Climate (and Ecological) Emergency Advisory Committees

Report of Head of Policy and Programmes
Author: Jessie Fieth, Climate and Biodiversity Team
Telephone: 07873 700753
E-mail: jessie.fieth@southandvale.gov.uk

Vale of White Horse Cabinet member responsible: Cllr Bethia Thomas
Email: bethia.thomas@whitehorsedc.gov.uk
To: Climate Emergency Advisory Committee
DATE: 3 June 2024

South Oxfordshire Cabinet member responsible: Cllr David Rouane
Email: david.rouane@southoxon.gov.uk
To: Climate and Ecological Emergency Advisory Committee
DATE: 10 June 2024

Local Area Energy Planning in South Oxfordshire and Vale of White Horse

Recommendation

(a) For information only.

Implications (further detail within the report)	Financial	Legal	Climate and Ecological	Equality and diversity
	No	No	Yes	No
Signing off officer			Jessie Fieth	Equalities team

*see glossary

Purpose of paper

1. To introduce Local Area Energy Plans (LAEPs) to members of the Climate (and Ecological) Emergency Advisory Committees. This will be an important area of work for the councils to support the reduction of district-wide greenhouse gas emissions.

What is Local Area Energy Planning?

2. The decarbonisation of our districts will require substantial changes to the way that energy is generated, stored and distributed. We urgently need to phase out fossil fuels and transition to the electrification of heat and transport. This will increase electricity demand. At the same time, the output of renewable generation is more variable than traditional energy generation. We will move from a centralised energy system (with large-scale fossil fuel electricity generation sources) towards a distributed system with many smaller scale renewable energy schemes generating energy closer to where the energy is used.

3. The electricity grid does not have the capacity to cope with the increasing demand. The current process for investing in electricity grid infrastructure is not fit for purpose for transitioning to net zero. Increasingly, renewable energy projects and other developments are facing lengthy delays and high costs for getting an electricity grid connection.

4. A Local Area Energy Plan (LAEP) is a spatial plan which maps all the existing energy infrastructure of an area, evaluates the current and future energy demand and the range of technologies and scenarios. It will consider electricity demand, heating demand, retrofitting buildings for energy efficiency and decarbonising heating, electric vehicle charging and how our energy might be supplied, managed and consumed in the future. It will cover electricity transmission networks, gas networks, district heat networks*, future potential for hydrogen, fabric of built environment, energy flexibility*, energy generation and storage* and providing energy to decarbonise transport.

5. A LAEP produces a plan of actions needed to deliver the transition described above, and the energy infrastructure needed to reach the district-wide carbon reduction target - it will detail what needs to happen, where, when and by whom. The actions set out in a LAEP could include:
    a) Identifying zones that are most suitable for heat networks (more detailed feasibility studies would be needed before delivery of these heat networks).

    b) Identifying urgently required upgrades to electricity transmission networks which will help with planning to reduce wait times for new grid connections for renewable energy projects or new housing. Specifically, it will help to make sure that the grid capacity is available for the delivery of the zero carbon building policies in our forthcoming Joint Local Plan[1].

[1] Reading Borough Council are currently facing the situation where new developments have to install gas boilers, despite the local plan requiring low carbon heating, because the necessary electricity network capacity is not available.

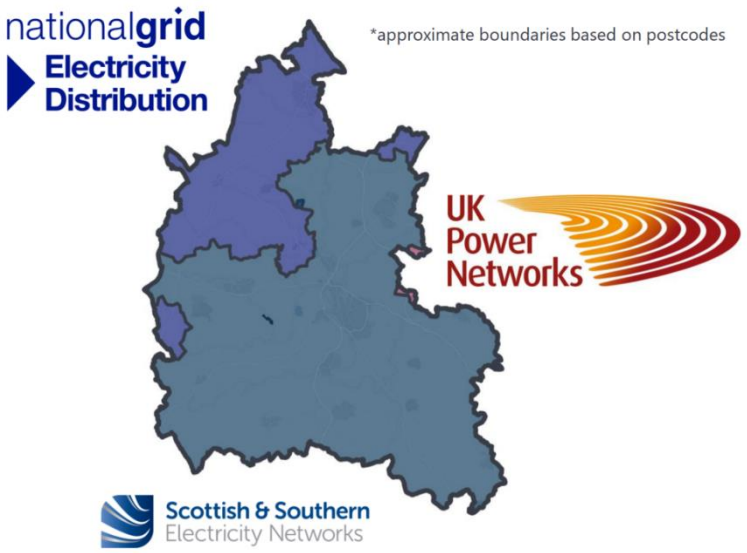
*see glossary

c) Identifying ‘no-regret’ opportunities for immediate investment where future technologies are unlikely to be suitable and the risk of future back tracking is low, e.g. identifying projects where use of hydrogen would not be suitable even if it did become available.

d) Identifying required upgrades to the transmission network that will enable the councils at achieve their net zero ambitions.

6. Producing a LAEP is a local authority led process, with significant input required from the District Network Operators (DNOs)*. There are two DNOs covering South and Vale; UK Power Networks, which covers a small area around Thame and Chinnor; and Scottish and Southern Electricity Networks, which covers the rest of the districts (see Figure 1).

Figure 1 – DNOs covering Oxfordshire



7. Local Area Energy Planning is a relatively new process and many of the places that already have LAEPs in place are urban areas. This example from York & North Yorkshire is a useful example for a rural area with an overarching document for the whole area and four individual LAEPs aligned with local authority boundaries sitting underneath this.

Why should we have a Local Area Energy Plan?

8. Some of the benefits of having a LAEP are:
   - Sets out a clear plan of actions and projects needed to transition an area’s energy system to net zero. This can then be the basis on which further feasibility work and project delivery and investment can be prioritised. This provides clarity for both local authorities and DNOs.
   - Can create a local supply chain capacity and capability for projects, and training and employment opportunities for residents.
   - Can identify alternative solutions, such as energy flexibility and renewable generation, for areas where there will not be sufficient electricity grid capacity to meet demand.
   - To improve the process to allow more targeted grid infrastructure investment by providing evidence of when and where additional grid capacity will be needed – this evidence can be used to unlock DNO, and other, investment. As well as giving the local authority a blueprint for action, they also provide all geographic stakeholders with a basis for taking forward activity and prioritising investments. DNOs are now permitted to invest ahead of need if they have sufficient high-quality evidence.

*see glossary

- Can save money in the long term due to planned energy infrastructure investment compared to unplanned and piecemeal delivery, despite the initial cost associated with commissioning a LAEP. This should avoid lengthy waits for grid connections (that we have experienced, for example, at Faringdon Leisure Centre).
- The LAEP will help local authorities to create and monitor a project pipeline of energy projects to advance decarbonisation, economic growth, energy security and climate adaptation in alignment with local strategies and policies. It will also provide greater transparency in why pipeline projects represent the best way forward to achieve local authority priorities.

9. LAEPs sit within a wider emerging energy system transition framework. A new national body, the Future Systems Operator (FSO), will be established in 2024 to coordinate and ensure strategic planning across the energy sector to ensure energy supply remains robust even as the ways that energy is generated, stored and used changes significantly. They will also provide independent advice to government and Ofgem, the energy system regulator. Ofgem is seeking to introduce a new, supra-regional Energy System Planning Function, the RESP, but recognises that to coordinate local activity at the point of energy consumption and generation, much more local and specific energy planning is required. This coordination will require local authority involvement and LAEPs are the best tool currently for local authorities to engage in this process.

10. A LAEP will sit alongside the forthcoming South and Vale Joint Local Plan. The Joint Local Plan, including the evidence collected through the Net Zero Carbon Study, will inform the LAEP. This will help DNOs to understand projected energy consumption based on existing and emerging Joint Local Plan policies on where areas of renewable energy schemes, new housing and infrastructure will be (alongside the existing process, Distribution Future Energy Scenarios). The LAEP is estimated to be finalised in summer 2025 so will not be available before the Joint Local Plan is submitted and it will be up to the council to determine how much (if any) is made publicly available. However, it will be useful to the local planning authority in helping to create an environment in which the policies in the Joint Local Plan can be delivered (particularly by increasing certainty about grid connections). The LAEP will help to identify any areas of grid constraint early so that the DNO, the council and developers can work collaboratively to find a solution which delivers the councils ambitions set out in the Joint Local Plan.

The Oxfordshire approach

11. The Oxfordshire Net Zero Route Map and Action Plan, which was endorsed by the Future Oxfordshire Partnership (FOP) in March 2023, identified Local Area Energy Planning as a priority action that would be best delivered by all the Oxfordshire local authorities working together. Through Project LEO[2], Oxfordshire has already mapped the state of the existing energy system, which provides an understanding of the current assets and the geographical variations of energy capacity and constraints.

[2] Project LEO (Local Energy Oxfordshire) ran trials in Oxfordshire which looked to build a broad range of reliable evidence of the technological, market and social conditions needed for a greener, more flexible and fair electricity system.

*see glossary

12. The LAEP workstream is overseen by the FOP Infrastructure Advisory Group, which includes representatives from all the local authorities in Oxfordshire. Oxfordshire County Council's Climate Action Team is project managing the LAEP process and has established a governance structure with key stakeholders. Officers from South and Vale sit on both the Executive Steering Board and Energy Planning Working Group which have been established as part of the countywide governance structure.

13. The scope of the Oxfordshire LAEPs are still to be finalised, with the intention being to follow the seven stages of a LAEP set out by the Energy System Catapult. It is likely that stages 1-4 (broadly the data collecting process) will be undertaken at an Oxfordshire scale – this will allow economies of scale to reduce the overall cost of the LAEP process without limiting each district's autonomy to set its own scenarios in stages 5-7, which will be undertaken at a district scale.

14. Officers from South and Vale are closely involved in these discussions to determine the approach that will deliver the more useful, cost-effective options for our districts. In the proposed approach outlined in paragraph 15 above, officers from South and Vale would be closely involved in stages 1-4 and then would take a lead on working with the consultants for stages 5-7 to set the district-specific scenarios and produce the South and Vale LAEPs.

15. The intention is that any data outputs produced through the LAEP process will be owned by the Oxfordshire local authorities. This will make it easier for us to update and refresh the LAEPs in the future without having to commission expensive updates. It is likely that SSE's LENZA tool will play a critical role in the LAEP process and conversations are ongoing about the certainty of long-term access to this tool. The data from the LAEP process will sit within the LENZA platform but will also be held separately by the local authorities and could be integrated into each council's own GIS system. Officers are continuing to collaborate with OCC to make sure this requirement is met throughout the procurement process.

16. The Future Oxfordshire Partnership has already allocated £150K from the Oxfordshire Growth Capacity Fund to the LAEP process. A bid for an additional £450K from the same fund has been submitted, with a decision to be made at the FOP meeting on 30 July. This budget would be sufficient to procure district-level LAEPs for the whole of Oxfordshire. Early market engagement with the leading LAEP consultants has made it clear that it would be difficult to separate out procurement of the Oxfordshire wide work from the district-specific LAEPs. Oxfordshire County Council will be undertaking the procurement process for the entire Oxfordshire LAEP process.

17. The LAEP process will require a significant amount of South and Vale officer time over 24 months to develop the LAEP's. At this stage, there is no ask for any commitment beyond the 24 months. It has been suggested that the FOP Oxfordshire Growth Capacity Fund contribution may be able to support capacity or to bring in specialist skills to the district councils.

Timescales going forward

18. Table 1 below outlines the proposed key milestones for the procurement of the LAEPs.

*see glossary

Table 1 – LAEP key milestones		
	LAEP governance process	**South and Vale internal process**
May 2024	Climate officer approval of project scope and business case for additional budget (at EPWG meeting)	**8 May -** LAEP briefing paper to SMT
	Senior officer approval of project scope and business case for additional budget (at ESB meeting)	
June 2024	**Early June -** Infrastructure Advisory Group approval of business case for additional budget	**10 June -** LAEP briefing paper to South CEEAC
July 2024	**30 July -** Future Oxfordshire Partnership decision about additional budget	**16 July -** LAEP briefing paper to Vale CEAC
August 2024	**Mid August -** Finalisation of procurement specification and go to market	
November 2024	Award contract	

Financial Implications

19. No direct district council expenditure is proposed however, officer involvement in this work is likely to impact on officers' ability to deliver other Corporate Plan commitments whilst the LAEP is being developed.

20. Once completed, each LAEP will contain a list of actions and energy infrastructure projects that will need to be funded and delivered. The certainty provided by the LAEP will help to secure the investment needed from the DSO's and other external funding sources. Decisions about which projects (if any) may be supported and funded by the councils will be subject to democratic decisions within each council and be subject to the usual budget setting processes and cycles.

Legal Implications

21. There are no legal implications as a result of this report.

Climate and ecological impact implications

22. The climate implications and ecological impact implications are considered in the main body of the report.

Equalities implications

23. There are no equalities implications as a result of this report.

*see glossary

Risks

24. The partnership approach, led by Oxfordshire County Council, offers substantial opportunities for sharing knowledge, skills and resources for the LAEP process. However, this brings risks of project delays and breakdown if there are disagreements or differing levels of commitment amongst the partnership. The governance process (described above) which has been established will help to alleviate these risks.

Next steps

25. Officers from South and Vale will continue to work with colleagues from around the county to further refine the approach to the Oxfordshire LAEPs and ensure that the county-wide procurement process meets the needs of South and Vale.

*see glossary

Glossary

District heat networks – a heat network supplies heat from a central source to consumers, via a network of underground pipes carrying hot water. This avoids the need for individual boilers or electric heaters in every building.

Distribution Network Operator (DNOs) – these are licensed companies that own, operate and invest in improvements the network of cables, transformers and towers that bring electricity from the national transmission network to businesses and homes. The DNOs are regulated by Ofgem.

Energy storage – the capture of energy from renewables (such as wind turbines or solar panels) to be stored and then released when the power is needed most. The most common is battery energy storage systems.

Energy system flexibility – energy systems need to continuously match supply to demand (this is called energy balancing). Energy system flexibility is the ability to adjust supply and demand to achieve that energy balance. To meet net zero carbon targets, flexibility will become much more important as more renewable electricity is generated and as our heating, transport and other behaviour changes use more electricity. For example, in a flexible system, a large-scale battery could charge up where there is additional generation and discharge this energy onto the grid when demand is highest.

*see glossary