Best View Scenario Description

Open Networks
WS1B Product 2

December 2021 | Version 1

DOCUMENT CONTROL

Authorities

Version	Issue Date	Authorisation	Comments
1	28/10/2021	WS1B	
2	18/11/2021	Steering Group	Approved

Contents

Introduction

About ENA

Energy Networks Association (ENA) represents the owners and operators of licenses for the transmission and/or distribution of energy in the UK and Ireland. Our members control and maintain the critical national infrastructure that delivers these vital services into customers' homes and businesses.

About Open Networks

Britain's energy landscape is changing, and new smart technologies are changing the way we interact with the energy system. Our Open Networks project is transforming the way our energy networks operate. New smart technologies are challenging the traditional way we generate, consume and manage electricity, and the energy networks are making sure that these changes benefit everyone.

ENA's Open Networks Project is key to enabling the delivery of Net Zero by:

- opening local flexibility markets to demand response, renewable energy and new low-carbon technology and removing barriers to participation
- providing opportunities for these flexible resources to connect to our networks faster
- opening data to allow these flexible resources to identify the best locations to invest
- delivering efficiencies between the network companies to plan and operate secure efficient networks

1. Background

Network planning and development plays an important role in ensuring the electricity network infrastructure is ready for future challenges. Electrification of heat and transport sectors in the form of heat pumps (HP) and electric vehicles (EV), connection of distribution energy resources, or participation of flexibility services are some of the expected challenges.

The DNOs produce and publish Distribution Future Energy Scenarios (DFES), which are long-term forecasts of local demand and generation that inform network planning. The developed network plans based on DFES are published in Long Term Development Statements (LTDS) focusing on a 1 to 5 year horizon. Recently Ofgem has introduced a new license condition (SLC 25B) requiring DNOs to produce Network Development Plans (NDP) that go beyond the short term horizon of LTDS. Similarly to LTDS, the NDP will also use DFES to inform network planning.

2. Objective

This document proposes the production of a Best View scenario by DNOs that can be used together with the other DFES scenarios to produce NDP and inform other network planning and reporting processes, eg LTDS.

The main difference of Best View scenario with the other DFES scenarios is that it will focus on high certainty in a 1 to 10 years horizon. As a single scenario that reflects highest certainty, the Best View scenario can:

- provide clarity and remove the complexity of multiple scenarios. This will help stakeholders understand local demand and generation trends over the short-term
- provide the highest certainty basis for assessing network impact and the need for interventions
- support an optimal Network Development Plan together with:
    - other network factors including asset health condition
    - all other DFES scenarios that have equal/lower certainty than “Best View” and can provide more insights on the uncertainty range in the >10 years horizon.

It is worth highlighting that the WS1B Product 2 working team has focused solely on the development of the best view scenario, while the application of this scenario in informing NDP will be developed by WS1B Product 5.

3. Best View Scenario

Regarding its guiding principles, the Best View scenario should:

- be well understood through a transparent development methodology
- not allow a broad interpretation, but instead be well defined through an associated methodology that justifies it as the highest certainty scenario among all other DFES
- be consistent with wider scenario methodologies.

The proposed Best View scenario development methodology:

- incorporates the above mentioned guiding principles
- builds on the current DFES methodology
- is open to encourage improvements through decentralised thinking and competition across DNOs in developing and sharing learnings and methodologies
- considers opportunities to explain regional sensitivities and justify the “best view” forecast of the future
- is building on Ofgem’s RIIO-ED2 guidance and Load Related Expenditure (LRE) framework
- reduces subjectivity, for example by aligning with Scottish government draft framework for devolved regional and local (DRL) planning. The “Best View” scenario can comply with this framework and therefore evidence is required on
- how local plans will be financed and that relevant government will use policy levers in the way required

- ascertaining that stakeholders involved in local plans acknowledge and accept actions to deliver the plan
- ensuring that local plans start from true reflection of the system today
- justifying that local plans are deliverable with credible timescales.

4. Proposal

The Best View scenario is defined as the highest certainty scenario across all other DFES scenarios, focusing in specific on certainties that can be justified in a 1-10 year horizon acknowledging that longer term forecasts can be more uncertain. To produce the Best View scenario, each forecast building block needs to be checked against three categories as shown in Fig. 1 to justify that the developed scenario reflects the highest certainty for the region.

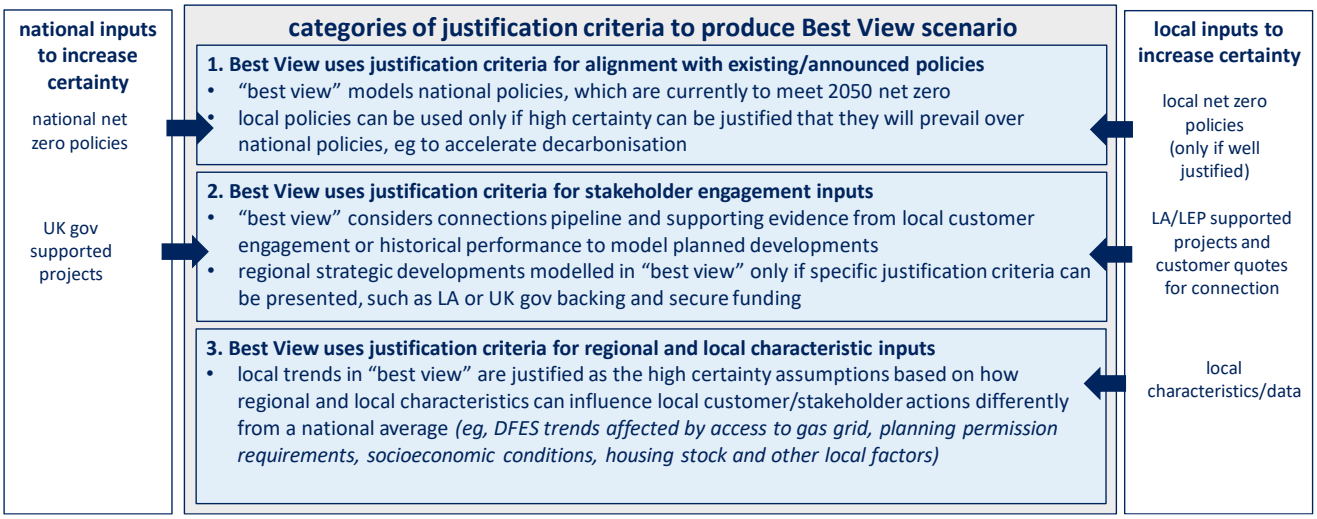


Fig. 1. The three categories of justification criteria to produce the Best View scenario

Category 1. Alignment with existing/announced policies

Best View scenario models national policies including existing and announced legislation and UK government policy. For example, these can be policies to meet net zero by 2050 including:

- UK government policies on the decarbonisation of transport, e.g., ban on sales of new internal combustion engine vehicles by 2030 and plug-in hybrid electric vehicles by 2035
- UK government policies on the decarbonisation of heating, e.g., not allow the use of gas boilers in new houses post 2025
- any other national policies announced as planned by UK gov (not declared ambitions), e.g., to meet the interim 2035 decarbonisation target and the net zero 2050 target.

Local Authority (LA) policies can be used in Best View scenario only if they prevail over national policies and high certainty can be justified. For example, high certainty for local policies that support early, i.e., before 2050, net zero carbon can be justified for:

- existing/announced LA air quality policies
- existing/announced LA policies to incentivise the decarbonisation of heating and transport
- justification through modelling that local policies can influence local stakeholder/customer decisions and speed up decarbonisation. Ways to provide this justification: produce or reference work (e.g., CCC/FES) that uses surveys, consumer choice modelling, historical analysis or any other widely accepted methodology to quantify impacts.

There might be local net zero policies that accelerate decarbonisation provide high certainty. If these policies cannot be justified, they should not be considered in Best View scenario, despite of being considered in other DFES scenarios. Examples of cases where such policies cannot be justified are declared LA early net zero targets not followed by policies enforcing and/or incentivising local stakeholders and customers to take actions and decarbonise faster than if they would just follow national policies.

Studies for Local Area Energy Plans (LAEPs) or other works that inform LA action plans to accelerate decarbonisation might include ambitious pathways to meet early net zero targets. These pathways are expected to inform LA action plans and should be reflected in DFES scenarios. However, they should not be considered as part of the high certainty "Best View" scenario, unless there is evidence that justifies they could be considered as mature planned developments.

Category 2. Use of justified stakeholder engagement inputs

Customer engagement reflected in the connections pipeline is included in the Best View scenario using justified approaches with supporting evidence. Ways to justify these effects could be for example the different approaches to assess the likelihood of projects to energise and realise contracted capacity:

- consider analysis of historical performance to demonstrate likelihood of energisation for projects in the "queue"; or,
- consider project specific information such as ongoing development progress and financial cash flows to demonstrate likelihood of energisation; or,
- if there is lack of evidence, it needs to be explained why the modelling assumptions are typically average and within the range that other DNOs have considered and how these compare with more unlikely/extreme used in the other DFES scenarios.

"Best View" scenario considers only justified regional & local developments. For example, based on the criteria of the Scottish gov draft framework for DRL planning that describes the evidence required for stakeholder engagement inputs in local plans. Taking into account this framework and focusing on applying its guiding principles on specific justification criteria for distribution network planning, the following planned developments can be evidenced and modelled in "Best View" scenario:

- planned development being part of UK gov funded projects
- planned development being supported financially by LA/LEP (local authority / local enterprise partnership) programmes
- planned development being part of LA planned developments, e.g., regeneration areas and garden villages
- planned development having ongoing development progress
- planned development with secure funding from the private or wider public sector.

Category 3. Use of local characteristic inputs.

Best View scenario considers local characteristics to justify high certainty actions of local customers and stakeholders.

For example, consideration of the following with supporting evidence can be used to justify the Best View scenario modelling and forecasting trends / outputs:

- EV charging modelling
    - need to consider the local potential for the different types of charging. This can be evidenced by a range of one or more factors including but not limited to: a) existing and planned EV chargers and associated capacity, b) local access to off street parking, c) travel patterns/traffic flow data
    - need to consider local/regional socioeconomics or existing EV registrations to justify areas of first adopters
    - in the absence of local information, the EV charging modelling should be justified that it is following a national average (see last page), e.g. using FES/CCC scenarios allocated per region to demonstrate it
- heat pump modelling

    - needs to consider interdependencies with local access to gas grid, e.g. showing that first heat pump adopters are away from these areas in case that LA
    - needs to consider the local building stock and consequent heating demand characteristics
- efficiency modelling (smart EV charging, smart meter roll out and ToU tariffs, improvements on building insulation etc)
    - regional socioeconomics need to be considered to justify the likelihood of local customers to invest on efficiency measures
- DG and battery storage
    - renewables: availability of land for renewables need to be justified, e.g., taking into account local planning permission issues, national park areas etc
    - headroom of local network capacity needs to be considered to justify local trends of installed DG and grid-scale battery capacities.

5. Appendix: DNOs one-pager description

This appendix contains the one-pagers produced by each DNO describing how they will follow the proposed methodology to produce their Best View scenario in DFES 2021. Across all DNOs, the Best View scenario will be their high certainty scenario. All DNOs will also apply robust justification criteria.

It should be noted that the one-pagers have been copied from the original DNO format and can be lengthier than a page in this document.

Electricity North West (ENWL)

The table below summarises how the "Best View" scenario will be produced and included in our next DFES by checking the evidence against three categories of justification criteria to produce each forecasting component. Similar to our other DFES scenarios, evidence and inputs to the forecasting process (eg, existing policies) will be gathered by June every year ahead of the December publication of DFES. In accordance with our ATLAS[1] methodology, the granularity of forecasting inputs will be from local authority level (eg, for local policies) down to postcode data (eg, for heating demand of domestic and non-domestic building stock) aiming to reflect regional variances and help us understand impact on each part of the network.

To increase both the certainty and transparency we will produce our Best View scenario based on the ATLAS forecasting methodology. This means that bottom up and consumer choice modelling with widely accepted and referenced inputs (eg, DfT vehicle stock projections) will be used to forecast volumes of LCT uptakes including renewable generation.

Our Best View scenario shall differentiate from our other scenarios by only considering factors that we are certain about through our verification of their assured impact or guarantee to proceed. The examples tabulated here are examples of current evidence which shall be updated for next DFES.

Categories of the Justification Criteria	High level application of justification criteria for Best View
Category 1: existing/announced policy	• EVs – reflect national policies for 2030 ban for ICEs and 2035 ban for PHEVs and local policies such as clean air zones • heat pumps – reflect national policies, eg post 2025 ban of gas boilers on new buildings • renewable generation – reflect existing / announced policy incentives, eg CfDs, capacity market revenues, removal of tariffs etc

[1] Architecture of Tools for Load Scenarios (ATLAS) NIA project. Online: www.enwl.co.uk/atlas

Categories of the Justification Criteria	High level application of justification criteria for Best View
Category 2: stakeholder engagement inputs	• EHV demand connections pipeline – project specific evidence including payments process, acceptance from customer • HV and LV demand connections pipeline – use of confidence factors based on analysis of historical performance to estimate percentage of quoted projects energised and peak demand met compared to contracted capacity • strategic developments – major developments with secure funding, strong backing from central/local government and/or ongoing development, eg, garden villages, regeneration areas • DG and battery connections – only accepted connections modelled, longer energisation period to capture accepted connections that withdraw and new ones coming in the same area
Category 3: regional/local characteristic inputs	• EVs – use of local charging profiles from REFLECT NIA project that model local characteristics, eg, access to off-street parking, travel patterns etc • heat pumps – modelling local access to gas network and heating demand of actual building stock • renewables/batteries – land availability for renewables, available capacity headroom of local network • efficiency / DSR – consideration of regional socioeconomics for efficiency related customer investment (eg retrofit), regional deliverability (eg, availability of technical skills), smart EV charging based on local mix of EV charging locations and capacities

Using "Best View" scenario:We will use our Best View scenario when preparing our LTDS, Week 24 submissions and best view Network Development Plan (NDP). The Best View scenario will provide high certainty trends up to 10 years horizon, so can be used to report forecasts in our Week 24 (8 years) and LTDS (5 years) where a single scenario is required and this also simplifies stakeholder utility. To ensure that our load related interventions are considerate of future uncertainties and do not foreclose net zero transition, we consider more scenarios from DFES when evaluating and planning the network developments that we share in the LTDS and the NDP which considers a 10 years horizon.

Importantly, long term uncertainties around the electrification of a) heating, b) industrial processes and c) heavy duty vehicle transport can show significant differences from what can be justified and modelled in the Best View scenario.

Northern Powergrid (NPg)

Northern Powergrid will produce a best view scenario for DFES going forwards that satisfies WS1B P2's agreed methodology for producing a best view. It will be based on a selection of uptake scenarios from the range of scenario worlds in use nationally – National Grid FES 2021 and the Climate Change Commission scenarios in the 6th carbon budget. It will be developed by taking into consideration Government policy, stakeholder feedback, and the regional characteristics of the network, thereby aligning it to the WS1B P2 criteria:-

- Criteria 1. Best View uses justification criteria for alignment with existing/announced policies
- Criteria 2. Best View uses justification criteria for stakeholder engagement inputs
- Criteria 3. Best View uses justification criteria for regional and local characteristic inputs

The best view scenario communicates to DFES users what we consider to be the highest certainty scenario across all other DFES scenarios, focusing specifically on certainties that can be justified in a 1-10 years horizon acknowledging that longer term forecasts can be more uncertain. Thus the best view scenario is not the same as a company business plan which of course does consider uncertainty across the scenario range.

To produce the "Best View "scenario , each building block is checked against the three criteria to justify that the developed scenario reflects the highest certainty for the region.

WS1B P2 Criteria 1. Best View uses justification criteria for alignment with existing/announced policies
We will consider developments which happen after the publication of the FES 2021 scenarios, favouring the use of newer uptake scenarios. These will be aligned with the latest Government policy particularly in relation to EVs and

heat pumps. For example the following table describing Northern Powergrid's current understanding of latest policy assumptions will be reviewed in line with further policy developments:-

Key building block	Assumptions on latest policy
Electric vehicle uptake	• In line with the Government's Ten Point Plan, it assumes a ban on the sale of new Internal Combustion Engines (ICEs) by 2030 and includes a ban on hybrids by 2030
Heat pump uptake	• In line with the CCC's Balance Pathway scenario, it meets the Government's Ten Point Plan targets of 600,000 heat pumps being installed annually in the UK by 2028 • It assumes a ban on the sale of new gas boilers from 2025
Energy efficiency	• Domestic thermal efficiency is assumed to be moderate. Appliance efficiency assumptions meet current EU targets for 2030 • I&C energy efficiency is aligned to EU energy efficiency targets
Renewable energy sources	• Solar PV assumptions based on high large solar uptake and high domestic PV take up reaching 1013 MW by 2030 and 2146 MW by 2050 • Wind assumption supported by recent wind turbine sizes and behaviours reaching 748 MW by 2030 and 2015 MW by 2050

WS1B P2 Criteria 2. Best View uses justification criteria for stakeholder engagement inputs
The Best View Scenario will incorporate stakeholder engagement on DFES 2019/2020. This means we will reflect what we have heard from local stakeholders about the desire to facilitate an accelerated decarbonisation pathway, as evidenced by the local area energy plans and targets for different LEPs (Local Enterprise Partnerships). It will also include our accepted connections pipeline and regional strategic plans developed through national projects like Project Rapid for motorway service based EV charging.

WS1B P2 Criteria 3. Best View uses justification criteria for regional and local characteristic inputs
These scenarios are largely modelled bottom-up to reflect the Northern Powergrid network and customers with the best possible geospatial resolution and accuracy. We will use our load growth model developed with Element Energy to allocate DG and LCT uptake geospatially to our network and region.

Scottish Power Energy Networks (SPEN)

In addition to the 4 DFES scenarios, SPEN produce a Best view "Baseline" scenario. Our range of scenarios takes into consideration the ESO's FES (which we use as a starting point) and other industry scenarios (including the CCC 6th carbon budget scenarios). They include legislated targets and consider emerging energy policy, feedback we have received from stakeholders, and granular regional inputs and characteristics.

Our Baseline scenario is set to achieve Net Zero, including interim targets and devolved government policies and is set toward the low end of the Net Zero compliant scenario range. This means we have a high confidence that LCT uptakes will be at least this level to achieve Net Zero. This enables us to undertake network assessments and investment plans on scenarios which represent the best approach for our customers – this is the minimum investment needed to enable Net Zero. If actual uptake levels are greater than our Baseline, we will use uncertainty mechanisms within the RIIO2 framework to address the difference.

In setting our Baseline scenario we incorporate the justification criteria as defined in ON WS1B P2:

- Category 1: Justification criteria for alignment with existing/announced policies.
- Category 2: Justification criteria for stakeholder engagement inputs.
- Category 3: Justification criteria for regional and local characteristic inputs.

We will continue to reflect categories 1, 2, and 3 feedback into our DFES scenarios and our Baseline scenario.

Category 1: Alignment with existing/announced policies
This range of Net Zero compliant scenarios meets UK and Scottish Net Zero legislation, the requirements of the UK Government's Ten-Point Plan and Energy White Paper, and the Scottish Government's Update to the Climate

Change Plan and Heat in Buildings Strategy. Our Baseline scenario will also consider emerging policy and thinking as it becomes available.

	UK	Scotland	Wales
Net Zero target	2050	2045	2050
% GHG emission reduction target	68% by 2030, 78% by 2035.	75% by 2030, 90% by 2040.	Avg. 58% (2026-2030) 63% by 2030, 89% by 2040.
EV targets	End the sale of new petrol and diesel vehicles by 2030 (hybrids by 2035).		
Heat targets	Install 600,000 heat pumps every year by 2028.	By 2024 all new homes must use renewable or low carbon heat. By 2030, around 50% of buildings will need to convert to low or zero carbon heating.	All new homes built in Wales built should be heated and powered from clean energy from 2025.
Renewable generation targets	40GW offshore wind, 1GW floating offshore wind by 2030. Up to doubling the renewable energy capacity in the next CfD.	50% of energy consumption by 2030, almost 100% of energy consumption by 2050. An increase by 30% in the productivity of energy use across the Scottish economy by 2030.	70% renewable by 2030 (set in 2017) 22.5 GW of renewable power by 2025 (from 2013).

Category 2: Stakeholder engagement inputs:

- Our Baseline scenario incorporates well-justified stakeholder evidence and feedback to capture regional requirements. Stakeholder feedback is used to inform: the timing/level/location of LCT uptake; the underlying factors which affect the forecasts; and to influence the weighting we ascribe to different scenarios during our network analysis. Feedback is reviewed and only included where sufficiently justified based on substantiated evidence, level of consensus and stakeholder ability to influence the metrics.
- We will continue to work alongside local authorities to incorporate their latest thinking and provide support in the development of their Local Heat and Energy Efficiency Strategies (LHEES) and Local Area Energy Plans (LAEP), as part of our Strategic Optimiser role.

Category 3: Regional and local characteristic inputs:
Our Baseline incorporates the granular outputs of our innovation projects (EV-Up, Heat-Up, PACE), new connection projects that are in development and a review of the contracted project pipeline against progression criteria such as project design, submission and granting of planning, project finance, past or recent connection requests, or commencement of delivery.

Scottish and Southern Energy Networks (SSEN)

Our approach to creating a Best View scenario follows a two-step process:

1. **Develop DFES**: Undertake (annual) process to generate multiple, credible scenarios based on the ESO FES; taking account of robust evidence from within our regions, and

2. **Local scenario selection and adjustment**: Gather input from stakeholders (predominantly Local Authorities) on the 'best fit' or most likely DFES scenario for that locality. The combination of selected scenarios is used to develop our Best View scenario for planning purposes.

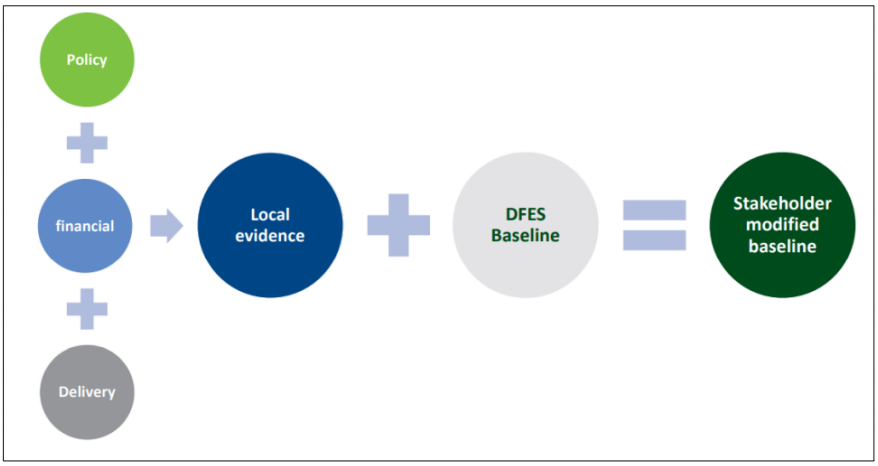
It is worth noting that the details of this process are under continual improvement to enable us to project a realistic scenario.

Step 1: Develop DFES

The Annual DFES is co-created with our stakeholders. Over the near term the DFES projections are heavily influenced by the pipeline of projects and new developments that can be identified in the planning system, SSEN's connection database and by direct discussion with developers and stakeholders. The DFES aims to capture technology-specific geographical factors; generation, storage and LCT projections – largely based on data and evidence analysis. Over the medium and longer term the projections tend to reflect the underlying scenario assumptions and degree of certainty supported by regional and national policies.

Step 2: Local scenario selection and adjustment

To further enhance the scenario modelling, and to allow stakeholder engagement to continue, we invite and encourage Local Authorities to consider the results of the DFES projections and provide further input and refinement. This enable the scenarios to be adjusted to capture local aims, strategic ambition and community targets. This is used to create a *modified baseline scenario*. This process is shown below:



The relevant data for each Local Authority (LA) is provided with a request for LAs to 'self-select' the scenario which best represents the local view of the most likely projection for four of the most impactful low carbon technologies. The selected scenario must be sufficiently evidenced in policy ambition, financial support, and delivery commitment, with each being assessed in accordance with an open and transparent evidence assessment framework. The detail of these evidence and their justification criteria for the key building blocks are presented in the Table below:

Categories of the Justification Criteria	High level application of justification criteria for Best View
Category 1: existing/announced policy	• EVs – 1)The national policy decision to bring forward the ban of the sale of new petrol and diesel vehicles to 2030 in England and 2032 in Scotland. 2)Governmental funding to accelerate uptake of EVs • Heat pumps – 1)The central and devolved government policy focusing on decarbonisation of off-gas homes .2)The UK Government's commitment to install 600,000 heat pumps a year by 2028. 3)The Scottish Government's commitment to heat at least 50% of Scotland's building stock using zero emission systems by 2030. • Renewable generation – reflect existing / announced policy incentives, eg CfDs and capacity market revenues
Category 2: stakeholder engagement inputs	• EHV demand and large HV connections pipeline (contracted schemes) – project specific evidence including local planning approval, payments process, project timescale and electrical work progress • Small HV and LV demand connections pipeline – captured through associated building blocks within the forecast such new residential, commercial, or industrial customers • DG and battery connections pipeline (contracted schemes) – project specific evidence including local planning approval, payments process, project timescale and electrical work progress

Categories of the Justification Criteria	High level application of justification criteria for Best View
Category 3: regional/local characteristic inputs	• EVs – 1)Use of ESO FES 2020 relevant building blocks for each GSP as the framework for future projections. 2)The spatial distribution of EV cars in the near term is based on affluence, rurality, existing vehicle baselines and the distribution of on and off-street parking. 3)A wide variety of datasets are also used to analyse specific regional and HV feeder specific demographic and technical attributes and geographical characteristics such as the distribution of houses with on and off street parking and their associated vehicles, SSEN connectivity data to identify the number of houses associated with a feeder, and a combination of DfT, EPC, Census and Ordnance Survey data. • heat pumps – 1)The baseline is constructed from a combination of EPC and RHI data, aiming to capture heat pump installations that were not accredited for the RHI scheme. 2) A wide variety of datasets is also used to analyse regional and HV feeder specific demographic, technical attributes and geographical characteristics. For example, the key spatial and household characteristics used in this study for the uptake of heat pumps was information on gas network connectivity, household information evaluated from EPC data, affluence and home ownership. This data is available from MHCLG, Census, BEIS and ONS • Renewables/batteries –1)Large-scale solar PV capacity is distributed to developable land area, based on Regen's large-scale solar PV resource assessment. This considers irradiance, designated land areas, physical constraints, network proximity, ground slope and aspect and proximal buildings. 2) for Batteries is proximity to 33kV and 132kV electricity network, proximity to ground mounted solar PV and onshore wind generation, and proximity to industrial areas and commercial buildings in city/urban areas

UK Power Networks (UKPN)

The "Best View" scenario will be a key input for regulatory submissions such as Network Development Plan (NDP) and the Long Term Development Statement (LTDS). The "Best View" scenario will be based on the output of the annual Distribution Future Energy Scenario (DFES) process. The annual DFES process gathers a range of inputs e.g. national/regional policy announcements to produce a regionally specific set of projections for key zero carbon technologies and other factors such as commercial floorspace growth. The process also uses a range of socio economic modelling such as consumer choice modelling/investor hurdle rate analysis to inform the overall level of uptake and detailed regional factors such as building stock analysis to inform the spatial distribution of the technologies. In developing our Best View scenario we also consider the logical consistency across assumptions e.g. high heat pump uptake must be supported high energy efficiency roll-out.

To ensure a consistent approach across DNOs the Open Networks Project has defined three proposed criteria to be used by DNOs in developing their "Best View" scenario. The proposed criteria are:

- Criteria 1. Best View uses justification criteria for alignment with existing/announced policies
- Criteria 2. Best View uses justification criteria for stakeholder engagement inputs
- Criteria 3. Best View uses justification criteria for regional and local characteristic inputs

The table below provides examples on how UK Power Networks' will apply the proposed "Best View" criteria.

"Best View" justification criteria	How the criteria will be applied
Category 1: existing/announced policy	• EVs – reflect national policies for the banning of petrol and diesel cars and vans and PHEVs and regional policies such as congestion charge and ultra-low emission zones • Decarbonised heating – reflect national policies, e.g. post 2025 ban of gas boilers on new buildings • Renewable generation – reflect existing / announced policy incentives e.g. smart export guarantee

"Best View" justification criteria	How the criteria will be applied
Category 2: stakeholder engagement inputs	• Connection pipeline – Based on accepted connection pipeline with confidence factors applied where appropriate • Strategic investment proposals – Key developments e.g. garden villages, green recovery projects that have secured funding • Local Area Energy Plans – Based on approved plans with funding or clearly defined funding pathways
Category 3: regional/local characteristic inputs	• EVs –analysis of factors such as off street parking availability and historic take up rates to inform geospatial distribution across our licence areas. • Decarbonised heating – geospatial distribution of decarbonised heating technologies based on our Heat Street project analysis of the suitability of the local building stock for particular heating technologies • Distributed generation – Consideration of local acceptability of technologies e.g. onshore wind and availability of suitable land

Application of the "Best View" scenario to the Network Development Plan

As discussed above the "Best View" scenario is a key input into the Network Development Plan. However, in developing the Network Development Plan the impact of the other DFES scenarios will be considered to ensure that no pathways are closed off and to reflect the greater level of uncertainty that exists towards the end of the 10 year period.

Western Power Distribution (WPD)

Background

The WPD Best View is a single scenario which is used to inform forecasting market information, regulatory reporting, network datasets and future business plans. It is a dataset built at primary substation level, providing demand, generation and storage volume forecasts which can be combined with technology assumptions to infer MVA capacity requirements. The WPD Best View is a not a single central outlook, but instead is derived from bespoke assessment of Local Area Energy Plans (LAEPs) and local delivery capability to enable WPD to assign a Distribution Future Energy Scenario (DFES) for each Local Authority and hence all substations within that area.

To support proactive engagement of the Local Authorities, Local Areas and Local Enterprise Partnerships, a DFES report has been created for each Local Authority region within the WPD area. Each Local Authority DFES report contains some information on the electrical assets within the region being fed, a map of the area and then a technology specific breakdown of the profiled uptake expected within the region across the four energy scenarios used within the industry. Finally, a fifth "WPD Best View" is also provided, this is the expected Low Carbon Technology (LCT) uptake that WPD is currently forecasting for future investment requirements.

Following the approach developed through the Open Networks project there are three criteria which DNOs must use to demonstrate how the Best View scenario is created:

- Criteria 1. Best View uses justification criteria for alignment with existing/announced policies
- Criteria 2. Best View uses justification criteria for stakeholder engagement inputs
- Criteria 3. Best View uses justification criteria for regional and local characteristic inputs

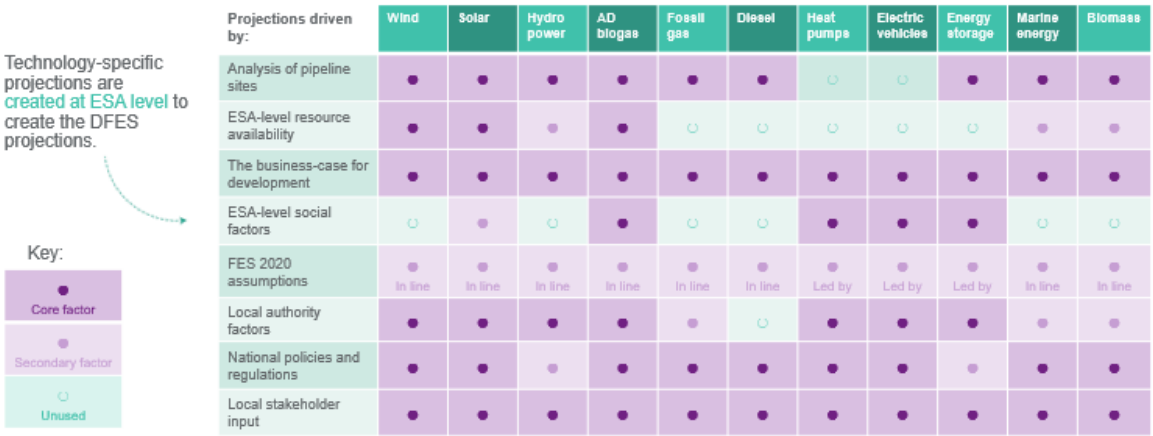
The key input to the Best View scenario is the annual Distribution Future Energy Scenarios process. This is built using a bottom-up methodology and is shaped through detailed stakeholder engagement, the WPD connections pipeline and new developments identified through an appraisal of local development plans.

WPD Best View Process

Using regional and local characteristic inputs

The DFES process ensures that the projections cover any spatial factors which affect uptakes of different technologies (or building blocks). The figure below outlines the core and secondary factors for different technologies covered by the DFES process. Some of the factors which are considered in the analysis are outlined below:

- Projections for household-scale technologies such as heat pumps, rooftop solar PV and battery electric cars, are most affected by demographic and social factors, which interact with other factors such as affluence or national policies or financial incentives.
- Projections for generation technologies such as onshore wind and solar farms are weighted towards more geographical and resource factors, such as high wind speed or solar irradiance. Other key considerations are assessment of capacity markets, planning permission and the business case for development.



Projections driven by:	Wind	Solar	Hydro power	AD biogas	Fossil gas	Diesel	Heat pumps	Electric vehicles	Energy storage	Marine energy	Biomass
Analysis of pipeline sites	●	●	●	●	●	●	○	○	●	●	●
ESA-level resource availability	●	●	●	●	○	○	○	○	○	●	●
The business-case for development	●	●	●	●	●	●	●	●	●	●	●
ESA-level social factors	○	●	○	●	○	○	●	●	●	○	○
FES 2020 assumptions	● In line	● In line	● In line	● In line	● In line	● In line	● Led by	● Led by	● Led by	● In line	● In line
Local authority factors	●	●	●	●	●	○	●	●	●	●	●
National policies and regulations	●	●	●	●	●	●	●	●	●	●	●
Local stakeholder input	●	●	●	●	●	●	●	●	●	●	●

Stakeholder engagement inputs

WPD believes that where DNO LCT volume forecasts align with LAEP forecasts, this should be regarded as highly certain, as long as that LAEP can demonstrate that it represents the wants of local stakeholders, that the requirements are reasonable and built up from quality evidence of need and that there is a competent plan for delivery.

A number of these factors that demonstrate a high certainty of decarbonisation delivery can be assessed through reviewing the LAEPs in a lens consistent with Ofgem's LAEP Best Practice checklist, which WPD has used to develop a LAEP scoring criteria. This methodology allows the quality of the LAEP to be assessed against consistent criteria and is carried out by WPD's senior regional managers. Each Local Authority is assigned one of the four DFES scenarios that most closely aligns with the local ambition and delivery capability. This approach supports the application of a particular DFES scenario to an area and the ranking of that LAEP against others with a similar DFES scenario classification.

The DFES scenario is chosen by closely comparing the ambition of the planned volumes across all technology types within the area, and then further ranked on how close this ambition is likely to be to the needs of stakeholders (engagement completed), how accurate the modelling is and the capability of the area to deliver. A single DFES scenario is currently chosen to approximately represent all technologies, but there is scope in the future for differentiation between expected uptakes of technologies to also be simultaneously assessed.

Alignment with existing and announced policies

Before the WPD Best View is finalised, the licence area totals are checked against national ambition to ensure WPD targets are aligned to deliver governmental policy. Scenario boundaries across the rankings may be moved to more closely aligned, assuming incentives and policy is directed at achieving national Net Zero ambitions. Each primary substation also receives a disaggregation of this "WPD Best View" and this is used to inform the growth rates required for investment across the network. The result is a Best View scenario which captures the varying levels of ambition across the WPD licence areas, but aligns to the most recent national ambitions and targets for decarbonisation.

Energy Networks Association
4 More London Riverside
London SE1 2AU
t. +44 (0)20 7706 5100

w. energynetworks.org
@EnergyNetworks