Annex 7.1
Delivery Strategy

Northern Powergrid: our business plan for 2023-28

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Introduction

Delivering on decarbonisation through internal resources and our supply chain is a key driver of our delivery strategy for 2023-28

Our plan sets out what we will do in 2023-28 to maintain and improve the essential service we provide for customers, and to facilitate decarbonisation – one of the most significant transformations in our business for decades. To do this, we have set out our plans to spend £473m per annum, 50 per cent more than what we are investing in the 2015-23 period.

Our current delivery model has served us well, enabling us to successfully deliver our largest ever capital investment programme over the period 2010-15 and keeping us on-track to deliver our 2015-23 commitments, including upgrading our network to be smarter and more active. We have a proven track record of delivering necessary investment at industry-leading cost efficiency levels and successfully adapting our plans and delivery models to manage risks. This past performance demonstrates the strength of our delivery capabilities.

We have prepared our draft plan for 2023-28 against a very different landscape to that of its predecessors. The decarbonisation agenda, significant developments in technology, what our customers expect from us in a society with an ever-greater dependence on electricity, and a shift in attitudes towards what existing and prospective employees expect from their employer, mean that today's plans need a programme for transformational change, not just an incremental build on what we do today. We must also recognise that global supply chain conditions have changed and that the transition to Net Zero will place additional demands on supplier capacity. A high-level assessment of the impact of our plans in terms of activity levels and performance is shown in Table 1. Clearly the level of ambition represented by our plan involves a significant amount of change not only on decarbonisation but across almost every area of our plan. In preparing this plan we have highlighted six particularly significant enabling areas that are essential to make it possible to deliver the changes demanded by our plans for the 2023-28 period:

- Data and digitalisation: Delivering an 80 per cent increase in information technology (IT) systems investment. A significant expansion in our data capabilities in areas of power consumption and real time dynamic information about how the distribution network is operating to support our distribution system operator (DSO) plan and other output improvements, detailed in our digitalisation strategy and action plan.
- Innovation: Always an essential part of our plan, but the 2023-28 period places an even greater level of dependency on effective innovation in our business. We have set out in some detail our approach to innovation in our innovation strategy.
- DSO transition: Delivering the required new capabilities including skills, processes, network technology and supporting systems to deliver on our commitments detailed in our DSO strategy.
- Whole systems: The transformation of the approach we take to managing the distribution network needs to be undertaken in the context of the wider energy system. This adds to the complexity and sophistication of the decision making processes and collaboration that we need to make part of the way we do business. Our approach to that element of the change is set out in our whole systems strategy.
- Supporting vulnerable customers: our plan includes a significant increase in the level of support we provide to members of our communities who need it the most. The details of that are set out in our vulnerability strategy.
- Workforce resilience: The quantity, capability and resilience of our resources is essential to delivering the above areas of step change. We set out our plans to upskill and grow our workforce through recruitment, training and an improved approach to diversity, inclusion, and equality in our workforce resilience strategy.

Our delivery plans for these areas are set out in the individual annexes for each of these sections, which include a granular view of how each of these areas will be achieved. As we consider the prominent, mission critical strategic changes that our objectives require, we see that the vast majority of them are covered by those documents.

But we also see one other very obvious feature that has to stand alongside those factors: a significant increase in the volume of investment that needs to be delivered.

Our ability to deliver this investment requires significant increases in materials to cover the increased volumes of cables, transformers and overhead poles/supports and increases and upskilling of labour to bolster our own workforce and those of our contractor service providers to install and replace those assets. Delivering this is significantly dependent on the ability of our supply chain to meet these increased needs.

Elsewhere in our planning documents, we present over 60 detailed engineering justification papers that examine the specific areas of our activity. In every one of those papers, the deliverability implications of that programme of work are examined. Inevitably they are considered in quite a focused way that is relevant to that activity.

Therefore, the focus of this annex is to provide our stakeholders with an overview on the approach we are planning to take to the operational delivery of the increased network investment activity required to meet the load growth projected in our planning scenario. Delivering on that is essential to our aim to keep all possible pathways open for decarbonisation (detailed in the scenarios and investment planning annex). This is the largest capital programme in our history.

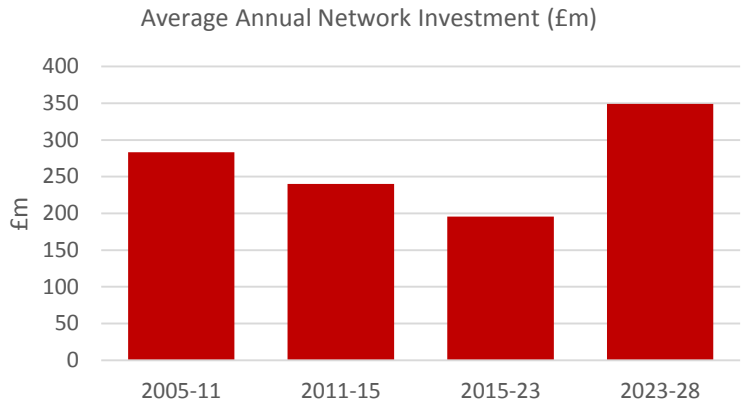

Figure 1: Network expenditure for the 2023-28 period relative to previous periods

We cover the key aspects of our delivery strategy, including operating model, workforce requirements and our supply chain model, and considerations for early ramp-up in advance of 2023. In doing so, we focus in particular on:

- Activity analysis: analysis of actions required for us to deliver some of the more stretching aspects of our network investment plan;
- Make vs. buy: our approach to which services we deliver ourselves and which we buy-in from service providers;
- Developing our supply chain and building capacity:
    - working with our supply chain and the feedback we received from our supply chain engagement to help inform our delivery plans; and
    - risk mitigation considerations across our supply chain and implementation plans.
- Operating model: our operational organisation and delivery approach between regional/geographic and centralised delivery functions.

Since draft submission of our plan we have been developing a more granular view of this delivery plan and we will continue to build on that work following final business plan submission. We have already begun enacting our plans for early operational ramp-up ahead of the start of the 2023-28 period including recruitment of additional delivery resources (for example control, protection and delivery engineers) and augmenting our portfolio of strategic framework agreements with our suppliers. This will continue to be a significant area of focus during 2022.

We plan to continue to engage our Customer Engagement Group in reviewing our progress in this regard. This will give our stakeholders the confidence that we have a clear and constantly evolving view of how we will deliver on our promises.

Plan Area		Δ Activity	Δ Performance	Headline changes vs. 2015-23 period	Key features of our delivery plan
Decarbonisation	*Scenarios & Investment*	⇧	⇧	- Over x5 increase in network reinforcement (£19.5m to £103.1m p.a.) - Dynamic system planning and forecasting	- Scale contractor resources through strategic framework agreements
	DSO Strategy	⇧	⇧	- Open data platform - Flexibility procurement - Installation of 10,000 additional LV monitors	- Increase number of people working to fulfil DSO functions to 48 - Scale existing LV monitoring programme - *See data & digitalisation below*
	Whole Systems	⇧	⇧	- 30% of LV customers benefitting from large scale sites with voltage optimisation - Roll out of 30 innovative microgrids	- Build on innovation outcomes - Recruit and train further staff to install smart grid equipment
Asset Resilience		⇗	⇗	- Synergistic planning using latest decarbonisation forecasts	- Deliver programmes through strategic framework agreements
Reliability		⇧	⇧	- 8,600 HV automated switches and 9,000 LV automation units – ca. double 2015-23 run-rate	- Scale existing supply chain - Multi-skill operational teams
Environmental Action Plan		⇗	⇗	- 8,401 polychlorinated biphenyls (PCB) driven pole-mounted transformer changes - x4 increase in perfluorcarbon tracer (PFT) for cable leakage	- Scale existing supply chain through strategic framework agreements - Leverage 'hot glove' resources for live-line working where possible
Safety		⇔	⇗	- Expansion of safety management system to our contractor base	- Invest in new safety and driving training programmes and systems
Climate Resilience		⇔	⇗	- A further 45 flood defences - Vegetation programme for ash-tree dieback	- Adapt existing programmes and supply chain for 2023-28 volumes
Cyber & Physical Security		⇔	⇗	- Enhanced physical security at all of our CNI designated sites - Replacement power resilient telecoms solution	- New operational technology (OT) cyber specialist recruitment and training programme - New solutions to detect threats and respond to attacks
Customer Service		⇗	⇗	- Increase broad measure of customer service (BMCS) score to 93.5%	- New technology to offer greater choice to customers
Vulnerability		⇗	⇧	- Reach 70% of eligible high risk customers with priority services membership (PSM) recruitment - Enhance onsite welfare support for >6 hour power cuts	- Increase Customer Support Vehicles - Establish new arrangements to provide additional on-site support
Communities		⇗	⇗	- Additional £1.0m on social programmes to improve the network and community - Support for community energy	- Establish 'Community Energy Advisors' - Up-skill external partners on decarbonisation
Connections		⇧	⇧	- 20% faster small works lead times - Expansion of AutoDesign self-service - Capacity to accommodate >50% increase in LCT connections	- Develop our digital platforms to enable customers to self-serve and facilitate mass low carbon technology (LCT) uptake
Openness & Transparency		⇔	⇗	- Sustainable procurement policy aligned to ISO20400 - 98% of suppliers compliant with our responsible procurement charter	- Modify our procurement approach - Work with our supply chain to obtain accreditation
ENABLERS					
Innovation		⇗	⇗	- Flexibility product development - Harnessing flexibility at low voltage to resolve LV network constraints	- Continue our delivery model of internal resources working with new and existing external partners
Data & Digitalisation		⇧	⇧	- Ca. 50% increase in investment (+£7m pa.) to deliver data and flexibility outcomes - Enhanced data governance	- Mix of internal resources and external strategic partners - Recruitment and training for data skills
Workforce Resilience		⇗	⇗	- Create >1,000 new job opportunities - Build a more diverse workforce - Develop regional and national skills	- Upskilling and recruiting our workforce with digital skills, commercial and technical engineering expertise - Improve diversity, equity & inclusion

Key: Activity levels vs. ED1 ⇧/⇩ Significant increase/decrease, ⇗/⇙ increase/decrease, ⇔ broadly similar levels

Table 1: Assessment of activity levels and performance changes across our plan

Activity analysis

We have demonstrated our ability to scale our network investment activities across successive price controls

The network investment activity to meet the load growth projected in our planning scenario, and keeping all possible pathways open for decarbonisation (detailed in our scenarios and investment planning annex) indicates an overall average annual increase in investment of 50 per cent.

However, the average level of change in the total masks larger underlying changes in levels of investment in some asset classes or work types. Therefore we will need to refocus our delivery resources to match those changes in work mix.

The summary of our investment plan, illustrated in Table 2 below, shows where the changes in investment are occurring. For example, driven by the reinforcement needed for decarbonisation, our plan sees us significantly increasing the volume of work particularly on our LV overhead and underground networks; needing less investment in our 132kV and EHV overhead and underground networks but more on our major substations.

Asset Class / Work Activity	Total ED2 (2023-28) £m	Average ED2 (2023-28) £m	Average ED1 (2015-23) £m	Variance		Δ Activity
				£m	%	
Connections driven reinforcement	172.9	34.6	5.6	28.9	512%	⇧
LV overhead lines and plant	84.0	16.8	3.7	13.1	351%	⇧
Dismantlement	3.1	0.6	0.2	0.4	159%	⇧
Major substations (132kV and EHV)	272.8	54.7	23.0	31.7	138%	⇧
HV overhead lines	86.8	17.4	7.6	9.8	129%	⇧
LV cables	410.4	82.1	36.6	45.5	124%	⇧
Distribution substations	138.0	27.6	15.1	12.5	83%	⇧
Non-load related investment	379.0	75.8	47.7	28.2	59%	⇗
Inspections	33.6	6.7	4.6	2.1	47%	⇗
HV cables	47.5	9.5	7.7	1.8	23%	⇗
Repairs and maintenance	90.5	18.1	15.0	3.1	20%	⇗
Tree cutting	55.8	11.2	9.5	1.7	17%	⇗
Protection	37.4	7.5	7.3	0.1	2%	⇔
Faults	331.8	66.4	65.8	0.5	1%	⇔
ONIs	97.9	19.6	19.9	-0.3	-2%	⇔
Distribution services	23.6	4.7	4.9	-0.2	-4%	⇔
132kV and EHV overhead lines	49.4	9.9	12.4	-2.5	-20%	⇩
132kV and EHV cables	43.5	8.7	24.1	-15.4	-64%	⇩
Smart meter intv DNO	5.9	1.2	4.2	-3.0	-72%	⇩
Total	**2,364.0**	**472.9**	**315.1**	**157.9**	**50%**	⇧

Table 2: Investment plan summary

Some key highlights of this analysis are:

- To deliver the increase in network reinforcement to support decarbonisation we will need to increase the level of both goods and resources we procure from our supply chain. We will also need to recruit and train staff to install smart grid equipment through upskilling existing staff and operating a smart grid technician apprenticeship programme.
- The general reinforcement of the network (installation of replacement cables or plant) will require a build on existing skills and supply chain capacity as we already carry out this type of work, albeit not on this scale in all cases. This work type involves replacing or upgrading LV cables/services, switchgear and substations which requires excavation, cable laying, jointing, overhead, fitting and building and civil types of work. Our delivery model in these areas is already a mixture of service provision through framework contracts and direct labour and we are actively engaged in scaling this capacity. This includes increasing volumes of work delivered through service provision whilst ensuring we recruit, retain and upskill our own direct labour for in-house delivered enabling activities (generally with higher technical work content).
- We will need to expand our existing portfolio of supply chain strategic framework contracts with appropriate scopes of works and specification revisions incorporated to accommodate increased volumes.
- Specifically, to meet our transformer replacement programme we will need to significantly increase the volume of transformers we source from our global supply chain, ensuring it is capable of meeting the demand.
- By 2023 we will have installed 14,000 units of HV automation, over 1,000 LV smart fuses and 2,700 LV monitors onto our network, so whilst there is a significant uplift in annual volumes, we have a proven capability to deliver these investment schemes and programmes and previous step changes in activity levels.
    - For deployment of HV remote switches on the overhead network we currently use external resources but in order for us to deliver the target volumes we will need to leverage our live working hot-glove overhead line teams moving us to a make/buy hybrid model.
    - Installation of LV fault management devices is currently done by internal resources but the higher volumes and evolving technology will mean we expect to be able to use an external service provider for some of this work which again will move us to a make/buy hybrid activity.
- We recognise that planned power cuts cause disruption to customers and landowners. To deliver our plan there will be a significant increase in network access required so avoiding outages wherever possible will reduce the impact of these works on customers.
- To minimise the impact in number and duration of outages we will look to align individual schemes and projects against areas of the network. We will seek to carry out as much work as possible using specialist teams such as our hot glove overhead teams that can undertake ‘live’ working thereby avoiding customer outages and ensure efficient planning of work for technical skills groups to ensure smooth commissioning of the installed assets.

In successive price control periods we have demonstrated our ability to deliver significant levels of network investment across varying activity/work types and our workforce and supply chain are well positioned to provide the foundational building blocks to deliver our 2023-28 plan.

Make vs buy

We plan to continue our blended model of in-house and outsourced capability to meet demands in the 2023-28 period

Our current delivery approach places emphasis on blending our in-house capabilities with the capacity that can be achieved through an outsourced model where contractors operate across our licence area. This allows the flexibility to scale and flex resources to respond to the delivery requirements we face.

The benefits this brings are primarily:

- the ability to respond to changes in levels of demand (up or down);
- the efficiencies that are driven by the competitive tension created by the commercial procurement and contracting environment; and
- the innovation that comes through introducing other companies and management approaches to the overall capability mix.

However, it is not always the best option: for some more complex activities or with more unpredictable demand, it can be a more efficient model to approach delivery with more in-house resource.

The plans that we see emerging for the 2023-28 period are set to require an increase in both types of work. It is clear that a large proportion of our work will be relatively high volume, predictable engineering reinforcement work that lends itself to the competitive procurement process. As such, we plan to make significant use of the capacity in the wider supply chain through outsourced contracts as part of an overall blended model with a mix of internal resource and external partners/service providers. We will constantly keep the optimal balance under review.

In the past, the limits of the sensible use of our outsourcing strategy have been influenced by the need to maintain sufficient numbers of directly employed staff to resolve issues and faults on the network throughout the whole day, every day. We currently have around 2,600 directly employed staff, whose capacity is supplemented by colleagues from our service providers. That creates the flexibility to increase or decrease the overall workforce to meet the demand at any time. In recent years, our service providers have typically had over 1,000 staff supporting our network based activities. If investment levels were to drop to very low levels, it is theoretically possible that we might be in a position where we had little or no need for contracting resources. In practice we have never been in that situation and it is not credible to suggest that the future we face could entail that.

In any practical scenario, the increase in volumes of work in our plan mean that we will need to increase our supply chain capacity and increase our own direct labour to meet the demand for the extra volume and new skills. Striking the right balance is an important part creating an overall efficient cost base. For example, experience shows that the design and overall project management of the work is more likely to be better handled in-house in most workstreams, whereas for workstreams that rely much more on the productivity of a high volume of relatively predictable tasks this can be most efficiently delivered through well-structured contracting arrangements.

The illustration in Figure 1 below indicates how we deliver most of our network intervention across our own labour force and service providers. In some cases, we deliver the majority of a particular work type using direct labour, in other cases we entirely outsource it and in some cases we deliver the work through a mix of both, either as part of an end to end process or for covering peak volumes.

The grey markers indicate the ‘traditional’ types of work we have done up to this point whereas the red markers show where the increased or new volumes for the 2023-28 period would position and compare.

Whilst our business plan focuses on the areas of change, we cannot lose sight of the fact that we still have to carry out those other work activities at the same time, ensuring that:

- Power cuts are resolved quickly;

- Customers can connect to our network in increasingly faster timescales;
- Existing assets are condition assessed and maintained; and
- We execute our capital plan to replace and refurbish network assets.

Our approach involves making sure we have in-house capability for our more complex and technical work. This will continue to be our approach and it will become even more important as our network becomes smarter and digitised with greater use of data.

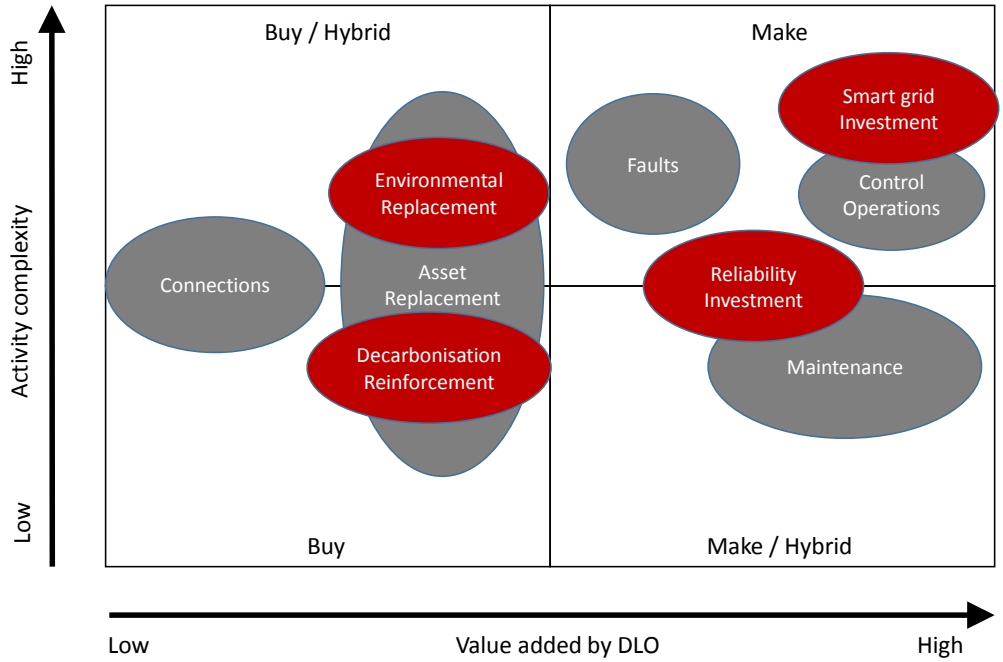

Figure 2: Network intervention delivery: own labour force vs service providers

Our strategic framework agreements are a key feature of our approach

Through our use of strategic framework agreements, we are able to award contracts for significant programmes of work that are designed to be flexible in line with our requirements.

When tendering for our strategic framework agreements, we use an industry standard database of pre-approved suppliers to identify those who qualify for the specific type of work through their past experience and associated accreditations. We also take account of past performance, ensuring that any recent examples of poor quality work are factored into the selection of our contractors, which is enabled by robust post award contract management and performance monitoring.

Our contract strategy and tendering approach positions us with framework agreements that enable us to deliver work through expert, regionally-based contractors with an ability to scale through multiple service providers. We have a proven track record of delivering large programmes of work in this way.

- Throughout the 2015-23 period we have developed and operated framework contract agreements with the most cost-effective service providers as a result of competitive market tender processes. These have successfully serviced and supported the delivery of a wide range network activities, including fault work excavation, cable and service replacements across the company.

- Depending upon the different commercial offerings from individual service providers, network activities have been delivered in different ways across the company with either single or multiple service providers on a wide scale or geographic basis.

The contract management and performance review processes for our frameworks have been structured around the ways in which these activities have been managed, either regionally or centrally. Operating these multi-supplier frameworks has enabled us to optimise the efficiency of delivery of network activities as well as offering a level of supply chain risk mitigation. We are able to learn from best practices from individual service providers who outperform expectations and enable us to adopt these ways of working across the entire framework activity.

During the 2015-23 period, our operations function has been structured into a regional formation with six regional teams. These teams oversee the delivery of all of the distribution network activities other than major projects, which continue to be delivered centrally.

In preparing for the future we expect the next iteration of the service provider framework to move to a more regionally organised formation. In the end, that decision will be guided by the commercial offer and how it mitigates any risks posed to our delivery capability. Any one service provider may service more than one region or specialise in a given work activity. The advantage of this will be to enable the Northern Powergrid and service provider teams to work closely as one team and optimise improvements in performance through the utilisation of flexible working across all of the network activities in the region.

We will closely scrutinise unit costs especially for work or products that are new or lack an existing stable market price as there is the potential for erratic pricing either with prices or bids which are too high or low because of a lack of understanding of scope.

Developing our supply chain and building capacity

We are well positioned to build from a mature supply chain model. As we have already set out, our current approach makes significant use of contractors across our licence areas. We have a portfolio of framework agreements for both our goods and services requirements, and these agreements provide us the flexibility to scale resources to respond to needs.

If we are to use more of that capability in delivering the scaled-up investment program, we and our stakeholders need to have confidence that the supply chain is capable of building that additional capacity. We factor that into the way we make our choices.

When we award contracts for requirements that are strategically important to our business, they must be able to meet flexing demands and be scalable, hence we award many of our contracts in the form of framework agreements. The accreditation process identifies contractors operating in our licence areas who are capable of delivering our scope and quality requirements. Those who meet the necessary criteria at an affordable price are then awarded a framework agreement.

The agreements can be flexible in setting upper and lower limits in terms of the volume of work we issue; often we set the lower limit at zero and have no upper limit. This puts the emphasis on the commercially incentivised suppliers to have the ability to secure the resources they need. In so doing it gives us access to the affordably priced contractors in our licence area and allows us to scale our requirements to meet the increased demands in an efficient manner.

We know that this approach works in practice because we have been using framework agreements for our strategic contracts for a number of years, and their capacity to flex to meet changing demands is proven. One of the key aspects of this approach is that the contracts can be awarded to cover multiple types of work. The diversity of work facilitates and supports the long-term commercial viability of the entire framework.

Engagement with our supply chain as part of developing our delivery strategy has been encouraging

Throughout the planning process we have engaged with our service providers and wider supply chain, who themselves are stakeholders in this plan. What they have told us has reinforced what we have heard over the years of working with them: by providing visibility of the demand profile, and facilitating unrestricted access to deliver the work, the contractors are confident that they can flex their resource capacity to meet the demand. It has also told us that we have a supply chain that is excited and eager to support us in meeting an increased delivery requirement.

Engagement with our supply chain has also helped us to understand what we can do differently to give them the best opportunity to support us in the delivery of our plan.

The engagement we have done has involved 80 per cent of the supply chain by value spend with a relatively high response rate of 50 per cent of the providers engaged. That has given us some excellent insight into what improvement initiatives we could adopt to give them the best opportunity to support us in our journey to scale up to deliver in a cost efficient, sustainable, safe and socially responsible way.

Their responses relate to the way we tender and specify our contracts, the way we issue work, and more generally around finance and other support activities:

- Tendering: The main focus was on the need to have clear and early visibility of the workload, and to have long-term contracts that provide certainty of work so that resourcing decisions can be made with confidence in anticipation of the need. There was also feedback on the potential benefits of giving the supply chain more autonomous control of the end to end process of delivering work to facilitate efficiency gains.
- The way work is issued: Feedback was that the supply chain would like to increase their involvement in the post-contract award processes that precede the work issue. They proposed increased collaboration on the identification, planning and scheduling of work activity, shared access to data systems and co-location of resources.

- Finance and general aspects: Here the focus was on speed of payment, and a general desire to be paid earlier to avoid the cost of financing work in progress. There were suggestions made that involved payments in advance of work being completed and measured, on a trust and verify basis, and there were other suggestions around the automation of the payment process to speed up transactions.

We will secure the right blend of contracts and ongoing management to drive quality, efficiency and scalability

We are considering this feedback as we make preparations with our supply chain to deliver our plan, but the overriding message is one of positive engagement and a significant degree of confidence that we can build the capacity needed. As we do that, our focus will continue to be on creating the right structure and blend of contracts to drive quality, efficiency and scalability.

Our approach to doing that is centred on:

- Driving to best value bid through appropriate use of e-auctions: We have significantly ramped up our use of e-auctions to conclude our tender events as this is a proven way of driving the best value bid when there is healthy competition. As our experience increases, we will refine our use of this to suit different tendering events.
- Improving vendor efficiency potential by guaranteeing work volumes: By increasing the extent to which we guarantee volumes of work to our suppliers, we can improve their visibility and certainty of the future pipeline of work. This commitment from us will encourage our suppliers to invest in the time and resources that are needed to implement efficiency improvements.
- Improving vendor efficiency potential by unblocking work pipelines: There are many constraints with regard to operational delivery of work on the electricity network, for example third party consents, availability of skilled resources, access to the network without interrupting customer supplies and street work permissions. If these constraints are not carefully managed our works can be disjointed and therefore inefficient for our contractors.
- Improving vendor efficiency potential by increasing autonomy: Some of our work streams contain a blend of internal and contracted resources. We continually review these work streams to determine if we can increase the potential for efficiency by giving increased autonomy to our supply chain, thereby avoiding handovers, and allowing seamless control of more phases in our work delivery programme. In the 2015-23 period we have demonstrated success with this model for service alterations, deploying a contractor delivery model administered seamlessly with the customer through workflow allocations in our Customer Relationship Management (CRM) system. We plan to leverage this model to support the significant forecast requirement for service upgrades for low carbon technologies in the 2023-28 period.
- Improving operational efficiency by optimising delivery models: We are confident that we currently have a strong balance with regards to our blend of in-house resource versus contracted delivery. This gives us sufficient directly employed resources to respond quickly to faults or major incidents on our network. We do however continually review our work streams to determine if the blend can be adapted to meet changing demands based on increased contractor performance and capability.
- Reducing costs through improved cash flow: Our vendors routinely need to finance the cost of work in progress until they are paid for it, which has an associated cost implication. We continue to look for ways to improve this position without compromising our financial security. We aim to pay invoices on a net monthly basis, and are currently achieving payment on time on 90 per cent of invoices received.

We are looking at options to enhance the pool of suppliers to derive further efficiencies through increased competition, continuous improvement, and both identifying and deploying best practice.

Our Responsible Procurement Charter will drive consistent standards in our supply chain

During 2022, ahead of the 2023-28 period, we will be strengthening the expectations we have of our supply chain by invoking our Responsible Procurement Charter (RPC). This charter will form an integral part of our contractual relationships with our supply chain partners going forward. The charter will set out our expectations of our supply chain with respect to values, behaviours and ethical standards.

The RPC will ensure our suppliers have a positive environmental, social and economic impact, and will cover the following areas;

- Ethical and legal requirements: we expect our suppliers to share our commitment to ethics and compliance with legal requirements.
- Health and safety standards: suppliers should align to our commitment to provide a safe and healthy environment for all workers and the public.
- Customers and the community: our aim is to provide outstanding service to our customers. When delivering work on behalf of Northern Powergrid, our suppliers should deliver to established best-practice standards including providing enhanced support for vulnerable customers. We also expect our suppliers to strive to make a positive difference in the communities we serve.
- Employee standards and codes of conduct: we expect our suppliers to employ fair employment practices and comply with all related legal requirements.
- Environmental protection: environmental respect is one of our core principles and suppliers should abide by environmental laws and regulations as well as show ambition through their measures to protect the environment and decarbonise their operations. The RPC complements a wider package of measures aimed at reducing emissions from our supply chain including direct financial support. More details on this can be found in our Environmental Action Plan.
- Asset and data protection: Suppliers are expected to protect our resources and safeguard data.
- Corporate governance policy: Suppliers are expected to adhere to high standards of governance and are required to notify us of any violations to the charter.

We will monitor the performance of our supply chain partners against the requirements set out in the RPC, and work collaboratively with them to support their journey towards compliance. We will target 90% compliance with our RPC by the end of the period. Our contract management routines will be adapted to accommodate enhanced performance monitoring required by the RPC, and we will adopt a technology based approach in establishing reporting channels so as to minimise the burden and maximise efficiency of the process.

We will enhance supply chain resilience to manage materials risks

UK and global supply chain resilience risks have increased in recent years, even more so during the course of the business plan consultation period, evidenced by numerous global events:

- Post-Brexit supply chain issues;
- COVID-19 furlough and remote working impact on manufacturers and shipping;
- Suez Canal blockage;
- Energy intensive industries impacted by high cost of gas / energy leading to production shutdowns (and government intervention) for critical commodity products e.g. CO_2;
- Fuel panic buying events.

In each of these instances, the need for supply chain emergency plans has been clearly demonstrated. These types of global factors are likely to remain as risks in the future, with the potential to impact the availability and cost of supply chain resources required to deliver our plans.

In addition, the national and global transition to Net Zero is set to place increased demands on supply chains and increase competition for labour and materials.

- Our plans see an additional £1.7bn of network investment in the 2023-28 period, a pattern that will be replicated for other DNOs and infrastructure providers across the country.
- This will bring opportunities for collaboration but also potentially competing demands for resources.

- We expect the market to respond to these increasing demands bringing positive impacts for regional and national economic growth in the long term, but risk mitigation plans must be in place to navigate through this transition and support our supply chain to respond.

In terms of impacts on our costs, our regulator has chosen to index the cost pressures we face for our activities, called real price effects, or RPEs. If these indices rise faster than inflation, we will be provided with extra funding (x-ref RPEs annex). This alters the financial profile of the risks we as a business carry; but it will be our actions (and those of our sector as a whole) to build a robust supply chain that can prevent risks such as being unable to deliver at any price – which is the focus of our deliverability work.

The rest of this section sets out how we are evolving our supply chain and procurement strategies to improve our resilience to these risks.

We successfully used a portfolio approach to managing supply chain risks in the development of our procurement strategy for the 2015-23 period, and as we have set out, those strategies will continue to be the foundation of our approach into the 2023-28 period. As part of this approach we classify goods, raw materials, components, finished products, manufacturers, vendors as well as the labour provided by contractors or service providers against the following four categories and align our procurement strategy accordingly:

- Critical / Bottleneck – Where we have a single or limited number of providers. Our strategy here is to develop new or existing contractors to be able to deliver these activities.
- Strategic – These are high cost items with limited number of capable providers. Our strategy here is to develop new suppliers but also offer longer term contracts as an incentive for competitive cost.
- Leverage – Where we buy in large quantities and where a small change in unit cost can have a large impact on total costs. Our strategy here is to get large savings with the lowest price by offering significant volumes to contractors.
- Routine – These are routine items with many suppliers. We use a number of strategies here to drive value such as regular competitive tendering or offering longer term contracts with significant volumes.

An example of this analysis is shown at Figure 2 below for some of our key inputs.

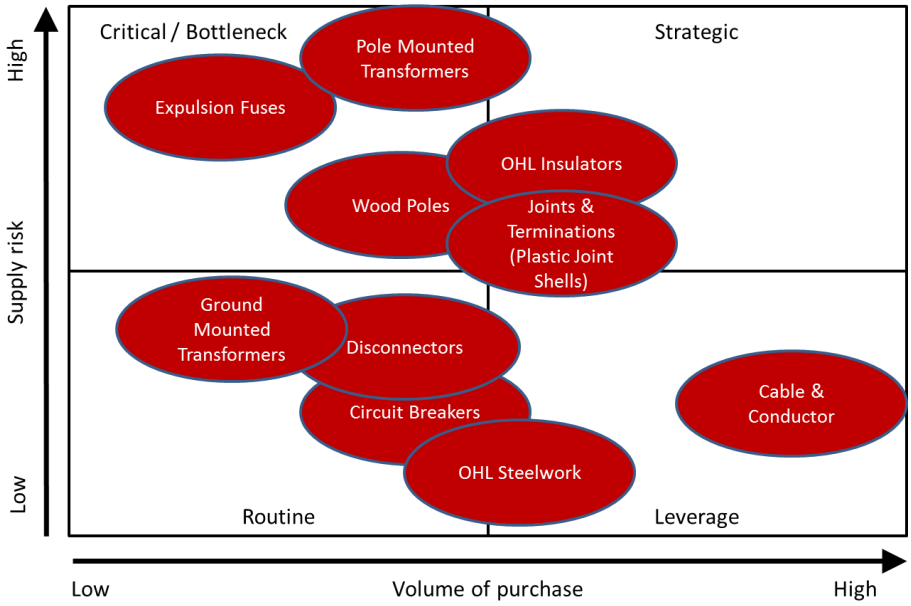

Figure 3: Portfolio approach to procurement strategy and risk

The recent global events have caused a shift in the supply risk axis on the portfolio matrix, resulting in a number of our requirements shifting from routine and leverage into bottleneck and strategic. Increasing demands for Net Zero will have

a similar effect. We have developed our procurement strategies to mitigate the increase in risk in the 2015-23 period and we will continue to do so.

Specifically, during 2023-28 we will:

- Engage two or more suppliers for all critical items, thereby mitigating the risk of being reliant on a single supplier.
- Give early visibility of our pipeline and place early orders to secure production slots with our suppliers in situations where we know the demand for goods is projected to be high, and where we know that there will be similar increase in demand across the broader UK DNO community.
- Improve the efficiency of the end-to-end supply chain process through the implementation of technology. As detailed within our Digitalisation Strategy and Action Plan we will be upgrading our back-office systems. This enhanced technology will enable improved up-front planning and process execution, and will allow us to optimise stock levels based on our investment plans, improve demand planning and forecasting, and give improved visibility and certainty to our supply chain partners which will be critical in securing the necessary capacity levels.
- Utilise standardised pricing mechanism for certain items, where appropriate, which is linked to commodity prices/ indexation.
- Maintain a high degree of collaboration with our supply chain to ensure issues are highlighted as soon as they are predicted or known, to allow us to react appropriately and mitigate global risk factors. For example:
    - Exploring the potential of bringing their tier 1 and 2 supply chains closer to the UK or to have an alternative sourcing option in Europe/ UK; and
    - Increasing stockholding of raw materials
- Maintain high levels of stockholding. As part of our up-front planning to mitigate supply chain risks anticipated as a result of Brexit, we significantly increased our stockholding of critical items. As the risks associated with Brexit subsided, the COVID-19 pandemic and subsequently the other global events listed above had their impact on global supply chains, we have therefore maintained increased levels of stockholding. We will continue to maintain those stock levels into the early part of 2023-28, and will only consider reducing them should we enter a sustained period of supply chain stability.
- Maintain a clear view of alternative or substitute products.
- Take proactive steps to design out the need for catalogue items that become scarce.
- Ensure we have clear and robust Supply Chain Emergency Plans in place for major events. Clarity of process and responsibilities is critical at these times which are a key feature of our incident management plans. We also seek to improve our resilience by learning from events of the past. You can read more about our emergency plans in our approach to resilience annex.

Our 2023-28 plan involves a scaling-up of our supply chain teams which will support our proactive approach to managing emerging supply chain risks.

Taking some of our key inputs that sit in the critical/ bottleneck quadrant by way of an example of our approach, we set out below some specific mitigation strategies we are or will be adopting to minimise the risk of supply chain failure in each case:

- Joints & terminations (plastic joint shells): Disruption is ongoing with plastics availability as a result of a combination of factors including plants shutting down through the pandemic, a global shortage of shipping containers and a strong economic recovery in Asia impacting demand. Key mitigations include:
    - Increasing our supplier base and identifying acceptable product alternatives.
    - Placing early orders for future demand.
    - Increasing our stock holdings.

- Wood Poles: Our wood pole health indices are driving a significant uplift in demand for replacement during the 2023-28 period, creating a risk of demand outstripping availability on a product that has inherently long lead times. This risk could be exacerbated if other DNOs face similar peaks in demand. Key mitigations include:
    - Providing early visibility of our requirements to our suppliers.
    - Placing early orders for future demand.
- OHL Insulators: Components from China form a key element of our supply chain for these products. There remains a risk that global trade tensions could give rise to supply restrictions. Key mitigations include:
    - Increasing our supplier base and identifying acceptable product alternatives to include more locally sourced options.
    - Increasing our stock holdings.
- Expulsion Fuses: We currently source these products from South Africa and we have seen supply disruption as a result of the pandemic and the availability of the required raw materials. Key mitigations include:
    - Increasing our supplier base and identifying acceptable product alternatives.
    - Placing early orders for future demand.
    - Increasing our stock holdings.
- Pole Mounted Transformers: The change in the law that requires removal of transformers containing PCBs by the end of 2025 combined with changes in standards to reduce network losses will result in an unprecedented demand for pole mounted transformers. This is a national issue affecting all network companies. Key mitigations include:
    - Providing early visibility of our requirements to our suppliers.
    - Placing early orders for future demand.
    - Increasing our supplier base and identifying acceptable product alternatives.
    - Collaborating with the broader DNO community to develop the supply chain and level-out demand.

Alongside the goods and materials needed to deliver our plan we also procure a range of delivery services and resources through our supply chain. Our suppliers will face similar challenges as we have set out in our Workforce Resilience Strategy in attracting, developing and retaining resources to fulfil capacity requirements.

- The increased levels of underground network reinforcement activity push and work on services at customer properties will drive a need for more jointing, excavation and reinstatement services.
- We will see even greater impact on our need for overhead line resources - like underground resources we contract for this activity via our strategic framework agreements.
- Decarbonisation is not the only driver of changes, our plan sees us increase the level of investment in vegetation management which necessitates the use of authorised arborists through a managed service contract.

During 2023-28 we will:

- Continue with and develop our use of scalable multi-supplier framework agreements.
- Give early visibility of work requirements and early commitments to our supply chains, enabling our partners to undertake advanced recruitment and production. For the contracts we already have that will run into 2023-28, we will share with the vendors our draft investment plans and the associated volumes during the first half of 2022. We anticipate that the majority of the remaining key contract requirements will be let during 2022, and will contain a view of our draft investment plans and the associated volumes.
- Increase the capacity in our training school to support our supply chain in the training of the additional skilled resources required to deliver more technical aspects of the work required. Our aim to provide a sector leading training programme to equip our workforce and service providers with the skills and techniques required to manage the more active and flexible distribution network. In our plan we have included investment of £3.0m in

the 2023-28 period to expand and enhance training facilities for our workforce and supply chain, see our costs in detail annex. Ongoing operational training costs increase by 8 per cent compared to the current period with a 35 per cent increase assumed (within our unit costs) for our contractor service provider training in line with the anticipated increase in network investment activity.

- Collaborate with our supply chain partners to support the pipeline of future skills in our region through our STEM careers programme see our Communities section of our main business plan.

Operating model

In planning for the 2015-23 period, our strategic review of operational delivery set out the approach we would take. A significant change in that respect was a drive to operate in a more regional and local manner.

In doing that we set out the general distinctions between areas which were largely urban, industrial, or rural areas. Within those areas we ensured they were locally managed with focus on ensuring we rapidly responded to faults and efficiently delivered customer connections.

Our performance since then has proven that the approach we have taken in those areas is the right direction to take as our customer satisfaction scores have improved across power cuts, connections, and general enquiries. At the same time, we have managed to continually improve unit costs and preserve the keen focus on indirect costs that was a particularly strong feature of the functional delivery models we deployed in previous years.

Our future model continues to be based on localisation with an even stronger emphasis on regional based delivery. Since publishing our plan for the 2015-23 period we have continued to refine that approach and in 2019 we made further changes that expanded the activities which are managed regionally. Accountability for the delivery of inspections, maintenance, LV and some HV capital work is now through our regional operations teams which lays down the foundations for delivery going forward.

We are confident that the model we have in place is the right one to take us into this exciting phase where significant increases in investment, particularly in the local LV networks, will be required.

The model is also proving to be a strong basis for some of the other improvements that our plan is targeting, in addition to the decarbonisation priorities. For example, we have seen significant improvements in power cut response times and in the number of occasions where customers are without power for long periods (measured, for example, by the number of power cuts that exceed 12 hours). We are projecting for those improvements to continue, and in parallel we have factored in the requirement to operate to an increasingly high standard of safety.

These two priorities come together in a potentially conflicting manner when it comes to the work our teams do during the night to provide power cut response on a 24/7 basis. The reason for that is that, in practice, delivering great power cut response involves a number of our colleagues working overtime. Historically, that has led to some people working very long shifts on some occasions.

We are very proud of what our teams achieve in getting the lights back on for our customers, sometimes in very challenging circumstances. But in the arena of safety management, it has been acknowledged for some time that managing the overall average time that people spend at work is important for their health and wellbeing. More recently, it has become clear that short-term fatigue is a very clear risk factor that needed more attention. As such, we have already moved to a situation that imposes a hard stop on the length of time that one of our operational colleagues can be on shift before they have to be relieved to allow them to rest.

This plan includes ambitious improvements in both power cut response and safety performance, not just in one or the other. This requires a different approach than we have taken previously. The changes that we have already made have included a roll out of shift working for our jointing teams in order to provide a more consistent 24/7 response to power cuts and manage the fatigue factor that is a particular feature of standby cover arrangements.

Changes like that will be supported by initiatives within the our workforce resilience strategy and digitalisation strategy and action plan as we recognise that our people and technology have significant parts to play in ensuring we continue to deliver efficiently.

Delivery risk management

The execution of our delivery plans will be subject to formal programme management controls that feed into our well-established risk management processes as set out in our approach to resilience annex.

Our plans to manage delivery risk are overseen by our Risk Advisory Board (RAB) which reports into our Board of Directors. The RAB is chaired by one of our non-Executive directors and has an additional independent member providing external scrutiny.

The RAB oversees our suite of top company-level risks such as cyber security and ensures that our risk management plans remain current, proportionate and complete. Other risk management groups in our business report into the RAB including our Asset Risk Management Group (which deals with long term network resilience) and our Emergency Planning Coordination Group (which oversees the effectiveness of our portfolio of operational response plans).

As we move through 2022 and into the 2023-28 period, the RAB will challenge our delivery plans to ensure we are appropriately managing delivery risks including workforce resilience (recruitment, training and deployment) and our supply chain ramp-up plans (contract strategy and additional measures to build capacity).

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