



SSEN VFES

NEA Insights and Recommendations

A Briefing for SSE-N prepared by National Energy Action

August 2023

Contents

- Introduction3
- Insights From the Commissioned Reports4
 - Machine Learning Discovery of Vulnerability Signatures4
 - Future vulnerability - Lifestyle Driven Scenarios and Emerging Vulnerabilities in the UK Energy Sector 6
 - Overlaying both reports.....8
- Mapping the Insights to Regulatory Frameworks10
- Recommendations for SSEN.....12
 - Improving work to address vulnerabilities in the SSEN areas12
 - Potential next steps for VFES in the Network Innovation Allowance13
- Annex 1 - Addressing Vulnerability in RIIO-ED215

Introduction

NEA is the national fuel poverty charity. We work in partnership with stakeholders across England, Wales, and Northern Ireland to ensure that vulnerable and low-income households can fully participate in the energy market and live in a warm home. This includes working with representatives from local and national governments, energy suppliers, energy networks, the health sector and housing associations.

NEA has considerable experience in working with the energy networks to better understand vulnerabilities. Throughout RIIO-ED1 and the beginning of the ED2 period, NEA has worked with Ofgem and the network companies to address vulnerabilities, exploit the potential for linkages across the whole energy sector and more generally cultivate deliverable propositions for vulnerable households, especially those on low incomes.

Energy networks have both responsibilities, and are given incentives, to provide additional support to their most vulnerable customers. Distribution Network Operators have recently been given a Licence Obligation specifically linked to vulnerability, introducing an overarching principles-based licence obligation on DNOs to treat their customers fairly, including those in vulnerable situations, throughout their operations. Alongside this obligation, there is a requirement to have a vulnerability strategy that sets out the activities they will undertake to deliver positive outcomes for consumers in vulnerable situations, and a financial reward DNOs for the delivery of their strategy up to a maximum of 0.5% of base revenue (and symmetrical potential penalty of up to 0.5% of base revenue for failing to meet baseline standards).

Scottish and Southern Electricity Networks (SSEN) are currently delivering their RIIO ED2 Business plan, which runs from 2023 to 2028. Alongside delivery of the current business plan, they are in the early stages of planning for their business plan for the next price control. To ensure that both work done in in the current business plan, and the planning for future price controls is relevant, it is important for SSEN to understand the context of consumer vulnerability in their network area, and how this may evolve into the future, as both society and the energy system go through changes. Their Vulnerability Future Energy Scenarios (VFES) project looks to help with this, focusing on customers and communities and deploy foresighting, machine learning and expert validation to test whether a reliable forecast of vulnerability trends can be developed.

This aim of this briefing is to provide SSEN with NEA's expert view of the important trends regarding their customers in vulnerable situations, and to make some recommendations for work to be taken forward to address this. It uses insights from work completed by others for SSEN to do so. In particular, the briefing includes:

- A summary of the insights from the two reports, provided by external organisations into the VFES project to date:
 - Machine Learning Discovery of Vulnerability Signatures (The Smith Institute)
 - Future vulnerability - Lifestyle Driven Scenarios and Emerging Vulnerabilities in the UK Energy Sector (Imperial College London and Futurall)
- Linking these insights into the regulatory regime, including:
 - How they link to the current price control framework.
 - Any learnings needed for future price controls.
- Recommendations for to be taken forward in the context of the current price control and planning for the next price control.

Insights From the Commissioned Reports

To date, SSEN has commissioned two reports as part of the VFES project to help to understand how vulnerability may develop within the SSEN network in the coming years.

Firstly, Machine Learning of Vulnerability Signatures (Smith Institute) uses data analytics to understand what drives vulnerability in each location that SSEN service, finding natural groupings of vulnerability drivers using these results, attaining a mathematically sound and data-driven understanding of the vulnerability landscape across SSEN's areas of operation.

Secondly, Future vulnerability - Lifestyle Driven Scenarios and Emerging Vulnerabilities in the UK Energy Sector (ICL and Futurall) presents foresighting that explores of how lifestyles might change in the future, and how this will shape SSEN's customers' relationships with energy, particularly in the context of how the experiences of their currently vulnerable customers may change, and how new vulnerabilities may arise.

This section aims to summarise the key insights of these reports.

Machine Learning Discovery of Vulnerability Signatures

Summary of Insights

This report uses an analytical approach to create 'groups of vulnerability' in Local Super Output Areas, to understand where different types of vulnerability are condensed across SSEN's network area. The table below shows a summary of the results, including new insight from NEA as to the types of service that may be required to support each cluster. Please note that the 'level of vulnerability' equates to the % of households in the cluster that are signed up to the PSR, not the acuteness of vulnerability.

Group Number / level of vulnerability	Description of Group	Potential service provision required
1 / very high	Tending to be in poorer health and disabled, and with smaller household sizes.	Advice targeted to households with health conditions. Benefits advice (DLA/PIP) Financial support (to achieve highest SROI). Strategic partnerships with disability/health (physical and mental) charities.
2 / high	Large households with relatively few elderly people	Advice on energy use.
3 / high	Tending to be elderly, but with few health issues	Advice tailored to elderly people.
4 / slightly higher than average	Larger elder population levels and moderately higher provision of care. Smaller household sizes.	Partnerships with charities supporting elderly households.
5 / slightly lower than average	Younger, predominantly white populations, with larger household sizes and provision of care.	Advice tailored to younger people. Partnerships with youth charities.

6 / low	Moderately elderly population with slightly higher household sizes, in relatively good health.	N/A
7 / very low	Substantially lower elderly population, less provision of care, but higher level of privately rented dwellings.	Advice specifically for private renters (renters rights re energy including energy efficiency and smart meters).

The analysis also found that:

- Large parts of Scotland and the Southwest of England belong to cluster 3.
- Large parts of London are split between clusters 3 and 6.
- The relationships between LSOAs spatially and their drivers of vulnerability suggest that specific investments may benefit Scotland more so than the South of England. For example, investments that address the underlying drivers of vulnerability in cluster 3 will impact large parts of Scotland and the Southwest of England, but less so central London.

NEA observations on the analysis and insights

The machine learning analysis gives a great deal of insight into the prevalence of different vulnerabilities in LSOAs, and to clusters of similar LSOAs across the SSEN geography. This insight will

From our consideration of the analysis and conclusions presented we have several observations:

1. The machine learning analysis gives a great deal of insight into the prevalence of different vulnerabilities in LSOAs, and to clusters of similar LSOAs across the SSEN geography. This new insight will help SSEN to proactively prioritise activities across different areas in order to maximise the value of their investments, both in terms of infrastructure, but also in meeting the social obligations in the price control.
2. The choice of parameters to build the model is very important and defines how useful the results can be. Care must be taken when choosing these parameters, and they should not be chosen solely based on model accuracy. For example, the choice made between ‘ethnic minorities’ and ‘Unable to speak English well or at all’ has a material impact on what can be said about clusters that include those households. The choice not to include ‘unable to speak English well or at all’ dampens the ability of the model to predict which areas are the best candidates to provide non-English advice to (for example).
3. The analysis presents the proportion of households in each cluster that are already captured in the PSR, not the level of vulnerability of the households in the cluster. This means, for example, that cluster 7 being classed as having ‘very low’ levels of vulnerability does not mean that it should be ignored (private renters are often living in the most vulnerable situations) – it could simply mean that there should be a drive to increase PSR uptake in those areas.
4. While the reasons for the restricted use of ‘air pollution’ as a parameter in the model are clear, it could be a useful element to understand the areas that could benefit the most from low carbon technologies. Overlaying this data on top of the clusters could provide a way to determine the areas that are candidates for LCT advice and provision.
5. While the model/approach is clearly valuable in understanding the areas that could benefit most from investment, there is a risk that relying solely on such a model to do so leaves households behind. If those clusters with the lowest ranking of vulnerability do not receive investment is a high potential outcome. On top of the cluster mapping undertaken in the analysis, there is a need to overlay the services that can be accessed, to identify the gaps in provision and therefore the best value areas for SSEN to invest in.
6. If the clusters also had an element of depth of vulnerability, as well as breadth, they could be useful in determining the areas that would be worst impacted by an outage.

7. Language is important in the presentation of this. Using “vulnerability” as a descriptor of the % of households on the PSR in an area comes with two problems. Firstly, that many households are not on the PSR that are eligible to be, so there is a considerable error built in. And secondly, that the PSR does not capture all types of vulnerability. It does not capture financial vulnerability. This presents a significant risk where the affordability of energy is the root of a significant number of issues for vulnerable households in the energy market.

Future vulnerability - Lifestyle Driven Scenarios and Emerging Vulnerabilities in the UK Energy Sector

Summary of Insights

This report uses foresighting to create different scenarios for energy futures and identify different vulnerabilities that may exist in each of those scenarios. These scenarios and vulnerabilities, as well as some suggestions from NEA as to how a DNO may address these vulnerabilities, are in the table below.

Scenario	Identified Vulnerability that could manifest	DNO mitigation of vulnerability
<p>Mediated</p> <p>In this scenario people have limited control of their individual lives and energy usage.</p> <p>A strong state maximises efficiency and sustainably manages resource consumption across the whole population.</p>	<p>Out of control</p> <p>Maximising efficiency breeds a lack of control. If you can't access the services you need, or protest when things go wrong, it might make people feel frustrated, complacent, and hopeless.</p>	<p>Continued observation of services available across SSEN areas, and provision of relevant services to fill the gaps.</p> <p>Integrate consumer vulnerability into network infrastructure planning.</p>
	<p>Service Misalignment</p> <p>If you can't get the technology or upgrades needed to participate or meet quotas, you fall outside the system. Many energy systems are interdependent but might operate at different speeds and with different metrics.</p>	<p>Consider providing financial support to households that otherwise could not afford to mitigate risk.</p> <p>Ensuring that the DNO side of the equation is as fair and equitable as possible (e.g., connections upgrades)</p>
	<p>Between Definitions</p> <p>If you don't fit the standard template of behaviours, infrastructure, or cognition then everything gets harder. There will always be people who could use extra support or flexible standards but defy definitions</p>	<p>Focus on inclusive design of DNO services to ensure that fewer people are left behind 'between definitions'.</p> <p>Ensure minimum standards of service for everyone.</p>
<p>Responsive</p> <p>In this scenario people are highly reliant on electricity and internet access and have a high degree of control over the services they are provided in a wide open market.</p>	<p>Unmitigated Risk</p> <p>If you can't afford to mitigate risk then you are open to greater anxiety and fluctuation in price and quality of service, at worst preventing access without warning.</p>	<p>Consider providing financial support to households that otherwise could not afford to mitigate risk.</p> <p>Ensuring that the DNO side of the equation is as fair and equitable as possible (e.g., connections upgrades)</p> <p>Integrate consumer vulnerability into network infrastructure planning.</p>
	<p>Rural Disadvantage</p>	<p>Focus efforts to provide support in rural area –</p>

	If you live in a rural area, access to services is more disparate and inefficient. This reduces people's resilience in a world that requires instant adaptation and access.	particularly in the Scottish region.
	Untethered Without meaningful connections, you have no buffer to build resilience and cooperate.	Community projects with trusted third parties to build and expand relationships within communities
Sufficient In this scenario people adopt forced or voluntary simplicity in their day-to-day lifestyles. Consumption has been dramatically reduced as people find resource security in their local communities.	Community Exclusion Many may go without support as groups become more closed and survivalist. If you're new to a community and in search of stability, you may be excluded and cut off.	Community projects with trusted third parties to build and expand relationships within communities
	Urban Disadvantage Limited access to space means you are poorly equipped to generate your own resources, to be independent, or to contribute to and get support from a community.	Focus efforts to provide support in urban areas – particularly in the Scottish region. Ensure DSO services are inclusive.
	Foundational Trust If you are operating without much capacity for error, then much more trust is needed with those you interact with in your energy system. This trust is also more easily broken down and needs to be carefully managed.	Community projects with trusted third parties to build trust with customers.
Collaborative In this scenario people and their local communities control resources and decision making through locally networked and digitally enabled movements. Resources are acquired and shared through an informal economy	Burden of Knowledge People have to manage more information and invest considerable time and effort to coordinate their energy supply. If you don't have the capacity, knowledge gaps and communication challenges will arise.	Provision of information in formats that are easy to understand quickly (and in multiple languages etc)
	Asset Reliant Without something to trade – be it knowledge, space, or resources - people are not able to participate in energy systems.	Consider providing financial support to households that otherwise could not afford to mitigate risk. Ensure DSO services are inclusive (almost everyone has flexibility to trade)
	Relationship Dependent Everything in this system depends on building and maintaining relationships. If you don't have connections, or can't build them effectively, you will be left out.	Community projects with trusted third parties to build and expand relationships within communities

NEA observations on the analysis and insights

From our consideration of the analysis and conclusions presented we have several observations:

1. The insights within this foresighting of different scenario are incredibly valuable to SSEN, providing a robust view of different futures that could take place, and a scenario space within which to plan. For example, the analysis shows that some vulnerabilities are prevalent across all scenarios, showing that there are instances of 'no regrets' work when it comes to mitigating consumer vulnerability.
2. Exclusion from society, in one form or another, occurs in a vulnerability across all the scenarios (as well as existing currently too). While this does not mean that this will be a vulnerability that exists in all futures, it does show the likelihood of exclusion being persistent over the next decades, and therefore the importance in mitigating these risks for households in SSEN's areas.
3. The importance of assets is consistent across both the 'mediated', 'responsive' and 'collaborative' scenarios, where households will become at risk of being left behind if they cannot afford to purchase

(or access to support to purchase) these measures. This could also manifest through the existence, or lack of existence, of a network asset, for example a suitable grid connection.

4. Place based disadvantages occur across both the 'sufficient' and 'responsive' scenarios. This implies that SSEN should continue to take different approaches in different areas and that urban areas (such as in London), and more rural areas (such as the north of Scotland) will need different support, and that the relative level of this support will need to be flexible depending on how the energy system and society develops.
5. Given the risk of being left behind and excluded occurs in all scenarios, getting PSR sign ups becomes more important. Without identification of the most vulnerable groups, SSEN will be less able to provide suitable and tailored support.

Overlaying both reports

The two pieces of analysis complement each other. The Machine learning identifies the areas that may have significant penetrations of certain vulnerable groups, while the scenario modelling can provide some insight as to what these groups may be vulnerable to in the future.

The table below attempts to map the machine learning onto the scenarios to determine which segment of LSOA may be most impacted by the possible future vulnerabilities identified. From this, we can make some observations about how the scenario modelling and the machine learning can work in unison.

Scenario	Identified Vulnerability that could manifest	Machine Learning Segment(s) Most Impacted
Mediated	Out of control	Elderly populations 1,3,4,6
	Service Misalignment	Populations most likely to have a low income and be digitally excluded. 1,2,3,4,5
	Between Definitions	Households more likely to fall through the cracks (small households and PRS). 7
Responsive	Unmitigated Risk	Populations most likely to have a low income. 1,4,5
	Rural Disadvantage	Difficult to say because of lack of rural identifier. ?
	Untethered	Households more likely to fall through the cracks (small households and PRS). 7
Sufficient	Community Exclusion	Households more likely to fall through the cracks (small households and PRS). 7
	Urban Disadvantage	Difficult to say because of lack of urban identifier. ?
	Foundational Trust	Trust is likely to be an issue across all types.

		1,2,3,4,5,6,7
Collaborative	Burden of Knowledge	Households with less time (carers) and those who are less likely to speak English as a first language (ethnic minorities). 1,3,4,5,6
	Asset Reliant	Populations most likely to have a low income. 1,4,5
	Relationship Dependent	Households more likely to fall through the cracks (small households and PRS). 7

NEA observations on the analysis and insights

1. The scenario foresighting shows that there one group of householders that could be particularly vulnerable in the future energy market are those with fewer community relationships. It is likely that this could manifest itself through living alone, or in small household sizes. This is not a group that is identified in the machine learning, or through the PSR (and in fact, the machine learning counts those households as a negative factor on whether an LSOA has a high vulnerability).
2. Domestic assets such as low carbon technologies seem to be very important in the future, and those without access to these assets are at risk of becoming vulnerable in a future energy market. However, it difficult to understand the clusters that would benefit the most from this in the machine learning because the data it is using (the PSR), does not record financial vulnerability in any of its needs codes.
3. Similarly, throughout several of the identified potential vulnerabilities in the future, there is a common theme of the household having a lack of time/capacity. Beyond the carers element, it is difficult to reflect these in the clusters, because it is not something that is fully considered within the PSR needs codes.
4. For the vulnerabilities that will have a significant impact on several clusters, the solutions may need to be different for different clusters. For examples for the vulnerability 'burden of knowledge' where clusters are impacted because of a language barrier, the mitigation is more likely to be translated documents. Where clusters are impacted because of time, support given that gets across information without using up too much time would be a more suitable mitigation.

Mapping the Insights to Regulatory Frameworks

For the insights above to be meaningful to SSEN in their delivery of the business plan, it is important to map them to the different elements of the price control (details in Annex 1), and to provide some rationale as to why they are important for SSEN to consider. The table below looks to provide a summary of this mapping.

Aspect of price control	Relevant Insight	Rationale
Vulnerability	Prioritising those that are excluded from society, for example those that do not speak English and those that live alone.	The SSEN vulnerability strategy has five key principles, one of which is to 'use data to deliver tailored support'. This new data clearly shows that focusing on these groups would be valuable.
	Focus on carers through tailored work and new partnerships.	The strategy also has a focus on partnerships, which leads itself to finding key partners for each of these groups
	Continue with different approaches for different areas	Key elements of the vulnerability strategy are "understanding the needs of our customers" and "Using data to deliver tailored support". This work clearly identifies different needs in different areas, and support should therefore be tailored to these needs.
	Prioritising helping low-income customers to fund the purchase of assets	The work has identified a clear need for low-income households to have help to purchase key assets. Tailoring support in this way is aligned with the vulnerability strategy
	Driving PSR uptake, particularly in cluster 7	The model shows that LSOAs in cluster 7 have low PSR uptake, but some of the identifiers signal a level of high vulnerability to future scenarios. SSEN should therefore proactively look to identify the most vulnerable households in these clusters.
Network Innovation Allowance	Tuning the model with the right choice of parameters.	While the machine learning has been incredibly useful, there are elements that could be tuned to ensure that it is as useful as it could be for targeting support and schemes in the right areas, for the right reasons.
	Tuning the model away from PSR% and towards the outcomes of vulnerability (i.e., understanding depth of vulnerability as well as depth)	
	Overlaying air pollution into the model	Overlaying data on air pollution and the current service provision (both SSEN

	Overlaying service provision on to the model	and external) could help to identify the areas that most need support from SSEN, and where support could add most value.
	Understanding the vulnerability of smaller household sizes	Currently in the model, smaller households are classed as low vulnerability (as they have low PSR uptake). However, intuitively smaller households are likely to have higher levels of vulnerability. They are less likely to have strong close relationships, something that leads to being vulnerable in all scenarios. Doing more to include this as a vulnerability in the machine learning model could prove fruitful in targeting the most vulnerable customers in future price controls.
	Understanding how priorities may change under different scenarios for outages.	While the scenarios considered several vulnerabilities, this part of the analysis was not exhaustive. Understanding in each, which type of household may be most vulnerable in an outage would be useful in future price controls to deploy resources most effectively.
DSO	Consumer vulnerability and less resilient communities should be factored into network infrastructure investment	In some scenarios, there are vulnerabilities that can be especially exposed by a lack of network infrastructure. This will fall into the DSO element of SSEN's business as it is a strategic decision on the build out of the network.
	Using the clusters and scenarios to target clusters for SCMZs	Some clusters seem to be prime candidates for SCMZs, which SSEN have trialled in the past. Whether these clusters have constraints should be investigated. If these constraints exist, these clusters should be considered for SCMZs

Recommendations for SSEN

Building on the insights captured by the reports, as well as the mapping of these insights onto the different aspects of the business plan, we can make some recommendations on how SSEN could adapt its operations based on the learnings from this innovation project, across its work to address vulnerability, the next steps for the work through the innovation allowance, and the DSO operations of the business.

Improving work to address vulnerabilities in the SSEN areas

Recommendation 1 – Use the cluster modelling to prioritise areas with a high proportion of households that are likely to be excluded from society.

The scenario foresighting clearly indicates that across all scenarios, there are likely to be energy vulnerabilities associated with 'being left behind'. Three major reasons that people may be left behind, or left out of communities are not being able to speak English as a first language, not having time to digest information and having fewer relationships within the community.

To mitigate this vulnerability, SSEN should:

- a) Target clusters with significant proportions of ethnic minorities for new partnerships as well as specific advice provision in relevant languages.
- b) Target clusters with a high proportion of carers (who have less time to engage), with easy to access resources that do not take time to take in. Partnerships with local carers agencies in these areas may also be fruitful for engagement.
- c) Target clusters with a higher proportion of smaller households, who are the most likely to have fewer community relationships, with community events to bring more people into the community, to help broaden engagement, widen participation, and extend relationships.

Recommendation 2 – Continue with different approaches for different areas

The machine learning model shows clear differences in vulnerability make up between different LSOAs and regions, and the scenario modelling identifies that different challenges will be faced by different localities, particularly depending on whether they are more urban or more rural.

This validates the approach that SSEN has already set out in its vulnerability strategy and therefore SSEN should continue to tailor their approaches to the needs of different communities across geographies.

Recommendation 3 – Prioritising helping low-income customers to access energy assets for their home.

In each of the scenarios, vulnerabilities arise within households that do not have access to assets. This could be a network asset (see recommendation 8), or assets in the home such as a battery, heat pump, electric vehicle, or any other low carbon technology. NEA's own experience shows that it is low-income households that are the least likely to be able to afford having these assets at home. While SSEN does not have a duty, or available funding to help with this problem directly, they can play a role in signposting to available funding and removing barriers to uptake through advice and signposting.

SSEN should therefore prioritise helping low-income customers to access energy assets for their home, through:

- a) Funding, where possible, capital measures for low-income households to increase access to relevant assets.
- b) Funding advice to signpost low-income households to schemes that can help them to access funding for relevant assets.

Recommendation 4 – Driving PSR uptake, particularly in cluster 7

The scenario modelling presented potential vulnerabilities associated with having fewer relationships with the local community. It is likely that this group will include many people that live in small households, especially those living alone (and especially when this is coupled with being elderly). The machine learning analysis, however, showed that there is a negative correlation between lower household sizes, and PSR uptake.

Therefore, to identify some of the households most at risk of having a lack of local relationships, there should be a concerted effort to drive PSR uptake, particularly in cluster 7 LSOAs, which have a high penetration of small household sizes.

Recommendation 5 – Ensuring identification of small household sizes

While the PSR captures many of the relevant aspects of vulnerability that the scenario modelling identifies, in some areas, there are shortfalls. This is particularly true of those living in small household sizes, which is not captured through the existing PSR needs codes.

SSEN should therefore look to broaden the identification of vulnerability these households. This could be done through advocating for different PSR needs codes.

Recommendation 5 – Ensuring identification of financial vulnerability

Another element of vulnerability that is not currently captured systematically is those households that are financially vulnerable. This type of vulnerability has been hugely exposed in the cost of living crisis, and is arguable the most acute way through which a household could be vulnerable to negative consequences in the energy market.

SSEN should therefore look to broaden the identification of vulnerability to those with a low income. This could be done through advocating for different PSR needs codes, or unilaterally through its own, separate identification. However, whichever route is taken, there needs to be an effort to share data between energy networks and energy suppliers. Ensuring supplier buy-in is especially important, as it is that part of the value chain that holds the most information on whether a household can, or cannot afford their energy bill.

Potential next steps for VFES in the Network Innovation Allowance

Recommendation 7 – Tuning the Model

While the machine learning has been incredibly useful, there are elements that could be tuned to ensure that it is as useful as it could be for targeting support and schemes in the right areas, for the right reasons. It is important that parameters are used based on the outcomes that cause a vulnerability (for example the ability to speak English), not a proxy for this outcome (ethnicity).

Additionally, while the alignment of the model with the PSR uptake has significant advantages relating to targeting the marketing of the PSR in certain areas, it has disadvantages in providing useful insight on the depth of vulnerability in areas, as it can only measure the breadth. A measurement of depth would provide more insight as to exactly where to target as a priority.

SSEN should therefore look to tune the model in the next phase of this work, with a focus on the outcomes that cause a vulnerability, and the depth of such a vulnerability.

Recommendation 8 – Overlaying other data on to the model

While the machine learning model is useful, its value could be maximised by overlaying separate data sets to enrich the insights that can be gained from it. The report itself mentions air quality, which could have a significant impact on the depth of certain vulnerabilities (for example for young children). Additionally, it would be useful to overlay the existence of services that can support vulnerable households, to understand which clusters with a high proportion of certain vulnerabilities are currently being underserved.

SSEN should look to overlay more data sets on to the model to seek out richer insights from the model results in the next phase of the work.

Implications for SSEN's DSO operations

Recommendation 9 – Consumer vulnerability and less resilient communities should be factored into network infrastructure investment

As in recommendation 3, each of the scenarios, vulnerabilities arise within households that do not have access to assets. While recommendation 3 looks to mitigate the instances where this is an asset in the home, it could be the existence of a network asset, for example a suitable grid connection. This could present barriers in two ways. Either there could not be the asset there to support the household in their energy needs

(especially if they want to take up a heat pump or a battery), or there could be an associated cost to the household of getting the required heat pump.

SSEN should therefore prioritise helping low-income customers to access energy assets for their home, through:

- a) Ensuring that consumer vulnerability and less resilient communities should be factored into network infrastructure investment.
- b) Removing financial barriers to connections, such as deep connection costs for low-income households.

Recommendation 10 – Using the clusters and scenarios to target clusters for SCMZs

Some clusters could benefit from an SCMZ, and that this could be particularly useful in some scenarios. Where these clusters have network constraints, SSEN should consider them as candidates for running further SCMZs, where this is an economic action to take.

Annex 1 - Addressing Vulnerability in RIIO-ED2

In the Sector Specific Methodology Decision (SSMD) for RIIO-ED2¹, Ofgem strengthened the new price control, in comparison to RIIO-ED1, with regards to supporting network activities to address consumer vulnerability. The table below summarises the different aspects of the SSMD that could be important to NPg's plans to address vulnerability.

<p>Vulnerability Strategy and Vulnerability ODI</p>	<p>A requirement on DNOs to have a vulnerability strategy that sets out the activities they will undertake to deliver positive outcomes for consumers in vulnerable situations. This must focus on households with a vulnerability to a loss of supply; being in, or at risk of, fuel poverty; and those at risk of being left behind by the energy system transition towards Net-Zero. A strategy is a requirement for stage one of the business planning incentive.</p> <p>Alongside this, an ODI for vulnerability will reward DNOs for the delivery of their strategy up to a maximum of 0.5% of base revenue. DNOs could be penalised by up to 0.5% of base revenue for failing to meet the vulnerability baseline standards (see below).</p>
<p>Vulnerability Licence Obligation</p>	<p>Introduction of an overarching principles-based licence obligation on DNOs to treat their customers fairly, including those in vulnerable situations, throughout their operations. This LO will be comparable to Condition 0 of the Gas and Electricity Supply Licences and the LO introduced in RIIO-GD2 (SSC D21)². The existing licence condition requiring DNOs to hold and maintain a PSR and provide support in a supply interruption will be retained.</p>
<p>Vulnerability baseline</p>	<p>Ofgem have introduced a new baseline of activities relating to addressing vulnerability that DNOs must meet to access a positive outcome of the vulnerability ODI. If DNOs fail to meet this baseline, they could face a penalty of up to 0.5% of their base revenue.</p>
<p>Network Innovation Allowance</p>	<p>In RIIO-ED2, the Network Innovation Allowance (NIA) will be retained but will be refocussed. NIA funding will be reserved for projects related to the energy system transition and addressing consumer vulnerability.</p> <p>Additionally, there will be a new requirement for NIA projects to undertake an impact assessment of their effects upon vulnerable consumers.</p>
<p>Energy Efficiency Licence Obligation</p>	<p>DNOs will have, from the end of this year, a licence condition to promote the uptake of energy efficiency measures where this cost effectively alleviates the need to upgrade or replace electricity capacity. This will continue through RIIO ED2.</p>
<p>DSO baseline</p>	<p>There is a requirement in the DSO baseline (which works similarly to the Vulnerability Baseline, in conjunction with a DSO ODI), for DNOs to consider how to adapt stakeholder engagement to reflect the needs of their customers in vulnerable situations.</p>

¹ RIIO-ED2 Sector Specific Methodology Decision, Ofgem, December 2020 <https://www.ofgem.gov.uk/publications-and-updates/riio-ed2-sector-specific-methodology-decision>

² See Annex 1 for draft licence drafting of the new Vulnerability LO for GDNs.