

## Consultation Response: DNO Low Carbon Technology - Energy Efficiency role in ED3

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### About Energy Capital

Energy Capital is the West Midlands' smart energy partnership, bringing public, private and third-sector partners together to deliver an energy transition that is timely, just, and grounded in local expertise. Based within the West Midlands Combined Authority (WMCA), a body that represents the seven local authorities that constitute the West Midlands conurbation, we provide a single point of contact for government, regulators, funders, investors and partners across the West Midlands. Our aim is to make the West Midlands one of the most attractive locations to develop and deliver innovative clean energy systems and associated businesses in the world.

Working with local authorities, regulators, energy companies and national government, we're responsible for delivering against our Regional Energy Strategy and securing the investment and devolved powers necessary to do it justice. We have an extensive work programme, from delivering innovation projects to support smart energy planning, to building a pipeline of investment-ready local net zero projects to attract the financial weight of the private sector, to retrofitting up to 14,000 of our region's oldest and coldest homes.

### Executive summary

Energy Capital is the West Midlands Combined Authority's energy team and also represents a wider regional energy partnership <https://www.wmca.org.uk/what-we-do/environment-energy/energy-capital/>. We have:

- A proven track record of LCT rollout through our Devolved Buildings Retrofit Pilot that has seen us entrusted with £167 million of public investment to retrofit 14,000 of the West Midlands' coldest and oldest homes by 2028.
- A Regional Energy Strategy with a focus on smart spatial planning, promoting and enabling flexibility market mechanisms and using innovative green finance to channel private investment in place-based energy schemes alongside delivering public grant funding.

We have been working in partnership with National Grid Electricity Distribution since our inception and have been cocreating a number of improvements to our collective ability to coordinate activities. This includes working in collaboration on:

- Regional Energy System Operator (RESO) an Innovate UK funded project to develop a strategic energy plan for net zero for Coventry. This work championed a place-based approach to strategic energy planning as opposed to an uncoordinated approach following a national plan.

- Project PRIDE – A Strategic Innovation Fund (SIF) funded innovation project looking at enhanced visualisation and project pipeline development where demand and generation data is shared with NGED for inclusion as part of Distribution Future Energy Scenarios (DFES) planning processes.
- Regular and ad-hoc partnership on particular connection challenges from new developments (domestic and commercial/industrial), transport decarbonisation and retrofit schemes.

We welcome the focus on the role of DNOs as we continue to work positively with our regional operator. We see that there is an opportunity through the ED3 framework to formalise the positive engagement that we have had and identify areas for DNOs to go further and faster to enable the cost-effective rollout of low carbon technologies. Our position is that the most effective option is the Enhanced Coordination role, strengthened with some elements of the Expanded Role including enabling flexibility market mechanisms.

We do not agree that DNOs should be owning and operating low carbon technologies. Rather we view Energy Capital as the most effective actor to take on this delivery role in the West Midlands, maintaining our strong track record of delivering through the Devolved Buildings Retrofit Pilot, ensuring quality and blending finance to guarantee that revenue is retained in the region and recycled to deliver more impact and facilitate a just transition.

## Consultation Response

### Overarching rationale

- 1. Should DNOs play a role in co-ordinating and supporting a cost-effective energy transition through improved planning and supporting/directing targeted delivery? How can they help make the transition more efficient and affordable for everyone, and do they have a role in supporting lower income households?*

Energy Capital agrees that DNOs have an important role in supporting the rollout of low carbon technologies. The DNO we work most closely with is NGED, who have increasingly demonstrated an aptitude for this role by engaging comprehensively with key stakeholders. This includes establishing meaningful feedback loops (for example through the PRIDE project), showing the impact of collaboration on future business planning processes where previously the engagement has felt at best opaque and at worst extractive.

Additionally, through the continuous improvement of their Distribution Future Energy Scenarios (DFES) Projections, NGED have demonstrated they have the technical capability to plan for the rollout of low carbon technologies across their license areas, unlocking connection barriers in advance of scheme delivery. This will become

increasingly important as we move from ad-hoc to place-based rollout of LCT technologies underpinned by the Warm Homes Plan.

DNOs have a role in safeguarding the energy resilience of vulnerable customers through priority service registers and additional measures to ensure continuity of supply to that customer group. They also have a role to ensure that future flexibility markets are fully accessible (and not punitive) to vulnerable customers. Energy Capital has worked with NGED and other project partners on Project EQUINOX, a heat pump flexibility trial where we developed an equitable participation framework which could be applied to ensure schemes are designed to allow fair participation and to support equitable access to LCTs and their flexibility-enabling functionality.

In summary, DNOs have a strong role to play in terms of working in partnership with delivery organisations to ensure that the underlying infrastructure a) does not form a barrier to place based LCT rollout schemes and b) could potentially support market mechanisms to value low-voltage flex, which could reduce either the capital or operating costs of LCTs.

## Enhanced Co-ordination

### *2. Do you agree with the overall rationale and scope of 'Enhanced Co-ordination'?*

Energy Capital agrees with the Enhanced Coordination rationale and scope in general. It aligns with many activities we are already undertaking with NGED. Whilst it is helpful to have these formalised, we are keen to maintain the flexibility to continue to work with NGED through the mechanisms that we have successfully developed over time including:

- Digital tools which provide high level optioneering capabilities (we are currently using LAEP+) and interface with a range of more detailed tools.
- Regular and ad-hoc meetings with key account managers who “stay with the problem” i.e. help us navigate internal DNO working processes.
- Feedback on data fed into forecasting processes (both DNO and RESP) in order to understand the impact of submission including understanding ascribed confidence of the data provided.

We have seen the effectiveness of sustained collaboration between LAs and NGED within our regular Local Area Energy Plan (LAEP)-Coordination Group. The aim of this group is to a) make more informed local decisions based upon better visibility of the strategic energy planning process and b) ensure that strategic energy planning processes better reflect the needs of place.

*3. What are your views of the effectiveness of the existing Collaboration Plan requirements? Do you think the enhanced Community Collaboration Plans we have described would be helpful to stakeholders and, if so, how best should they be monitored?*

Energy Capital is keen to see existing systems leveraged where appropriate. Namely, for engaging stakeholders and communities, we would expect enhanced community collaboration plans to use existing structures such as our Energy Capital Collaboration Days and partnership with public and private sector partners to help identify key stakeholders and plan engagement. A successful enhanced Community Collaboration Plan will recognise where stakeholder convening power is already present within regions, and join up with existing institutions to access stakeholder networks.

*4. How useful is the data currently published by DNOs, and is it presented adequately?*

The data produced by DNOs is useful and has shown a marked improvement over time. Recent improvements from NGED include the visualisation of future investment in the network, which we access via LAEP+. These give an indication of where current constraints are likely to ease although it is not always possible to interpret the impact of these investments on development programmes without further queries to the DNO for clarification.

There remains some disconnect between DSO planning processes and on-the-ground connection processes as these do not currently map directly onto one another, which can prove challenging when planning low voltage and domestic schemes.

It is important to be able to pull these datasets into multiple data platforms in order to compare and contrast with wider initiatives. For example, we recently set up an API for our Spatial Development Strategy data platform to pull through the latest data on sub-station headroom. This enabled us to map opportunities and challenges for future new housing estates.

Further data we would like to see published would be around domestic flexibility opportunity zones (down to LSOA level) which would help us to triage priority areas for place-based initiatives including flex market mechanisms.

We would also like to be able to track accelerated connections where a smart/flexibility alternative is offered to mitigate a long connection offer and where these have been successful in accelerating that connection.

5. *What are your views on strengthening the System Visualisation Interface requirement, and would it be valuable for DNOs to collate and publish additional non-network datasets, if so, which datasets would be most beneficial?*

Energy Capital supports strengthening the System Visualisation Interface requirement, although many of the tenets are already incorporated through our innovation projects with NGED. Our Project PRIDE collaboration with NGED to produce the LAEP+ tool demonstrates the value enhanced system visibility has to stakeholders involved in local planning. We would welcome DNOs funding or continuing to fund access to tools such as LAEP+ which have a number of public datasets embedded within it.

We do not think it is necessary for DNOs to separately publish non-network datasets if they are providing access to a tool that contains these datasets within them.

The critical element of system visualisation is the ability to be able to spatially compare network data, with non-network public data sets and with local datasets on projects and proposals that local stakeholders are wanting to take forward.

In Project PRIDE we are trialling a “Send to NGED” functionality which gives local authorities a digital mechanism for feeding future demands directly for consideration as part of the DFES planning process. This, or similar functionality, possibly across multiple data portals will also be critical for streamlined information flows for RESP. It would seem sensible when considering system visualization to ensure that, regardless of whichever data tools are ultimately made available, the data flows are able to move between platforms with unique identifiers and sufficient metadata for interoperability.

A further enhancement to the system visualisation functionality we currently have would be the ability to spatially and temporally assess the changes to the network. I.e. the ability to step through the spatial changes to the network to ensure that these align to local and regional ambition.

We believe DNOs could support the sharing of some additional datasets with combined authorities in order to prioritise zones e.g. Looped service and fuse cutout concentrations; necessary load related expenditure volume and costs of reinforcement; DUoS cost avoidance potential; Flexibility market opportunities; Priority Service Register (subject to GDPR considerations).

In summary, Energy Capital supports strengthening the system visualisation interface, this view is supported by the insights we garnered from our collaborative Project PRIDE initiative with NGED, which demonstrated the value of enhanced system visibility to stakeholders involved in local planning.

*6. What are your views on the Working with Local Authorities and others proposals we have set out above? What if any, would be the key elements of this? Are you aware of particular entities who would benefit from such advice?*

Energy Capital is supportive of the technical, planning and information support that DNOs can offer local authorities and other local actors. Outlining network build options to inform local authority decision-making would be highly valuable.

NGED are currently working through a process with us to identify a number of priority areas across our Investment Zones, Growth Zones, Heat Network Zones, and large capital development areas such as Birmingham Sports Quarter. In these cases, we have been offered engineering capacity to optioneer network designs. The challenge we would want to address in these cases is to look at behind the meter opportunities afforded by low carbon technologies. It is clear that the burden of developing these smarter behind the meter opportunities falls to the commercial developer or public entity.

DNOs should offer support where they can to local authorities and other local actors, such as social housing providers, heat network zone coordinators, community energy groups and retrofit delivery organisations to inform decision-making.

DNOs should also recognise the value of communicating with residents and other stakeholders via the most appropriate and trusted intermediaries. As an example from our experience in the EQUINOX project, we found that LA-supported engagement with residents via social housing providers achieved a significantly higher proportion of responses to a survey on heat pumps than other methods and routes of communication (including, in some cases, via energy suppliers). While respondent-rewarded surveys typically target around a 10% response rate; of the 810 social housing tenants contacted, 198 responded to the survey, signalling a 24% response rate.

*7. How could iDNOs support the proposals in this portion of the consultation? How could either private wire connected properties or license-exempt networks feature in these proposals?*

We would be keen to understand the role of iDNOs in microgrid or behind the meter solutions, but we haven't been in a position to explore these opportunities yet to have an evidence base for a stronger recommendation.

*8. We are keen to understand how these proposed Enhanced Co-ordination activities could best integrate with NESO's RESP processes in the near and long term, and how these proposals could complement, or be in tension with, RESP development?*

The enhanced coordination activities could help clarify and streamline key data processes including how local and combined authorities feed into the RESP process and

assess the outcomes of the RESP process. The Request for Information (RFI) process for tRESP showed the challenge of trying to collect data for both RESP and DFES at the same time and led to duplications, inconsistency and missing sources of data input.

We know that RESP are planning to develop a range of 'Local Actor Tools' which may help to be able to visualize strategic energy planning, but it is critical that this is interoperable with other energy planning tools such as LAEP+.

The insight from the tRESP process was that it was only very large-scale schemes which were deemed to be a Strategic Investment Need. It will be important for DNOs to be able to flag smaller and smarter schemes for investment ahead of need where these schemes would unlock low carbon technology rollout.

## Expanded Role

*9. Do you think if DNOs adopted the type of Expanded Role described above this would add value and support the rollout of LCTs and EE? Could this model provide an effective and viable way to deliver network and system benefits? If so, could this be achieved while also prioritising support for low-income households?*

We agree with some of the elements of the expanded role including:

- **Identifying suitable homes** for large-scale solar, battery, heat pump or energy efficiency programmes.
- **Targeting low-income- households** to ensure fairness.
- **Facilitating area-based- rollout** to reduce system costs and accelerate decarbonisation.

We do not agree with the role of DNOs including **funding or owning LCT**. We would rather **take on the delivery role ourselves**, maintaining our strong track record of delivery through the Devolved Buildings Retrofit Pilot, ensuring quality and blending finance to guarantee that revenue is retained in the region and recycled to deliver more impact. DNOs could lead a procurement process to acquire large quantities of LCTs which are then distributed/owned in such a way to provide the best community benefits.

**We would welcome a strong partnership role in Pilot Delivery Models within ED3.**

*10. What are your views on us considering these proposals using a network benefit and wider system benefits approach? Do you have relevant information on the likely network, system, consumer or efficiency benefits of such an approach?*

It would be helpful to have an independent review and/or established methodology for establishing whole system benefits and crucially where these benefits accrue. For example, current projects which offer flex benefits to the DNO rarely get full system value



and the remaining savings are amortized across the wider customer base for little measurable benefit.

Similarly, there is a split incentive around electrically driven heat networks. While these could offer significant grid services, they are rarely designed with the large thermal stores needed to optimise this approach as the financial incentives to do so do not accrue to the developers. Further innovative and system-focused approaches, such as those which could see ambient temperature, residential heat networks looped into higher temperature district heat networks, avoiding the need for large, more strongly grid-impacting individual heat pumps in each dwelling, are also not incentivised.

There is a large body of evidence (RESO, [PwC report on place-based development](#)) to show that a locally optimised approach offers significant cost savings than a top down approach to the same problem.

*11. Do you have any views on the archetypes presented and their implications? Do you have any other approaches we should consider? Do you have any evidence on key components notably:*

- *On the technologies and measures that should be supported: Do you have evidence on the relative costs and benefits of different technologies? How could heat pumps and other low-carbon heating technologies be included whilst still offering wider system benefits?*
- *On the identification of suitable properties and consumer engagement: Would DNOs be well placed to proactively identify suitable properties and/or engage with consumers, or are there other actors better placed to perform these functions?*
- *On the potential funding approaches and implications: what are your views on the feasibility, or risks from these approaches; do you have evidence from other sources that is relevant to these considerations?*
- *On responsibility for installations: what are the risks and opportunities if DNO's were responsible for installations? What are the options for partnerships and how could different responsibilities offer better outcomes?*
- *On ownership and control of assets: how can necessary level of network or system benefits be achieved without DNO control and ownership? Does this pose other risks and challenges, and how might these be overcome?*

*On the technologies and measures that should be supported:* it will be important to include all types of measures that can offer system benefits to enable bespoke, area-tailored energy transitions. This includes heat pumps (both community-scale and small, individual heat pumps), thermal storage and batteries etc. It should be noted that the



EQUINOX Project produced some very useful learnings about deployment of heat pumps to support network flexibility and reduce system costs.

### **Laying the groundwork**

Energy Capital is generally supportive of the laying the groundwork approach. We believe the principle of DNOs using their expertise to proactively identify areas likely to adopt LCTs and conducting unlooping work, fuse upgrades, and other enabling works in preparation for this and overseeing procurement of LCTs (although not owning assets directly) is a sensible one.

### **Widening participation**

An area-wide approach to LCT rollout that is open to all households is supported by Energy Capital. This is highly complementary to our existing place-based approach to retrofit delivery through our Devolved Buildings Retrofit Pilot – a single area-based funding pot that we are already well into delivering against.

However, we believe that any version of this approach reliant on requiring DNOs to co-fund it would ultimately be unworkable. Conversely, Energy Capital has an existing record of place-based LCT delivery and will have access to Warm Homes funding to bolster our work, making us a well-positioned partner to take on the delivery role for LCT rollout in the West Midlands. A plausible model for this could be for NGED to bolster our delivery capability by funding Energy Capital proportionately to the network reinforcement cost savings achieved through strategic, place-based LCT rollout.

### **Focused intervention**

As above, we do not believe it would be viable for DNOs to directly fund LCT installations.

*12. Do you have views on whether pilots of these approaches would be valuable? And, if so, whether the pilots should potentially include a range of options across archetypes, or whether the scope should be narrowed in advance? What should be the main focus of any pilots?*

A pilot of this approach would be extremely valuable. Furthermore, Energy Capital's existing productive relationship with NGED and wider partners makes the West Midlands an ideal place for a pilot to be conducted. This is demonstrated by our strong record of collaboration, including partnering with NGED to deliver Project PRIDE through the Strategic Innovation Fund, and ongoing delivery of the Devolved Buildings Retrofit Pilot.

Below are a set of hypotheses we feel could be tested via a pilot:

1. Enhanced Coordination is enough to make a difference, without DNOs having to go as far as the Expanded Role. There are ultimately better suited organisations than DNOs to be designing, installing, or owning LCTs.
2. Widespread adoption of LCTs relies on providing commercial returns to attract investors, hence the availability and scale of returns will drive the focus of area-based approaches.
3. Widespread adoption of LCTs will require ownership models tailored to different tenancy types, which may involve static grid-scale assets to benefit those who cannot own/install LCTs in their own homes.
4. The consumer proposition only works if we can offer a meaningful bill saving, which requires one or more of: maximising self-consumption, accessing off-peak tariffs, and/or sustained flexibility payments.
5. Deploying enough smart/flexible assets (that are market operable by default) in a focused area will enable a meaningful reduction in network load-related expenditure, which can be passed on to consumers as a quantified bill saving.

We suggest the pilot could involve a consortium of partners led by NGED and the WMCA/Energy Capital and other representatives to ensure a number of different role types were covered:

- 1 – Deployment Planner (Group led by NGED’s DSO and Energy Capital)
- 2 – Network Readiness (NGED’s DNO and ICP/IDNOs working to ensure the power network can accept new assets)
- 3 - Financer (Energy Capital through grants and returnable finance, GBE)
- 4 - Customer front end (customer acquisition/advice/journey/protections/local level roll out)
- 5 - Developer (installers and ops, coordinating, follow up, quality assurance)

The pilot would include pooling datasets between partners to enable Energy Capital to identify and agree priority zones to roll out LCTs in a way which would optimise the viability of finance, bill savings and offer the best consumer proposition. With a necessarily advanced understanding of its own geography, Energy Capital is extremely well positioned to work with NGED and complement their understanding of opportunities and risks within the network.

NGED could support a procurement exercise / contract a service to provide LCTs including ownership, to enable GBE or Energy Capital to finance assets to be owned in a way which provides best community benefits (using a similar approach to the REACH project, which used grid-connected batteries to enable LCT uptake in constrained rural areas).

Recognising the potential that other areas may also put forward other pilot arrangements, we would strongly encourage that strategic authorities and DNOs are further involved in any pilot design going forward.

*13. How could iDNOs support the proposals in this portion of the consultation?*

We would be keen to understand the role of iDNOs in microgrid or behind the meter solutions, but we haven't been in a position to explore these opportunities yet to have an evidence base for a stronger recommendation.

## Conclusion

Energy Capital welcomes the focus of this consultation on the role of DNOs in enabling the place-based rollout of LCTs. Our productive relationship with NGED, built through our experience of working collaboratively and sharing data on initiatives such as Project PRIDE, has demonstrated for us the technical capability and stakeholder relationships that DNOs can leverage. This is why we are supportive of the Enhanced Coordination role outlined in this consultation, ideally strengthened by some elements of the Expanded Role including enabling flexibility market mechanisms. We are not supportive of proposals that would see DNOs funding or owning LCTs.

We believe a pilot of this approach would be extremely valuable. Energy Capital's existing collaborative relationship with NGED, proven track record of place-based LCT rollout and live Devolved Buildings Retrofit Pilot make us an ideal partner to not only help facilitate a pilot in the West Midlands but do so at the right pace and scale.