



12. We will be innovative

What this stakeholder priority is about

The need to transition to clean energy, and drive down current and future consumer costs are driving rapid changes in our energy system.

Everything we do is for our customers, stakeholders and ultimately the end consumer. They are telling us they want us to be innovative, and deliver an affordable network that is safe, reliable and resilient, and play a role in decarbonising the UK economy. We can make a real, meaningful difference, leading the way to a safe and sustainable future.

Our Innovation Strategy has been developed with our stakeholders, resulting in the following focus areas:

- Delivering Cleaner Energy
- Delivering Cheaper Energy

We will continue to roll-out previously proven innovation, delivering innovation benefits within the period on our Business As Usual (BAU) innovation projects. We will improve our external collaboration, stakeholder engagement and innovation culture (through our IDEO cultural survey commitments in section 4 of this chapter) to ensure we deliver benefits to consumers, customers and stakeholders. You will find evidence of our innovation activities throughout each chapter of the business plan.

What you have told us so far

We have asked our stakeholders what is important to you. You have told us that we should innovate more on decarbonisation, as well as providing a reliable energy system and lower energy bills. We have changed our plans to increase our focus on decarbonisation. You want us to invest in innovative ways of delivering this which creates benefits both now and in the future. You have told us that we are not accessible enough, we need to be more open and transparent. You want us to share our innovation challenges earlier, and encourage more Small and Medium Enterprises (SMEs) to be involved.

What you can find in this chapter

1. What this stakeholder priority is about
2. Track record and implications for T2
3. What our stakeholders are telling us
4. Our proposals for the T2 period
5. The justification for our proposals
6. Our proposed costs for the T2 period
7. How we will manage risk and uncertainty

What we will deliver

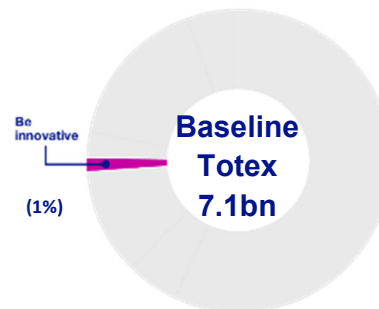
Our innovation BAU activities will create benefits in the T2 period, funded through our totex allowance with no additional innovation stimulus funding. We will invest £84m into a number of Network Innovation Allowance (NIA) funding propositions, 10% of which will be funded by ourselves, delivering benefits in the T3 period and beyond for the whole energy system. This represents 1.2% of the overall business plan as reflected in figure 12.1 below.

For Ofgem’s Strategic Funding Innovation Pot (SFIP), we propose that these are focussed on the nationally significant challenges in our strategy: future of transport, heat and network resilience.

We have embedded cost savings into our business plan as a result of our T1 innovation activities. This has delivered £748m of consumer value within the T1 period and has led to a £707m reduction in T2 costs. Further detail can be found in chapter 9 *We will provide a safe and reliable network* in tables 9.13 to 9.17.

This chapter demonstrates our success in delivering great financial benefits for consumers through investment in innovation.

Figure 12.1 Proportion of expenditure





1. What this stakeholder priority is about

The whole electricity system is becoming more integrated and other sectors are becoming ever more dependent on energy (e.g. transport) as they drive towards net-zero emissions.

Innovation is integral to both our core regulated business in the UK and US, and National Grid Ventures. Innovation in NGET covers everything from everyday continuous improvement through to step change technological breakthroughs and brings added value to our long-term ambition.

In this chapter, we refer to our innovation activities, which deliver our strategy and respond to our stakeholders and consumers needs. We will:

- contribute to the delivery of the energy system of the future by embedding innovation into our culture
- be more open and transparent,
- be more accessible
- deliver innovation benefits in the T2 period as part of our business as usual activities (included in each chapter)
- meet our NIA commitments in section 4 of this chapter.

Our board **has made a commitment on T2 innovation**, they commit to:

1. Deliver the ambition and approach outlined in the T2 business plan.
2. Take responsibility for setting a baseline and a five-year measurable target for increasing the innovative culture of the organisation.
3. An annual deep dive of progress against target, forward innovation workplan, tracking of innovation benefits, and embedding lessons learned.

This can be viewed in annex NGET_A12.04 Innovation Charter

Consumer value proposition (CVP)

The CVP looks at the value we are providing above Ofgem’s minimum requirements that we can robustly monetise. This chapter contains the following CVP items:

- CVP7 - Developing alternatives to SF₆ (value of £13.10m)
- CVP9 – Deeside innovation centre (value of £26.13m)

For more detail, please see chapter 5.4 and the CVP annexes ET.07 to ET.07C.

2. Track record and implications for T2

Costs & outputs in T1

Our Network Innovation Allowance (NIA) in the T1 period was 0.7% of NGET revenue. We agreed a voluntary split of NIA funding with the Electricity System Operator (ESO) such that we retained 0.5% of NGET revenue and the ESO had 0.2% of revenue. This voluntary split was formalised as part of the legal separation.

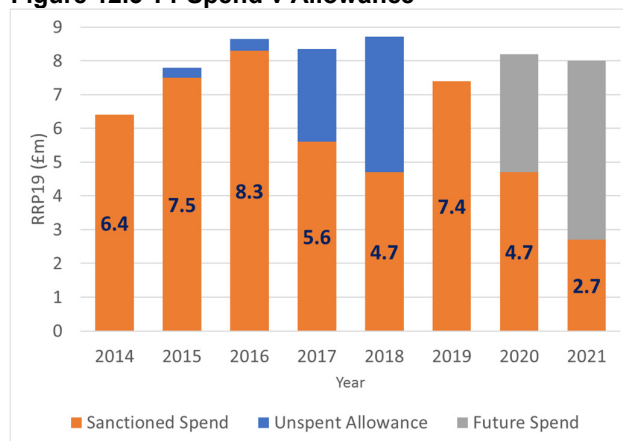
Our expenditure against 0.5% of NGET revenue for NIA is shown in figure 12.2. We have spent £47.3m of our allowance, leaving £7.3m not claimed (a ‘use it or lose it allowance’).

Figure 12.2 T1 Innovation costs

| Funding source | Number of projects | Investment |
|------------------------------------|--------------------|--------------------------------------|
| NIA | 161 | £47.3m NIA |
| Deeside Centre of Innovation (NIC) | 1 | £10m NIC £14m NGET |
| GIL Innovation Partnership (Totex) | 1 | £3m Siemens £3m NGET (sanctioned) |
| | 163 | £77.3m |

Figure 12.3 shows the breakdown of NIA spend against the allowance.

Figure 12.3 T1 Spend v Allowance



In 2017 and 2018, we had a strategic review of our innovation programme, focussing on building our capability and improving our plans. We focussed on closing down innovation projects to allow benefits to be rolled out. Due to this, we did not fully utilise our allowance (blue) in these years. As this is a ‘use or lose it’ allowances, this funding was returned to consumers. We have projects in the early stages of planning (shown in grey) which will fully utilise our innovation allowance for the final years of the T1 period.



Collaboration in the T1 period

To ensure that we remain responsive in this fast moving environment we have increased our stakeholder engagement.

We collaborate across all the networks and the Electricity Networks Association (ENA) and leverage funds to create more value, but we recognise that our wider collaboration could be improved.

Evolution of our innovation culture

We have started on our journey, equipping our people with the tools to make it easy for them to be creative and productive, and driving a diverse and resilient culture. This is underpinned through the adoption of Performance Excellence. We have learnt how to find innovative ways to solve problems, using tools like sprints and scrums, as well as good collaboration across the organisation. We are continuously exploring more ways to understand and enhance our innovation culture, and recognise that there is more to do.

We have supported our continuous improvement programme with a business change capability to support the teams when the implementation of the solution is more complex. During the T1 period, in addition to our NIA investment, we invested over £34m on continuous improvement and lean capabilities which make us more agile. And within ET today, we have over 60 business improvement projects identified and being tracked by our business change colleagues.

Historically, our innovation culture has been technically focussed. We have an ambition for innovation to be culturally focussed, and part of what everyone does but we have a long way to go to achieve this.

National Grid Partners (<https://ngpartners.com/>), is a 100% shareholder funded organisation, designed to strengthen our innovation capability across National Grid. Through this we are introducing our colleagues to innovation and an entrepreneurial culture as well as looking to partner with companies that provide clean, disruptive and unconventional solutions to help us drive change.

Our colleagues already get exposure to this culture through our regular employee communications using our internal channels: Town Halls, Round table sessions and knowledge sharing sessions. In the T2 period we will also run boot-camp style sessions for some of our colleagues, which will deliver training in lean start-up methodologies and agile delivery.

Through NG Partners we are evaluating innovative products from several USA based companies including:

- **Climacell** - who produce location specific weather forecasts that will allow for better balancing of weather-dependent renewable generation.
- **Sparkrecognition** - who utilise artificial intelligence to detect zero-day cyber security threats, which if

successful will deliver costs savings by reducing the risk of those threats and the risk of data breaches.

T1 benefits are embedded into our T2 plans

All our innovation projects with cost savings identified have been incorporated into our T1 plans and baked into our T2 plans. Chapter 9 *We will provide a safe and reliable network* provides further detail (in tables 9.13 to 9.17). For example, we innovated in alternative coatings for our transmission towers which allowed us to reduce the amount of steelwork that needed to be replaced as more could be refurbished. This contributed to a reduction in T1 costs by £148m (half of which is returned to consumers within the period) and T2 costs by £124m (100% of this is a consumer saving).

In the T1 and T2 periods, the completion and implementation of these innovation projects also provided non-financial benefits in terms of improved safety or reducing environmental impact. More detail can be found in annex NGET_A12.02 Innovation T1 Performance where we detail our innovation in overhead lines, transformers, protection & control, underground assets, safety & environmental, HVDC, Deeside & decarbonisation.

Comparison to external benchmarks

The external benchmark for a typical innovation programme delivers a return of £4 for every £1 spent. We have performed positively compared to this benchmark, completing 161 projects at a total cost of £47.3m. These projects are expected to deliver £748m of consumer benefit within the T1 period, providing evidence that your money is safe in our hands. As a guide, the potential benefits in the T2 period are expected to be at least £4 for every £1 invested.

Whole system approach

We have co-funded 8 projects with other transmission and distribution companies through NIA funds, and supported the implementation and roll-out of 27 other projects across the UK. This collaboration often provides opportunities for leveraged funding where we are contributing part of the funding towards a project with access to all the learning and outputs from that project. Over the T1 period, we have been able to leverage £250m of innovation for an investment of £13.2m.

Learning for the T2 period

One of the key things we have learnt is that to successfully deliver innovation in a particular period (e.g. a 5-year price control period), some innovation projects are required which enable innovation benefits in future price control periods. We have included within our plans the ability to develop this future benefit.



There is further information about lessons learnt in section 4 and section 7 of this chapter.

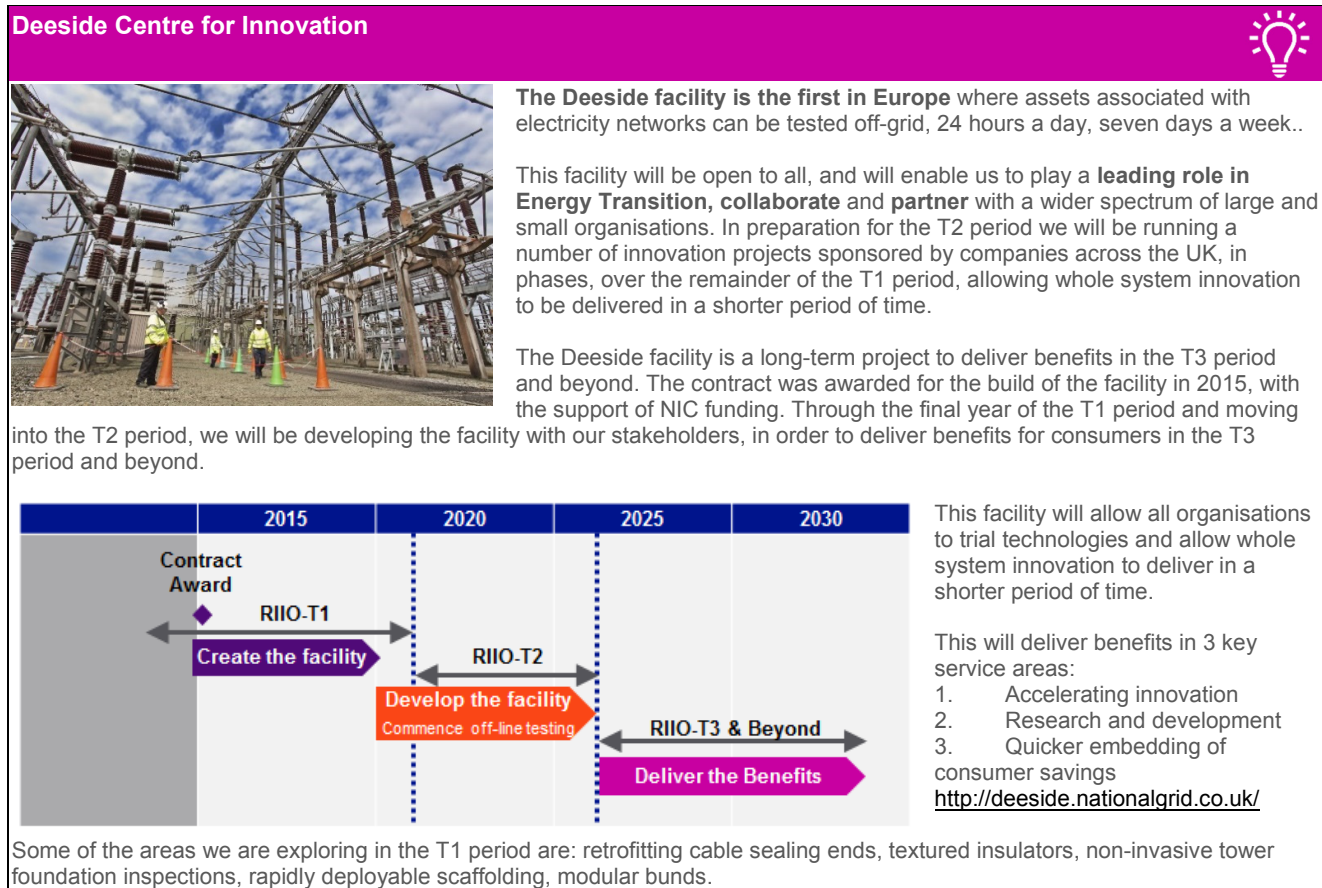
Over the T1 period, the number of parties we are collaborating with across the whole energy system and technology areas has increased, although we recognise our stakeholders need us to do more in this area. And so in the T2 period, we will continue to increase the number of parties with which we will engage and collaborate.

T3 and beyond

Our long-term strategy includes decarbonising future networks. Our **Deeside Centre for Innovation** is open for business for the industry, and is pivotal in enabling the future transition of energy. We are already delivering whole system benefits through collaboration and partnership at Deeside. The cross-sector Technology Advisory Board consists of transmission and distribution

companies in the UK and academic partners, and ensures we have an independent board representing the views of all stakeholders and new market entrants. We have shared the benefits of Deeside with the Electric Power Research Institute (EPRI), which includes collaboration with over 100 international electricity utilities on 21 projects, and through the Engineering and Physical Sciences Research Council (EPSRC), through joint working with academic institutions in the UK and over 300 UK and international organisations. We have also supported our suppliers and other UK infrastructure companies such as Highways England in ideation workshops as part of an Open Innovation programme. We are committed to making Deeside more accessible to SME's in the T2 period.

Figure 12.4 Deeside Centre for Innovation





3. What our stakeholders are telling us

Figure 12.5 Summary of engagement

| | Engagement on innovation |
|--|---|
| <p>Purpose and approach</p> | <p>Throughout the T1 period we have systematically increased our stakeholder engagement on innovation. This stakeholder engagement has moved from being primarily focussed on collaboration and seeking leveraged funding, to a stakeholder engagement framework where we seek stakeholder input to our strategy and innovation programme. In recent years, we have developed a stakeholder strategy and modified our governance to embed stakeholder feedback into our yearly plan which include:</p> <ul style="list-style-type: none"> • two stakeholder workshops per year • sharing & collaborating through industry forums & conferences (e.g. Low Carbon Networks & Energy Networks Association https://www.smarternetworks.org) • transparency and sharing of information through our 'imagining-tomorrow' website https://www.nationalgridet.com/imagining-tomorrow/innovation • regular social media communication (podcasts, twitter etc.) • monthly meetings with our strategic partners • sharing & collaborating at EPRI Conferences • exhibiting at Utility Week Live • collaborating and Engaging with CIGRE • leading & participating ENA Innovation Forums. <p>For the T2 period, our stakeholder engagement has been strategic in nature, leading us to carry out the following engagement activities:</p> <ul style="list-style-type: none"> • large workshops • supported by an online consultation • presentations at conferences • bilateral meetings • strategic partnerships with academic institutions • podcasts and social media (Twitter). <p>Our aim was to understand:</p> <ul style="list-style-type: none"> • our stakeholders' views on our proposed strategy • how important innovation is for our stakeholders in our business plan • what topics we should be focussing on • whether there are any views on how we should be funded for innovation activities moving forward • whether stakeholders agreed with our propositions and proposed funding levels. |
| <p>What stakeholders & consumers told us</p> | <p>We asked stakeholders multiple choice questions and open text questions. We developed the following conclusions:</p> <ul style="list-style-type: none"> • We need to share our challenges with you. This will allow our suppliers to propose innovative solutions earlier in the process delivering an increased number of cheaper solutions • We need to be more accessible, and more consistent. • We need to collaborate more. Tackling major challenges as a whole energy industry delivers better solutions for stakeholders. Pro-actively collaborating with a wider group of partners will deliver greater benefits. • We need to share more data. Getting the balance right between security and transparency is crucial in allowing our stakeholders to understand our challenges and propose better solutions. • We need to make it easier for SMEs to collaborate with us. • We should focus our innovation on the wider societal priorities of clean energy, driving down current and future consumer costs and opportunities for digitisation as well as the integration of the whole energy system and clean energy solutions for other sectors. • We should be transparent about how we have embedded our innovation into business as usual, ensuring that savings made in the T1 period are baked into our plans for the T2 period. • We should focus more investment on decarbonisation, and less on self-sustaining funding models and embedding culture (should be BAU). <p>61% of consumers surveyed felt that NGET should be a 4 or 5 on a scale where 5 is 'highly innovative.'</p> |
| <p>Key trade-offs and how engagement influenced</p> | <p>Embedding a culture of innovation across the business is a key topic for the Independent Stakeholder Group. We understand the benefits that this will bring. We identified this as a separate funding proposition for the T2 period, however our stakeholders informed us that we should be focussing more NIA investment on decarbonisation and less on culture.</p> |



| | |
|---|--|
| our plans | <p>We decided to remove this from our NIA propositions, and commit to improving our culture through our BAU activities by committing to deliver cultural improvements measured through the IDEO cultural survey (section 4 of this chapter).</p> <p>We were also informed that we should invest more on decarbonisation, hence we increased our proposals in this area, balanced from the reduced spend in other areas.</p> |
| How we've responded to the Independent Stakeholder Group and Challenge Group | <p>We have been challenged hard on our innovation proposals, these include:</p> <ul style="list-style-type: none"> • Strategy – we have shared our Innovation Strategy, and included a summary in this chapter. • Culture – we will continue on our journey to embed an innovation culture in our business, and have made it clear what our world looks like at the end of T2 through our IDEO survey commitments in section 4 of this chapter. • Engagement – we have broadened the stakeholders our engagement covers. • Monitoring – we have committed to work together with stakeholders to develop a joint transparent innovation monitoring framework. • Propositions – we have carried out further engagement to test our proposals with stakeholders. |

4. Our proposals for the T2 period

The diagram below summarises the Innovation Strategy we have developed with our stakeholders, and how this links to our proposals for the T2 period.

Figure 12.6 Our Innovation Strategy





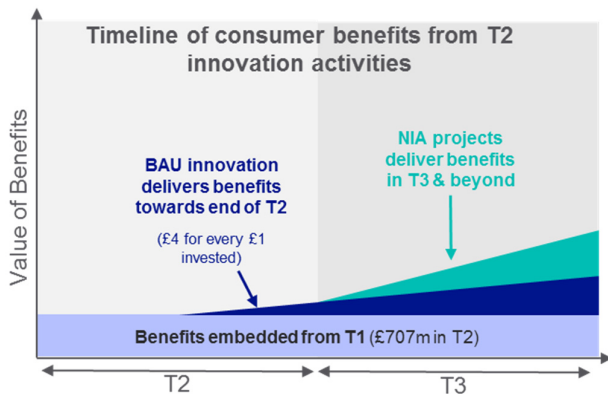
Additional allowance for rolling out previously proven innovation

We do not need any additional totex allowance in the T2 period to 'roll out' previously proven innovation. We are rolling out all our previously proven innovation through our BAU activities, which is already 'baked in' to our T2 business plans, reducing our business plan by at least £707m. Detail of this can be viewed in annex NGET_A12.02 Innovation T1 Performance.

T2 Innovation delivers benefits across different periods

Figure 12.7 shows how our T2 innovation activities will deliver benefits in different timescales. T1 innovation benefits which have been rolled out continue to provide benefit throughout the future, as we embed these into the business. Our BAU innovation activities will start to deliver benefits in the T2 period, and continue to deliver benefits as these are embedded into our T3 activities. T2 investment in our NIA projects will start to deliver benefits in T3 and beyond. Further detail can be found later in this chapter.

Figure 12.7 Timeline of T2 innovation benefits



BAU Innovation

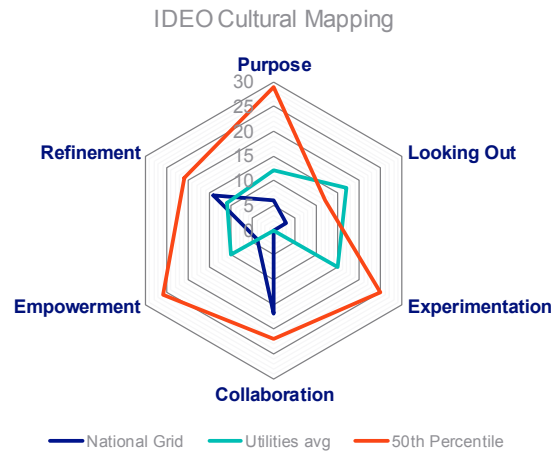
Our T2 BAU Innovation will be funded through our baseline Totex Allowance, with no additional innovation stimulus funds. Projects which deliver consumer benefits in the T2 period are included within our business as usual activities. Table 12.9 provides some further detail.

Innovation culture commitments

Our Innovation Strategy includes our ambition for National Grid is to be 'fit for the future' and change quickly to adapt to the changing external environment. We have created a roadmap to develop our leadership and management behaviours, and foster a creative environment, to augment and strengthen the culture of innovation across the organisation. We will measure our progress through year on year improvements on the IDEO Creative Culture survey, asking the Independent Stakeholder Group to challenge our delivery against our ambition. with the aim of developing from our current 'novice' status through the 'learning' phase and ultimately achieving 'expert' status within our organisational field.

The diagram below compares our current results (in blue), against an average for other utilities (cyan), and the 50th percentile (orange) covering all organisations.

Figure 12.8 Cultural Survey Mapping



To achieve these aims, we will introduce a targeted action plan focussing on critical improvement areas identified for each of the 6 creative qualities:

- **Purpose:** Empower employees through improved use of line of sight with organisational goals.
- **Looking Out :** Encourage teams to seek expert best practice and collaborate externally to improve decision making.
- **Experimentation:** Introduce prototyping to de-risk ideas and test/refine key elements early.
- **Collaboration:** Integrate innovation and execution functions through use of multidisciplinary teams with shared goals.
- **Empowerment:** Continue to improve delegated authority into the teams supported by a clear decision making framework.
- **Refinement:** Create an innovation forum with internal and external stakeholders to respond with agility and pace to changing stakeholders needs.

By the end of the T2 period, we will demonstrate above average performance on all areas of the creative quality index when compared to similar organisations, and be clearly on the **path to 50th centile performance** across all organisations on our key target qualities of Purpose, Empowerment and Collaboration. Delivering on this commitment will create a business that is built around a listening and collaborative culture, and which is focussed on meeting our stakeholders needs and requirements. We will be responsive, and visibly open to disruptive technologies and ideas that will transform our business in order to deliver the energy transition. Our stakeholders will see an agile business that is willing to experiment and try new ideas, and which is happy to dispense with accepted processes, procedures and technologies in order to continually develop, improve and grow. Through improved transparency, our ability to transform concepts and ideas into real world solutions which meet our strategy goals will be clear to all.



Table 12.9 BAU innovation activity areas

| BAU Innovation Creating T2 benefits and a platform for the future | | |
|--|---|---|
| Key areas | Description | Commitments |
| Embedding a culture of innovation | Improving our 'innovation culture' throughout the organisation | <ul style="list-style-type: none"> • Board level commitment to embed innovation into our BAU culture • Use IDEO cultural survey to improve purpose, experimentation, collaboration, empowerment, looking out and refinement • Adopting National Grid Partners 'centre of excellence' which establishes a shared understanding of the value innovation can bring, ensures consistent execution, tracking & enhances collaboration |
| Rolling out proven T2 innovation | Creating new innovation projects which deliver benefits within the period and rolling out the benefits | <ul style="list-style-type: none"> • Deliver technical innovation in OHLs, SGTs, Protection & Control, Cyber Security, Cables, Power Electronics & Network Management |
| Improving collaboration & attracting 3rd parties | Being open and accessible, and attracting a wider set of external stakeholders and 3 rd parties, including SMEs and other industries | <ul style="list-style-type: none"> • Hold annual conferences with other electricity networks to disseminate learning from innovation activities • Share specific learning through presentation at other network conferences and events • Create new data sets from our wider stakeholder set • Stakeholders will experience a consistent approach • Develop a portal for our innovation website where 3rd parties can submit ideas • Hold joint 'whole system' gas & elec calls for proposals and run yearly challenges on NIA propositions |
| Monitoring progress and outcomes | Developing a joint monitoring framework across the industry for a common method of measuring the progress and benefits of innovation activities | <ul style="list-style-type: none"> • Work with other network companies and the ENA to deliver a joint monitoring framework, which is publically available (see annex on Benefits Framework) |
| Being more transparent | Sharing our work, benefits and progress externally | <ul style="list-style-type: none"> • Be consistent in our approach • Striking the balance between open source data and the security of our network |

Network Innovation Allowance

There are some projects which do not deliver benefits in the T2 period, or deliver benefits to the whole energy system. These require additional innovation stimulus funds as it is not possible to derive a benefit for the consumer within the T2 period. We are therefore requesting additional innovation funds for the following areas, which deliver benefits relating to the energy transition or consumer vulnerability in the T2 period, T3 and beyond.

Our proposals for Health & Safety do not deliver benefits relating to the energy transition or consumer vulnerability, but reflect the need to continue to deliver a change in this area across the energy industry.

Table 12.10 NIA Proposals

| Network Innovation Allowance (NIA) Creating cost and environmental benefits in T2, T3 and beyond | | | | |
|---|---|--|--|------------------|
| Proposition | Description | Commitments | Consumer benefits | T2 Baseline (£m) |
| Reducing our carbon footprint | Reducing our reliance on harmful materials, and finding new materials that are more environmentally friendly | <ul style="list-style-type: none"> • Investigate alternatives to SF₆ which can be retro-fitted, avoiding the need for more costly asset replacement • Identify methods for reducing or eliminating cement requirements • Implement solutions with novel materials with a lower carbon footprint and which also help with the reduction of visual and environmental impacts • Create enhanced methods of measuring SF₆ leakage | <ul style="list-style-type: none"> • Lower greenhouse gas emissions • Lower costs associated with the management of SF₆ • Quicker availability of lower carbon products within the supply chain • Delivers our commitment to the energy transition | 8 |
| Facilitating whole systems energy innovation | The Deeside Centre for Innovation is a unique facility that will enable innovation that provides benefits in T1, T2, T3 and | <ul style="list-style-type: none"> • We will collaborate with other network companies and expand the facility in the T2 period, allowing the facility to be truly whole system and not just for electricity | <ul style="list-style-type: none"> • Faster implementation of newer low-carbon technologies • Reduced costs through quicker and safer 'off- | 30 |



| | | | | |
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| | beyond. This facility will be available to all networks to benefit the whole energy system, not just our network | <ul style="list-style-type: none"> • Include a facility to trial gas (hydrogen and liquefied natural gas) integration, electric transport technologies, and zero-carbon generation technologies • Open up the facility to SMEs • We will be transparent about the activities at Deeside, to allow all parties to share and collaborate regardless of fuel or network | line' testing and commissioning | |
| Facilitating decarbonisation of wider industries | <p>We know that helping society to decarbonise is the biggest contribution we can make to the environment</p> <p>We will use our expertise in this area to engage with and support other industries to decarbonise their processes</p> | <ul style="list-style-type: none"> • Lead the way to a low carbon future by implementing the government's Clean Growth Strategy • Facilitate electricity network's role in the transition to electric vehicles • Actively explore opportunities to support and work with other industries (transport, steel, cement) to identify and implement decarbonisation activities • Explore the appetite of other industries to move toward a hydrogen economy and the implications for transmission networks • Support industry in the development of technology and systems to help them participate in the future energy market | <ul style="list-style-type: none"> • Overall reduction in greenhouse gas emissions across other industries supporting the UK to achieve its emission targets • Greater flexibility in charging points for electric vehicles • Greener options available for heating in the home, transport, products and services | 13 |
| Digitisation (Further detail on our digitisation strategy can be found in annex NGET_A14.13 – IT Transform) | <p>The future energy system will interact, and be more dynamic than ever before. To respond to these challenges, we want to transform our business through digitalisation</p> <p><i>We have separately published our Digitisation Strategy on our website and provided a link to Ofgem. This strategy outlines how we will use technology and data to digitally transform our business and includes some initial thoughts on our response to the recommendations of the Energy Data Taskforce report on 'A Strategy for a Modern, Digitalised Energy System'</i></p> | <ul style="list-style-type: none"> • Investigate tools and techniques to allow the digitisation of maintenance, monitoring, and testing of equipment with automated archiving and analysis of information • Research and investigate algorithms for the mixture of data with various levels of accuracies and time-frames • Investigate risk in real-time to maximise asset performance and value • Investigate the potential of artificial intelligence, robotics and research sensors • Explore how artificial intelligence can be applied to our asset, financial and other data sets • Share data across the whole energy system (heat, transport, energy) | <ul style="list-style-type: none"> • Reduced whole system costs through the ability to collaborate with a common data platform • Reduced costs through improved real-time asset information allowing more informed risk based decisions • Improved analytics and intelligence in business support systems will provide information to allow lower cost decisions • Improved collaboration and sharing of data will create a more agile system, allowing cleaner technologies to access the system quicker | 22.5 |
| More responsive & agile for our customers | <p>Future customers (solar farms, windfarms, industry etc.) want quicker and easier access to the system, to allow them to produce clean energy as efficiently as possible</p> <p>In the T2 period, we will develop tools which allow us to respond to our customers' needs, connect them to the network more quickly and cheaply, and allow us to deliver our future work more efficiently</p> | <ul style="list-style-type: none"> • Produce offline tools to replicate our live network, allowing us to respond to customers more quickly • Create new assets and installation methods that can be quickly deployed and moved around the UK to support the fast connection of customers | <ul style="list-style-type: none"> • Lower costs through improved optimisation of network operations • Quicker connection of renewable generation • Improved customer experience | 7.1 |



| | | | | |
|---|--|---|---|-----|
| Addressing vulnerable consumers | The initial transition to cleaner energy could have a negative impact on consumers who could be left behind by the transition | <ul style="list-style-type: none"> • Collaborate with parties closer to consumers (suppliers, DNOs, supply chain) • Explore our role in this area with stakeholders (leadership or supporting) • Collaborate with SMEs to develop further understanding in this area of how we can support vulnerable consumers | <ul style="list-style-type: none"> • Ensuring vulnerable consumers are not 'left behind' in the transition to cleaner energy • Focussing our strategy to deliver cheaper energy to vulnerable consumers • Employment and education opportunities | 2.2 |
| Step change in Health & Safety | The safety of the public, our staff and our stakeholders is our number one priority. Our aim is that there are no injuries resulting from our operations | <ul style="list-style-type: none"> • Lead research into new safety technology for the whole energy industry | <ul style="list-style-type: none"> • Improved safety for the public and for our staff | 1.2 |

Strategic Funding Innovation Pot (SFIP)

The SFIP replaces the the Network Innovation Competition (NIC) which was successfully utilised to progress the initial stages of our Deeside Centre for innovation. There have been no funding proposals set out yet by Ofgem, we therefore propose that this pot is focussed on the following areas:

1. Enabling the transition to net zero by 2050. Additional stimulus funds in this area will allow us to meet our commitments set out in our business plan on net zero.
2. Finding solutions to nationally significant challenges such as the future of transport, heat and network resilience.

5. The justification for our proposals

Your innovation money is safe in our hands. We have an excellent track record of providing benefits which exceed external benchmarks. Despite our excellent track record, we recognise that there are areas that we must improve on in the T2 period. We have committed to making a step change in culture.

We are requesting a **single allowance** for NIA in the T2 period. This provides efficiency benefits and savings over an annual allowance or project by project framework.

We are proposing to **fund 10% of the NIA spend ourselves**, reflecting our confidence in our track record of creating benefits through our innovation activities.

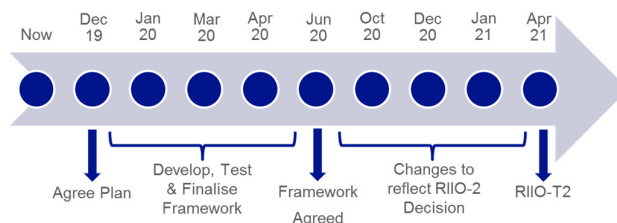
We conducted our first **IDEO cultural survey** in August 2019 across the whole electricity transmission organisation. We are committing to use this approach as our mechanism for measuring innovation culture. We have used these results to target what we need to do and to define our target for innovation culture by the end of the T2 period.

Delivering a joint monitoring framework for innovation

Under the ENA Gas Innovation Governance Group (GIGG) and Electricity Innovation Managers (EIM), Gas and Electricity Networks have worked collaboratively in preparation for the T2 period to inform the wider industry of the adoption of a benefit tracking methodology that delivers a wide range of benefits to network customers and wider stakeholders.

The timeline for developing the framework is shown below in figure 12.11.

Figure 12.11 Innovation benefits tracking timeline



A copy of the ENA Benefits Reporting Framework can be found in annex NGET_A12.03 Innovation Benefits Framework.

International standard for innovation management

In 2019, a new international standard on Innovation Management: ISO 56000 is expected to be published. This is aimed at providing organisations with guidelines and processes that enable them to get the most of their innovation projects. This includes:

- tools & methods for innovation partnership
- innovation management assessment
- innovation management system.

We have collaborated with the consultation process providing input into the standard, and we are committed to being one of the first to achieve the new international standard.



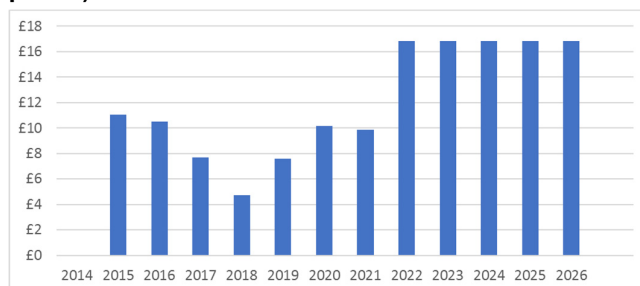
6. Our proposed costs for the T2 period

Our proposed costs for delivering against our propositions for the T2 period on this priority are detailed within table 12.12 below. We are proposing to fund 10% (£8.4m) of the NIA projects ourselves, leaving £75.6m to be funded through the allowance).

Table 12.12 Proposed baseline costs for the T2 period

| Output type | Non-Totex NIA (£m) |
|---------------------------|--------------------|
| NIA | 84 |
| TOTAL | 84 |
| Pension allocation | 0.1 |

Table 12.13 T1/T2 NIA Expenditure Profile (£m 18/19 prices)



T2 profile is deliberately flat to reflect NIA projects not yet developed.

Innovation spend governance

Our innovation governance has two parts:

- Annually, our Innovation Strategy is updated using the outputs from stakeholder engagement. This Innovation Strategy is discussed and approved at the electricity transmission executive committee and includes key themes we are seeking to address based on this stakeholder feedback.
- Individual projects are developed to address this strategy and are approved following our investment process with the approver being dependent on the

level of spend based on established delegated authority levels. This means smaller schemes are approved in the line and larger schemes are approved at our investment committee.

7. How we will manage risk and uncertainty

In the T1 period, there are 14 NIA projects that we have decided not to implement because they will not deliver benefits for consumers. We always review unsuccessful projects for lessons learnt.

The following are specific lessons we have learnt from unsuccessful projects:

- the technology is not yet mature enough for the intended application
- the cost of implementation outweighs the benefits
- the complexity of solution if implemented would cause an unacceptable level of risk
- the outputs of the project will not deliver in a timescale where the benefits can be realised.

We deliver innovation as a portfolio of projects. The risk of a project being unsuccessful is managed against the consumer benefits that innovation can bring. Stakeholders want us to take additional risk in the T2 period and invest more in innovation that benefits the whole energy system and other sectors.

We recognise the changing picture within the energy industry, and the rapid pace in which decarbonisation is affecting all of our lives. The pace of change is so high that our current plans in 2019 may not deliver our stakeholders' requirements at the start of the T2 period in 2021. To manage this uncertainty, we propose an uncertainty mechanism in the shape of a **reopener** in 2022. This will allow us to change our plans, in agreement with Ofgem and our stakeholders, to ensure we continue to meet the needs of all of our stakeholders.