidence.
- 5.2. During this consultation there was a fairly mixed response to the proposed policy. There was both support for and objection to both the principle of including a policy to enable renewable energy generation within Central Lincolnshire.
- 5.3. Comments supporting the policy included:
- The requirements of the policy are appropriate and proportionate;
 - Support for criteria-based policies over allocating sites;
 - Support for the policy for single small to medium wind turbines that serve a specific isolated business or dwelling with renewable energy;
 - Some expressed support for policy, except the policy requirements in relation to wind turbines;
 - Support for greater emphasis on solar development;
 - Consider opportunities around smaller, localised schemes that benefit community/local business as these as far more appropriate for Central Lincolnshire than large scale schemes; and
 - The mitigation and reversal of climate related harm and the establishment of long-term sustainability is imperative and a priority for everyone – it is a shared duty not a choice.
- 5.4. Comments objecting to the proposed policy included:

- Support for policy overall, but concern that there is too much scope to reject proposals;
- Concern that 1 small- medium turbine permitted under 'Additional matters for wind-based energy proposals' is restrictive;
- Suggestion that 2km buffer should apply to all dwellings and places of work;
- Concern that buffers have not been applied to settlements outside the Plan area;
- Deliverability and output of turbines questioned;
- Concern for impact on birds and impact on landscape;
- Suggestion that the exclusion zone around MOD/RAF sites was insufficient;
- Deliverability of policy questioned- national policy renders applications for onshore wind too risky and costly to developers;
- Concern about the amount of fossil fuels used in construction of wind turbines; and
- Support for policy, but map 2 considered too restrictive: smaller buffers suggested

6. Proposed Approach in Local Plan

- 6.1. It is clear that National Policy, including but not limited to the NPPF, requires the Central Lincolnshire Local Plan to address the challenges of climate change positively. The declarations of a climate emergency and similar commitments to addressing climate change at the Central Lincolnshire Districts and Lincolnshire County Council also reinforce this.
- 6.2. Through the development of the climate change evidence base a clear picture of how Central Lincolnshire can be 'net zero carbon' is presented, but this requires difficult choices to be made.
- 6.3. Through this proposed policy and other policies in the climate change section of the Local Plan it is hoped that the ambition of achieving a net zero carbon Central Lincolnshire can be achieved. But it is important to note that:
- The Local Plan is not the only route to achieving net zero carbon and is perhaps not the best means of reducing carbon in many areas;
 - There are limitations placed on the development of Local Plan by Government policy which make it challenging to achieve the full potential of a Local Plan in delivering carbon neutral development; and
 - There is no single solution that can be implemented by the plan to ensure that Central Lincolnshire is net zero carbon. To achieve this a number of the recommendations made by the consultants will need to be delivered.
- 6.4. At its meeting on 15 March 2021, the Committee agreed to the principle of facilitating delivery of renewable energy from wind turbines and solar PV farms. The report before Committee set out the broad approach to achieve this which followed a two-stage approach:
1. Identify broad areas where turbines and/or solar PV farms may be suitable in principle. For wind turbines it is essential that these suitable areas are shown on the policies map.
 2. The creation of a criteria-based policy against which proposals for renewable energy development will be considered.

Development proposals would have to satisfy each of these stages in order to be supported in an application.

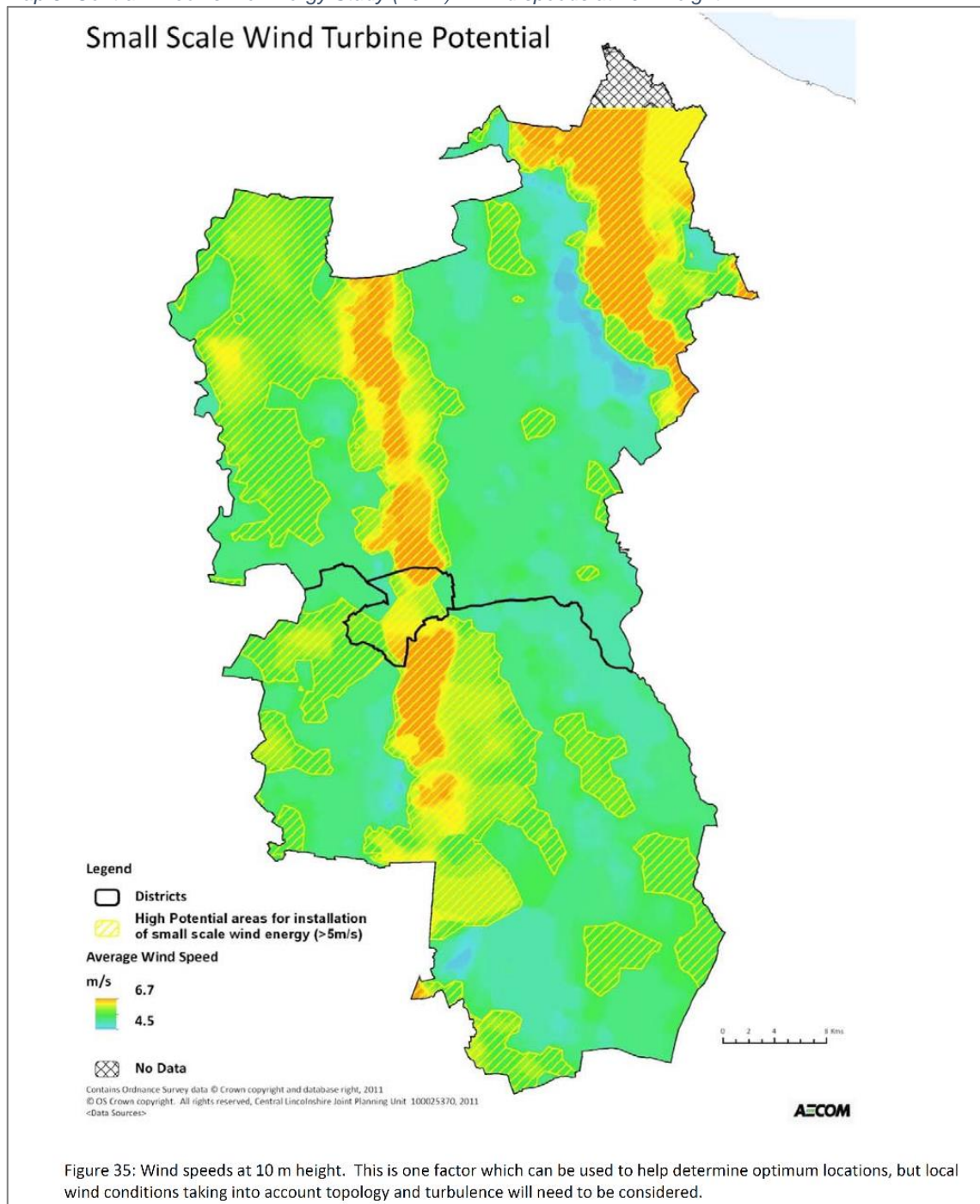
- 6.5. For solar PV farms, the recommendation made to the Committee in the report provided in March was that they be dealt with on a site-by-site basis using a criteria-based policy, effectively identifying all of Central Lincolnshire as a broad area of suitability for such infrastructure (subject to site –specific considerations).
- 6.6. For wind turbines, given that the NPPF requires broad areas of suitability to be demonstrated, the report also set out some of the proposals for how to undertake the identification of these broad areas. This forms the basis of the proposed approach for large scale wind turbines in the policy. The report did also separate out smaller scale wind turbines, of a scale suitable to support an individual homeowner, business or community, of up to 40m in height for which wider in-principle support would be offered, subject to satisfying requirements of the criteria-based policy.

Wind Turbines – identifying the opportunities

- 6.7. The 2011 Central Lincolnshire Energy Study highlighted in section 5.2.1 that for turbines with a hub height of 100m+:

The study [East Midlands Low Carbon Energy Study, March 2011] highlights that wind speeds in Central Lincolnshire are generally feasible for large-scale wind development, with the highest wind speeds present along the central spine in the Lincoln Cliffs area. However, as wind speeds across Central Lincolnshire are consistently above 5.5m/s (the general threshold for economic viability), other constraints are the key consideration in determining technical viability.

- 6.8. It is not considered that any material changes will have occurred that would impact this position since its publication.
- 6.9. The Central Lincolnshire Energy Study went onto identify areas where there is potential for small scale wind turbines in Central Lincolnshire identified on a map which is replicated below for ease of reference with the yellow hatched areas being identified as being “High potential areas of small scale wind energy”.



- 6.10. This demonstrates that there are large areas with adequate wind speeds to utilise small scale wind turbines to generate electricity, in addition to the whole of Central Lincolnshire having potential for large scale turbines as referenced in paragraph 3.16 of this report.

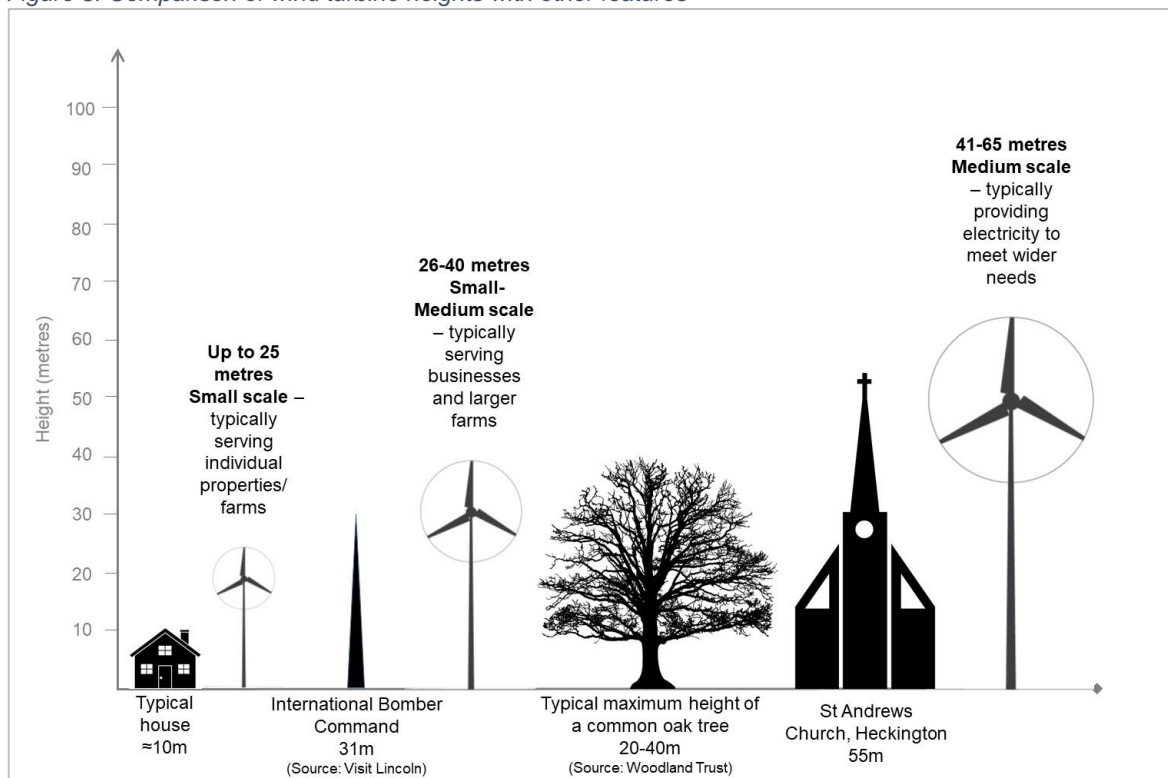
Wind Turbines – defining the scales

- 6.11. Wind turbines can vary in scale with heights varying from 10m up to 150m to blade tip. Clearly the impact of these different scales will be very different, as will the amount of electricity that will be generated. This is demonstrated in the Table below:

Category	Height of turbine (to blade tip)	Typical characteristics
Small	Up to 25 metres	<ul style="list-style-type: none"> • Single turbines • Typically serving individual properties and farms
Small-Medium	26 to 40 metres	<ul style="list-style-type: none"> • Single turbines • Typically serving businesses and larger farms
Medium	41 to 65 metres	<ul style="list-style-type: none"> • Single turbines • Typically providing electricity to meet wider needs
Medium-Large	66 to 100 metres	<ul style="list-style-type: none"> • Single turbines or groupings of turbines • Typically generating electricity on a commercial basis
Large	101 to 135 metres	<ul style="list-style-type: none"> • Single turbines or groupings of turbines • Typically generating electricity on a commercial basis

- 6.12. This demonstrates the broad categories within which different scales of turbines fit within and the general purpose of electricity being generated. To offer some form of comparison against other familiar features of the landscape Figure 5 below shows how these heights compare to a typical house, a tree and a local church and the International Bomber Command Memorial at Bracebridge Heath.

Figure 5: Comparison of wind turbine heights with other features



- 6.13. The proposed approach in policy for proposals for domestic scale and other small scale turbines is that they are suitable in principle across Central Lincolnshire subject to the criteria-based policy requirements being satisfied to demonstrate their suitability. For all larger scale turbines, the broad areas of suitability will be identified through a mapping exercise.

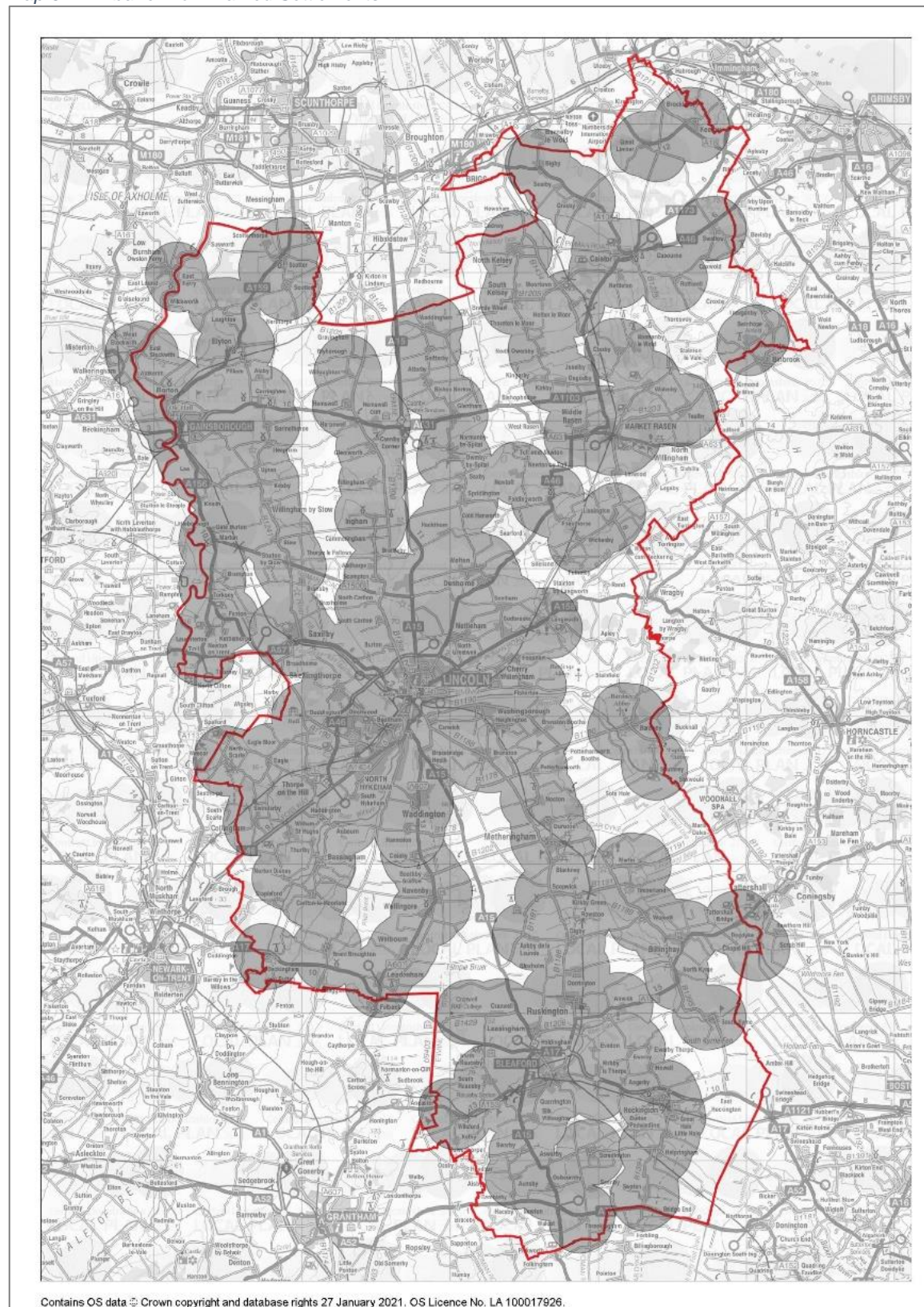
Large Scale Wind Turbines – Identifying Broad Areas of Suitability

- 6.14. There are many constraints that need to be considered and may limit the ability to deliver wind turbines. However, many of these constraints have the potential to be mitigated on a specific site or may be better considered on a site-by-site basis. Whereas other principal constraints can be identified at a strategic level to rule out areas as being fundamentally unsuitable for large scale wind turbines through a sieving process.
- 6.15. This section deals with these principal constraints, based on the methodology published by the Department of Energy and Climate Change and utilising some of the criteria in the Lincolnshire County Council Policy Wind Energy Position Statement.

Proximity to settlements

- 6.16. It would be challenging to deliver large scale wind turbines in built up areas as avoiding and managing impacts on residential dwellings are also one of the main challenges. As a result, it is proposed that all settlements identified in the settlement hierarchy (i.e. from Small Villages up) should be included as a constraint to delivery of large scale wind turbines, as it is these settlements which will be the focus of other development in Central Lincolnshire.
- 6.17. Furthermore, arguably the impacts would be similarly significant if large scale wind turbines were delivered adjacent to many settlements. The Lincolnshire County Council Policy Wind Energy Position Statement identified a 2km buffer from settlements as being needed to ensure wind farms would not be too prominent. It is therefore proposed that a 2km buffer be applied to the settlements named in the settlement hierarchy. This constraint is shown on Map 6 below:

Map 6: 2km buffer from Named Settlements



- 6.18. During the Regulation 18 Consultation in 2021 the suggestion was made that this 2km buffer should also be applied to settlements outside of Central Lincolnshire. This suggestion was considered to be appropriate to be applied and as such an exercise was undertaken to identify which settlements would require such a buffer to be consistent with the settlements to which buffers were applied within Central Lincolnshire.

6.19. This exercise identified a further 38 settlements for a 2km buffer to be applied as follows:

Within Bassetlaw:

- Misterton;
- Rampton; and
- Walkeringham.

Within East Lindsey:

- Binbrook;
- Conningsby/ Tattershall;
- East Barkwith;
- Ludford;
- Woodhall Spa;
- West Ferry; and
- Wragby.

Within Newark and Sherwood:

- Collingham.

Within North Lincolnshire:

- Barnetby le Wold;
- Brigg;
- Cadney;
- Gunthorpe;
- Hibbaldstow;
- Howsham;
- Kirmington
- Kirton in Lindsey;
- Messingham;
- Owston Ferry;
- Redbourne;
- Scawby;
- Ulceby; and
- Wrawby.

Within North East Lincolnshire:

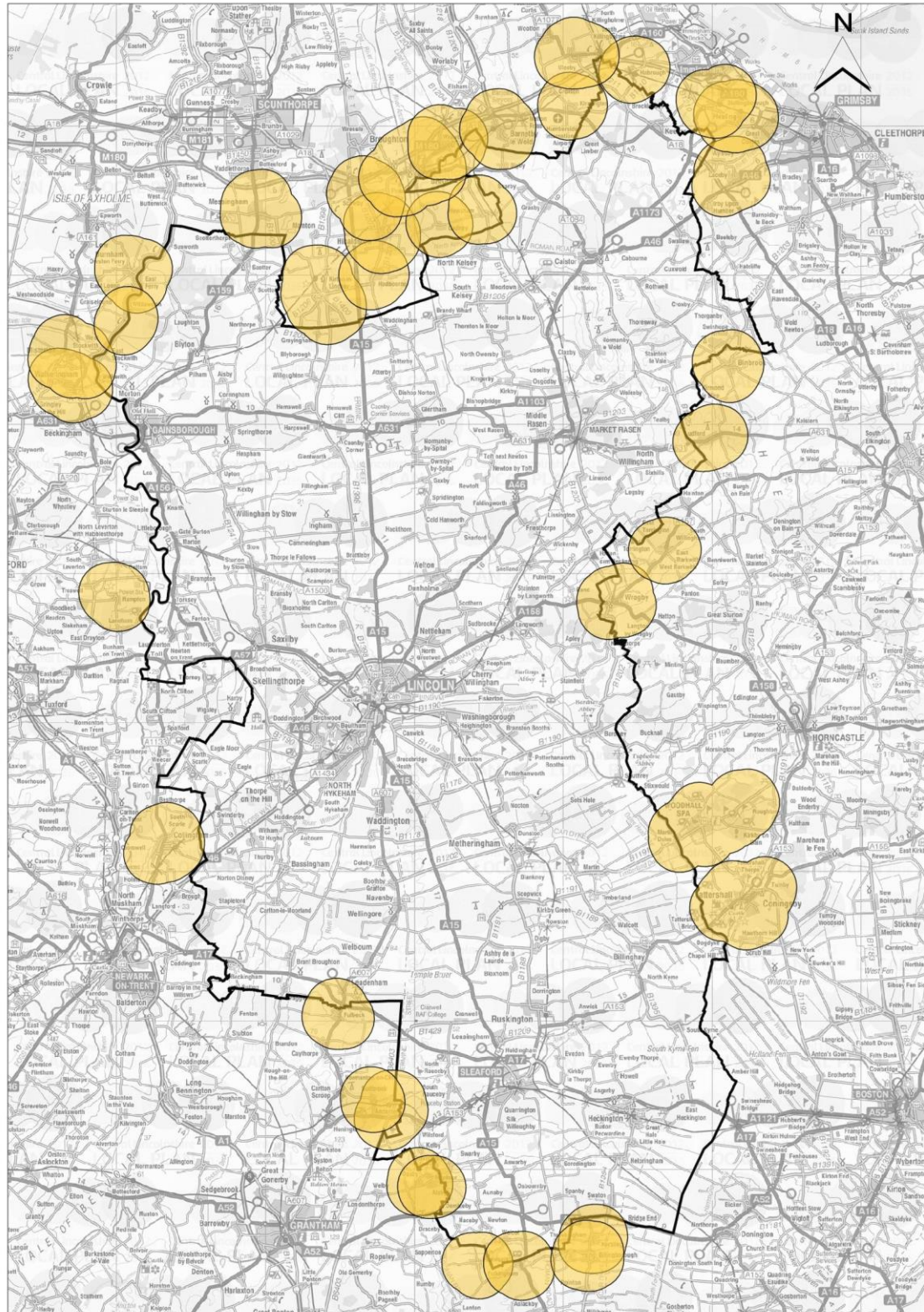
- Harbrough;
- Healing;
- Laceby; and
- Stallingborough.

Within South Kesteven:

- Aisby;
- Ancaster;
- Billinghamborough;
- Folkingham;
- Fulbeck;
- Horbling;
- Oasby;
- Pickworth; and
- Sudbrook.

6.20. The 2km buffers applied to these nearby settlements are shown on Map 7.

Map 7: 2km buffer from settlements of 50 or more dwellings within 2km of the Central Lincolnshire boundary



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Landscape

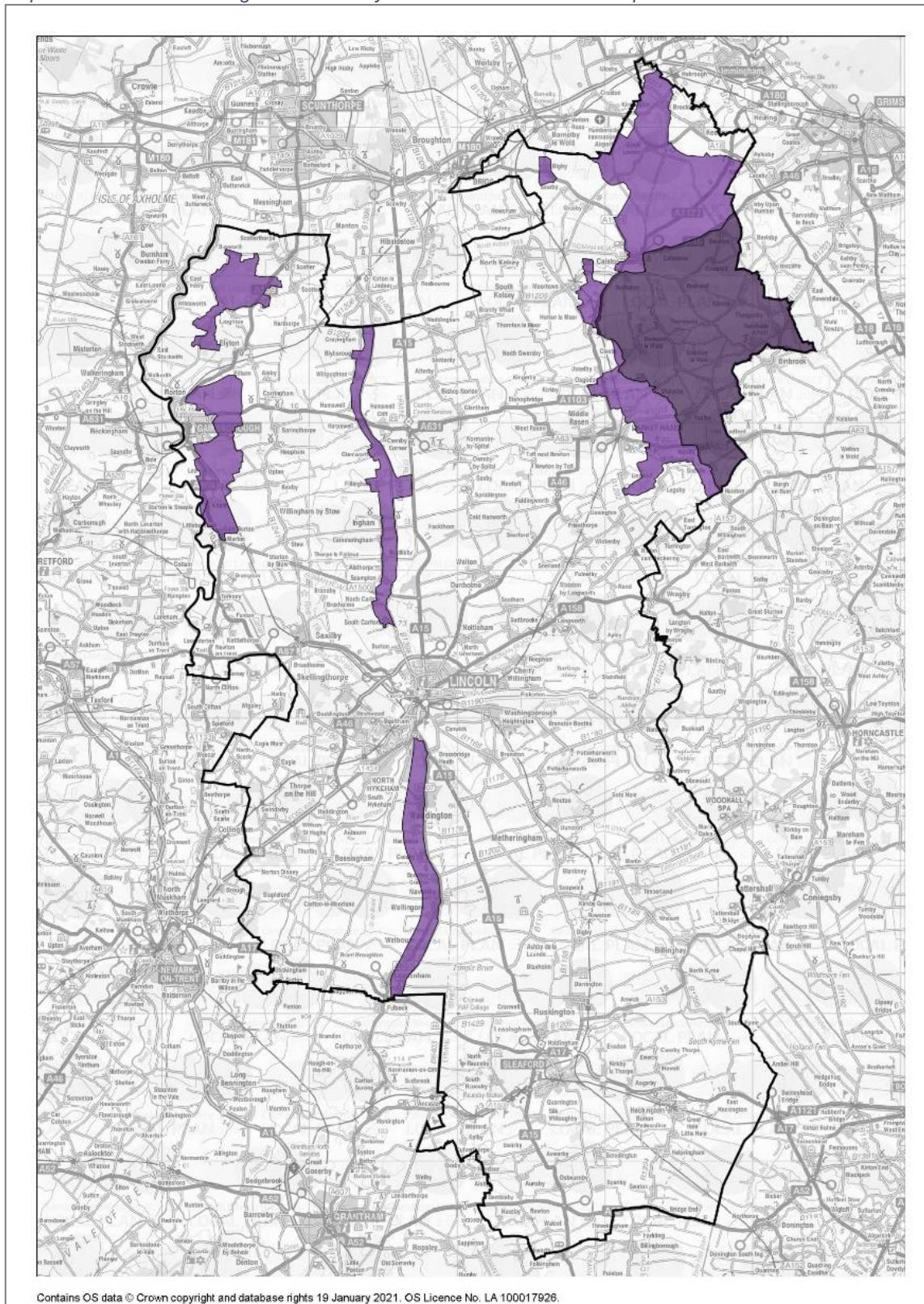
- 6.21. Whilst many of Central Lincolnshire's landscapes are valued, some are far more sensitive than others. Landscape Character Assessments undertaken both nationally in the Natural England Assessment and locally by West Lindsey (1998) and North Kesteven (2007) have been reviewed to understand areas of greatest sensitivity and value. As a result of this review the following areas are proposed as principal landscape constraints:

Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) – this area enjoys the highest level of national protection for landscape areas and so development of wind turbines in this area would have a significant impact on the protected landscape.

Areas of Great Landscape Value (AGLV) – a number of areas were designated as AGLV in the adopted Local Plan for their local landscape value. This includes much of the Lincoln Cliff; an area around Laughton Woods; wooded vales surrounding Gainsborough and in proximity to the AONB near Market Rasen and Caistor; and chalk wolds to the north of AONB.

- 6.22. No buffers are proposed to be taken from these areas, but clearly a detailed assessment would be required from any site as part of the application process, and this would include impacts on protected landscapes.
- 6.23. These areas are shown on Map 8 below with the AONB being the darker shade of purple:

Map 8: Areas of Outstanding Natural Beauty and Areas of Great Landscape Value



Natural Environment

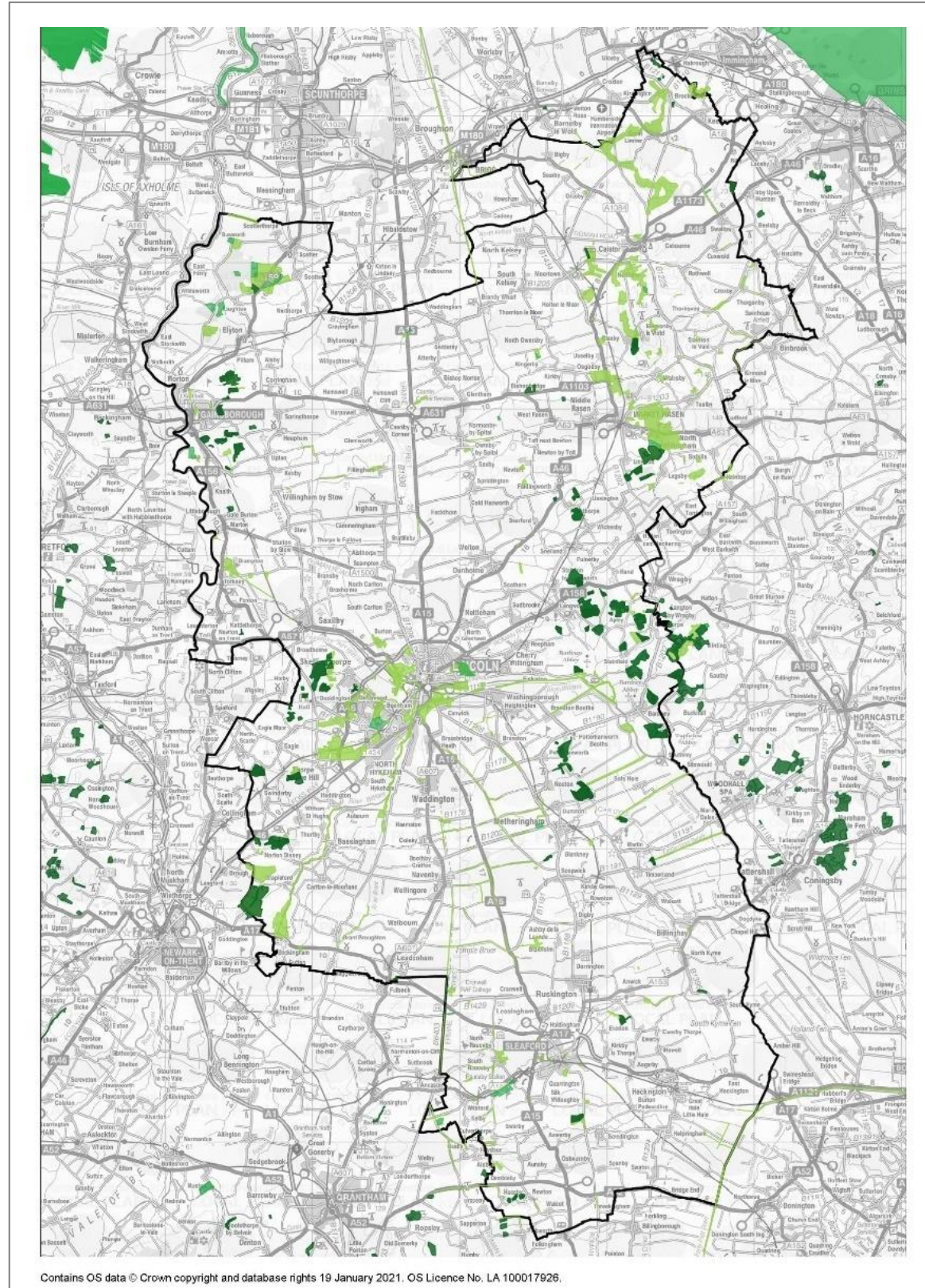
- 6.24. There are a number of wildlife sites and important habitats within Central Lincolnshire that are either locally or nationally protected. There is some evidence to support avoiding locating wind turbines near to such protected wildlife and habitats and the Planning

Practice Guidance makes clear in paragraph 018 that whilst turbines are relatively low risk to wildlife, risks can be greater in close proximity to such sites⁸.

- 6.25. However, no specific proximity has been identified in Government guidance and this would undoubtedly vary depending on the habitat and the species that are the subject of the protection on each site. As such, at this stage 1 sieve only the protected sites themselves have been applied as a constraint to wind turbines.
- 6.26. The following wildlife and nature conservation designations will be applied as principal constraints:
- Sites of Special Scientific Interest
 - Special Protection Areas, Special Areas of Conservation and Ramsars (although none exist in Central Lincolnshire)
 - National Nature Reserves
 - Local Wildlife Sites (which includes Sites of Nature Conservation Importance)
 - Ancient Woodland
- 6.27. These principal nature and environmental constraints are shown on Map 9 below with locally designated wildlife sites shown in light green, nationally designated sites in medium green and ancient woodland in dark green. Please note, a number of areas have multiple designations on them.

⁸ Paragraph: 018 Reference ID: 5-018-20140306

Map 9: Protected wildlife and habitat constraints

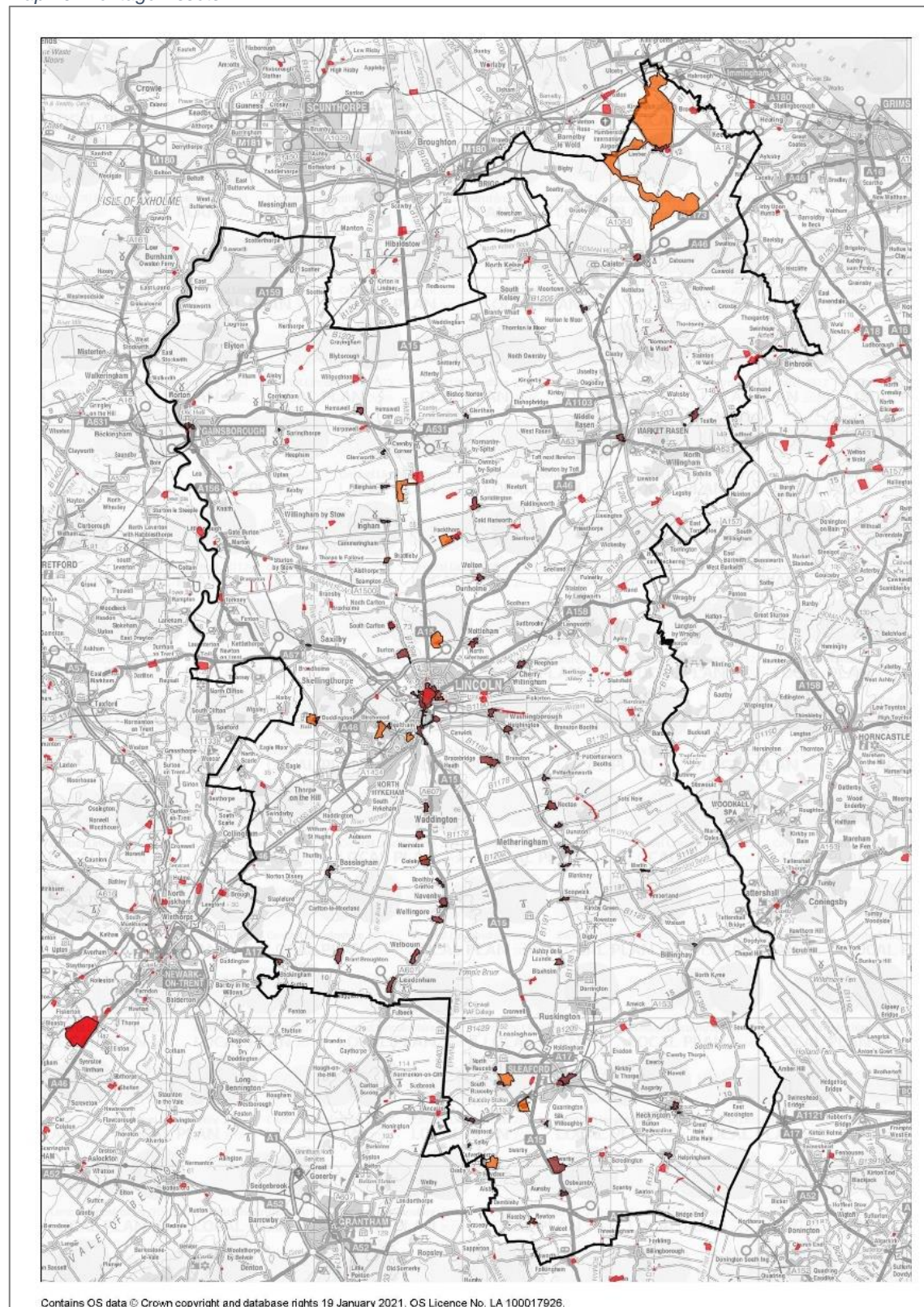


Historic Environment

- 6.28. In identifying areas that might be suitable for the development of wind turbines, it is not just natural features that can be impacted. The historic environment can also be particularly sensitive to delivery large scale wind turbines. This not only includes the location of the heritage asset itself but its setting too.

- 6.29. Assessing the potential impact on the setting of a heritage asset is not typically something that can be achieved on a map by applying a buffer to such assets, given the importance of topology and other factors that greatly influence what can be considered the setting of a heritage asset. However, identification of some of these heritage assets on a map can help to identify areas that clearly will not be suitable for development of wind turbines.
- 6.30. Taking this into account it is proposed that certain assets will be applied as principal constraints as follows:
- Protected Battlefields (none in Central Lincolnshire)
 - Scheduled Monuments
 - Historic Parks and Gardens
 - Conservation Areas
- 6.31. Listed buildings are not proposed to be included as a principal constraint as it is considered that the effect of a proposal on a setting of a listed building is a matter for detailed assessment at the planning application stage.
- 6.32. The proposed principal historic environment constraints are shown on Map 10 below with Historic Parks and gardens in orange, Scheduled Monuments in red, and conservation areas in a darker mahogany colour:

Map 10: Heritage Assets

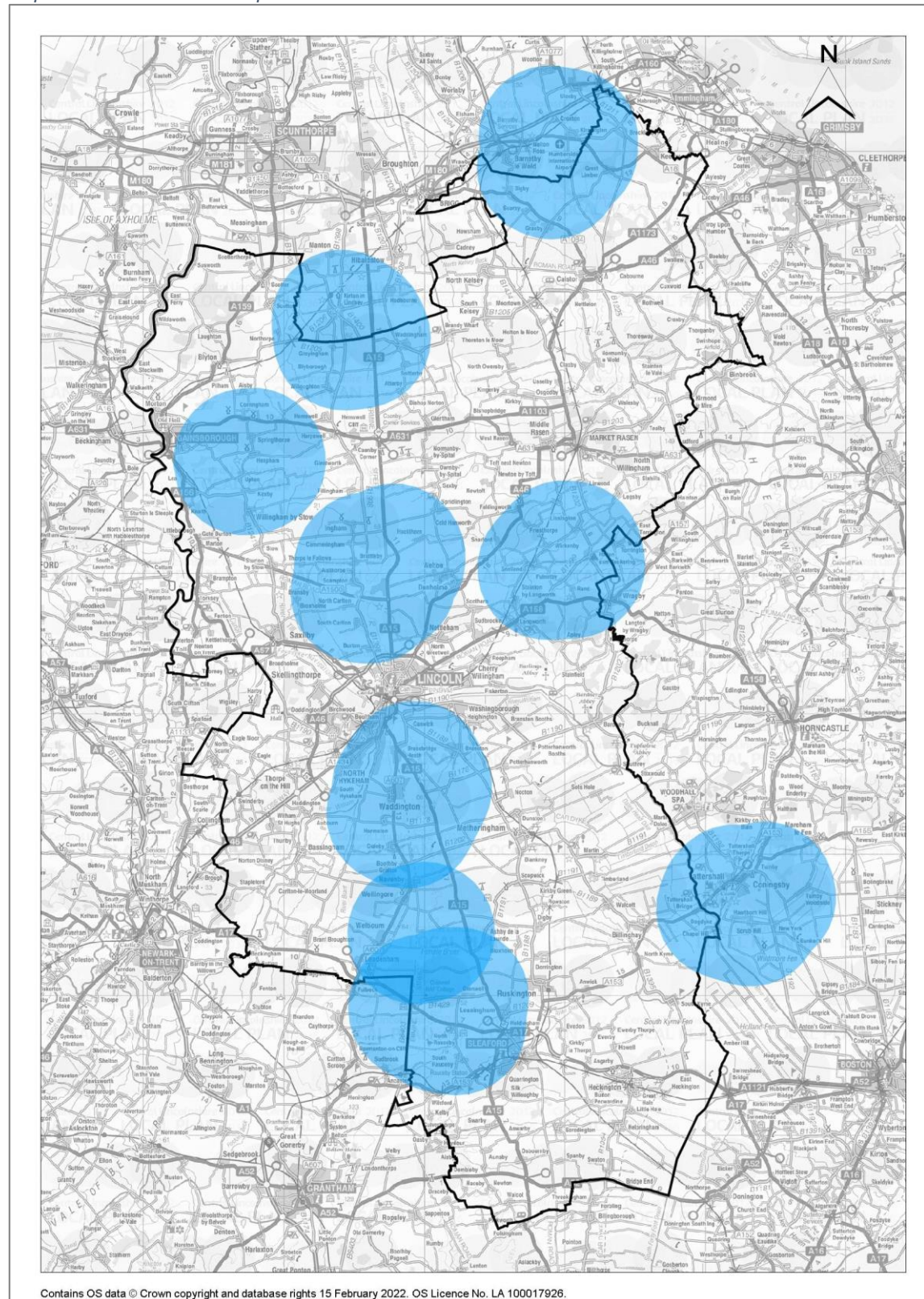


Air Safety and Ministry of Defence

- 6.33. There is much guidance about the need to avoid interference with radar and flight paths provided by the Civil Aviation Authority (CAA) and National Air Traffic Services (NATS) and others. In addition to these bodies the Ministry of Defence (MOD) also have a key presence in Central Lincolnshire with both flight and radar with the potential to be affected.

- 6.34. Discussions have been held with the CAA, MOD and NATS to understand the limitations for wind turbines as a result of both flight paths and radar. This has identified that this is a significant constraint to the delivery of wind turbines in Central Lincolnshire. However, it has also highlighted that many aspects affect the impacts of a wind turbine development on radar and flight paths including topography, size of turbine, precise location in relation to radar and airfields, and more.
- 6.35. As such it will continue to be essential to consult all of these bodies on any wind turbine development applications that may come forward and any unresolved objections from such bodies should preclude specific proposals from being approved.
- 6.36. However, as was highlighted in the DECC guidance applying a 5km exclusion zone around all airports and airfields, is a reasonable step to provide clarity for expectations as it is highly unlikely that any wind turbines would be acceptable within these areas. The airfields mapped with 5km buffers for the Regulation 18 Consultation are as follows:
- Humberside
 - RAF Waddington
 - RAF Coningsby
 - RAF Cranwell
 - Kirton in Lindsey airfield
 - Sturgate Airfield
 - Wickenby Aerodrome
- 6.37. In late 2021 further information was received about an additional airfield in Temple Bruer. Following further checks this airfield was added as a constraint, consistent with other airfields with a 5km buffer applied. The 5km buffer of all airfields applied as a constraint are shown on Map 11:

Map 11: 5km buffers from Airports and Airfields



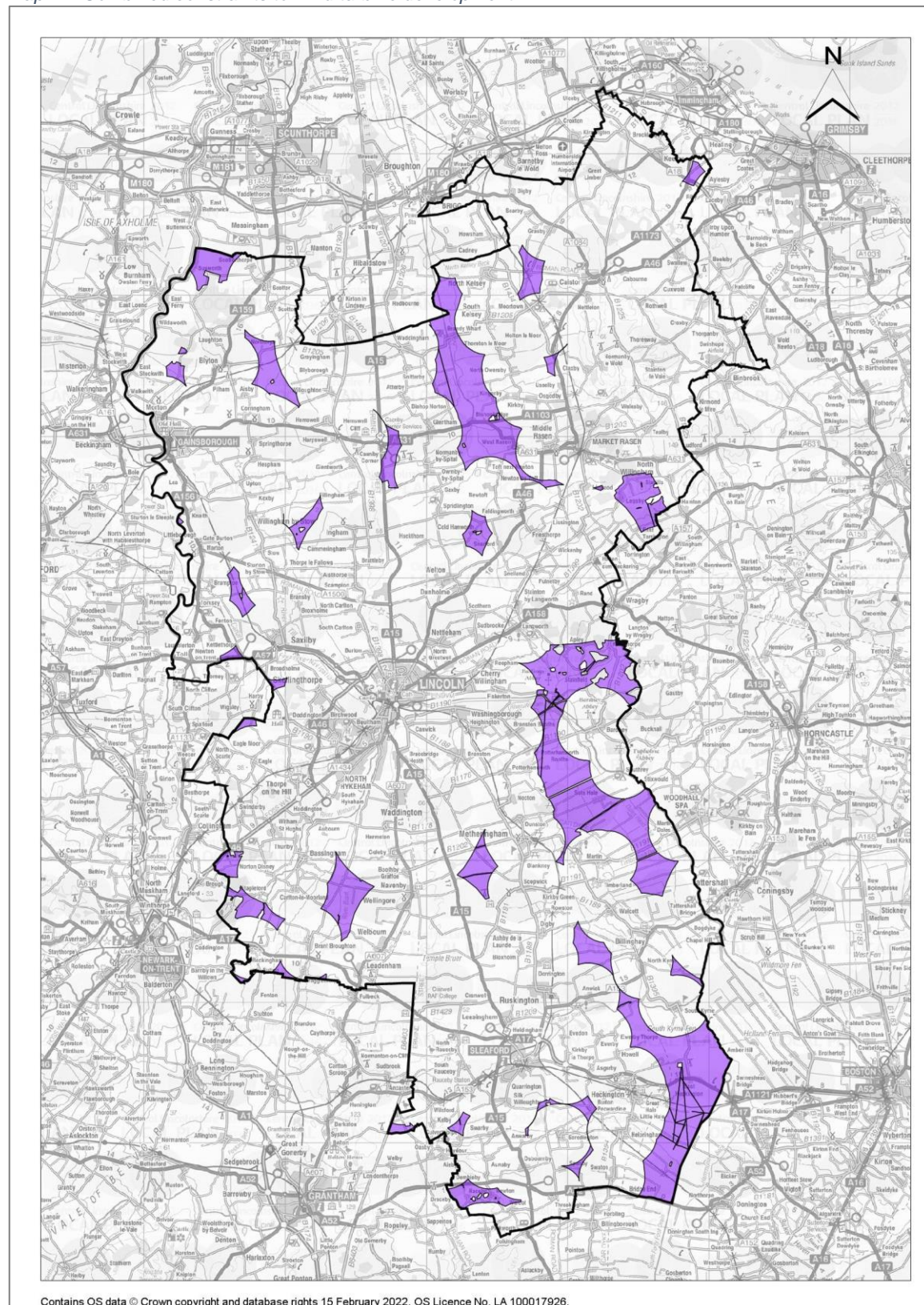
Combining the principal constraints

- 6.38. Each of these constraints are not applied in isolation, but they act together to rule out areas across Central Lincolnshire as being unsuitable for large scale wind turbine development in principle. To sum these up the principal constraints are proposed as:

- All settlements identified and named in the settlement hierarchy (Lincoln Urban Area, the Main Towns, the Market Towns, Large Villages, Medium Villages and Small Villages) and equivalent settlements outside of Central Lincolnshire and a buffer of 2km around each settlement;
- AONB and AGLV;
- Designated/protected habitats and species;
- Battlefields, Historic Parks and Gardens, Scheduled Monuments and Conservation Areas; and
- Areas identified as unsuitable for large scale wind turbines due to impacts on airports, airfields, radar and MOD activities (applying a 5km buffer from all known air fields, airports and air bases).

6.39. When all of the principal constraints are combined and excluded as being unsuitable in principle for medium or large scale wind turbines the result is that much of Central Lincolnshire is not considered appropriate for such development. However, there are a number of areas that are potentially suitable for wind turbines as shown in purple on Map 12. All areas coloured purple on Map 12 pass this first sieving process and would potentially (and subject to additional evidence gathering as detailed above) be identified as 'suitable for wind turbine development', subject to detailed assessments supporting planning applications and consideration of concerns raised by local communities.

Map 12: Combined constraints to wind turbine development



Detailed Criteria

- 6.40. Once the broad areas of suitability have been defined, the next important step is to provide a criteria-based policy to allow any proposals for renewable energy to be properly scrutinised.

- 6.41. The proposed approach is to develop a policy which sets out the general impacts that will be considered for all proposals for renewable energy generation. This includes managing the scale to be suitable for its location in terms of landscape and townscape character, visual amenity, biodiversity and geodiversity, heritage assets and safety. It also includes ensuring that it will not result in any issues with aviation and navigation or communication systems such as radar. Finally, it will need to allow for proper consideration of impacts on nearby properties and the amenity of sensitive uses, such as homes.
- 6.42. Beyond this the proposed policy would set out expectations for what information would accompany such an application and how the local planning authority would deal with it.
- 6.43. The proposed policy then sets out additional considerations specific to solar PV proposals (including loss of best and most versatile agricultural land); small and medium scale wind turbines of up to 40m (limiting turbines to one per property); and large scale wind turbines (including preventing turbines within 700m of a residential property and required additional criteria to be assessed and satisfied where a proposal is within 2km of any residential property).
- 6.44. This policy approach is considered to balance the competing challenges of the need to generate renewable energy locally to help ensure Central Lincolnshire is a net zero carbon region, as part of a suite of policies aimed at reducing carbon and increasing the generation of clean energy, with the need to protect our landscape and everything that is valued about Central Lincolnshire. Adequate protection is built into the proposed policy to ensure impacts of development are fully considered and that nearby communities can raise issues for them to be resolved as part of the process.

7. Reasonable Alternative Options

- 7.1. There are a number of alternative approaches that could be considered with two reasonable options presenting themselves.
- 7.2. The first alternative would be to separate out the policies for solar PV and wind turbines into two policies. Separating these two policies would not necessarily affect how applications would be treated. As such it is more streamlined to include requirements that apply to the two forms of renewable energy infrastructure (as well as other forms of renewable energy generation) in one policy, drawing out the specific additional requirements which apply solely to wind turbines.
- 7.3. The other option would be to have no policy relating to generation of renewable energy. This option would be contrary to national policy and would not be providing a positive strategy with addressing climate change. It would also impact on the key goal of delivering a net zero carbon Central Lincolnshire, given that the other policies in the plan alone would not be able to deliver this.

8. Conclusion

- 8.1. This Evidence Report demonstrates the rationale for the proposed policy as contained in the Proposed Submission Draft Central Lincolnshire Local Plan. This helps bring together relevant evidence that has informed this policy and how we have responded to comments received during the plan making process, as well as how the latest evidence and national guidance has been taken into account.