

Northern Gas Networks Young Innovators Council



Session 5: NGN's innovation strategy

November 2023

Facilitated and written by Solutions for the Planet

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(YIC, S4TP, Northern Gas Networks and other)
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1. Overview of session

2023 marks the third consecutive year of Northern Gas Networks' Young Innovators Council (YIC) led and facilitated by Solutions for the Planet (S4TP)¹. The YIC continues to be the voice of young people (aged 14-19) at Northern Gas Networks (NGN). It provides young people's perspectives and Northern Gas Networks ensures these young people's thoughts and opinions are put at the heart of the business' decision making.

Each session agenda is co-created by S4TP and NGN, influenced by the YIC's input on what topics are most important to them. The aim is for meaningful and relevant engagement which provides an opportunity for the YIC members to influence decision-making at Northern Gas Networks. This year, the YIC is made up of 32 young people aged 14–19 based across the footprint of Northern Gas Networks. Four other young people were members of the YIC this year, but have had to leave due to other commitments (mostly relating to school.)

YIC 2023 Session 5: NGN's innovation strategy

This report provides a summary of a bonus fifth session of the Young Innovators Council for NGN which took place on Wednesday 8th November. The recommendations generated come from the discussion and feedback the young people provided. As this was an additional session, the young people had less time to schedule it, which led to an attendance of 11 (*with contributions from a total of 16 YIC members, including 5 non-attendee reflections, which have been embedded*). This session focused on innovation at NGN and how it will be integrated into their business strategy in the upcoming years.

Background to the session

The energy industry is changing at an incredible pace. The cost-of-living crisis, climate change and geopolitical uncertainties pose significant challenges that the energy sector must rise to extremely quickly. Innovation and the way NGN uses technology has a crucial role to play in meeting these challenges. In NGN's first price control period, the innovation strategy focused on reducing costs and delivering efficiencies, through innovating in tools and equipment to do operational jobs better. Over the last 2 years, the focus has been more on researching and developing insight to inform processes, rather than developing a widget or a gadget. NGN is now reflecting and updating its innovation strategy. The business believes it is continuing to push boundaries, and therefore needs to make sure that their innovation strategy can help create a network that meets future customer expectations and needs.

Objectives of the session for NGN

- To understand what innovation means to the YIC.
- To understand what the YIC's priorities are for the future of innovation at NGN.
- To understand where the YIC think NGN should focus its innovation funds.
- To have a set of principles that can create a manifesto to underpin NGN's decision making around innovation, mindful of the priorities and needs of our future customers.

¹ Solutions for the Planets' Youth Insights Programme: <https://www.solutionsfortheplanet.co.uk>

Prior to the session, the YIC were asked to read NGN innovation reports from two different time periods, to give them a chance to understand how innovation has changed at NGN:

- [An innovation report from four years ago](#)
- [The latest innovation report](#)

Zoom main room, breakout rooms, chat functions and whiteboards were used to host an introduction to the topic and slides from the expert witness, and to explore the session objectives in further detail. Slido was also used to prioritise and collect breakout room reflections.

Witness: Nick Smith, Innovation Lead at NGN

- Explained the principles of innovation funding at NGN ('RIIO'): how they get money, how that makes them different to a private sector business, and how they have to spend funding wisely and effectively.
- Introduced the innovation approach at NGN to date, and then present new thinking and focus for next three years.
- Explained the meaning and purpose of cost benefit analysis / social return on investment (CBA/SROI) and measuring impact

Agenda

Time	Activity	Lead	Room (M/BO)	Timings (mins)
5:15	Welcome	S4TP/NGN	M	5
5:20	Activity 1: Slido work cloud	NGN	M	5
5:25	Witness presentation 1: Nick Smith <ul style="list-style-type: none"> • Introduction to RIIO • Innovation at NGN • 2 examples of innovation initiatives at NGN 	NGN	M	15
5:40	Activity 2: Slido quiz	NGN	M	10
5:50	Witness presentation 2: Nick Smith <ul style="list-style-type: none"> • Future thinking around innovation at NGN • 4 predicted focus areas 	NGN	M	10
6:00	Activity 3: Dot voting to allocate innovation funds <ul style="list-style-type: none"> • Time to ask the YIC questions about their choices 	S4TP	M	10
6:10	Activity 4: Breakout room discussions to explore YIC's priorities for NGN's next innovation strategy.	All	BO	20
6:30	Feedback	All	M	15
6:45	Thanks and finish			

Table 1: Proposed agenda; YIC 2023 Session 5

2. Attendees

Young Innovators Council

Amiee	Lucy
Anisha	Mary
Druvan	Theo
Ellie	Thomas
Georgina	Toby
Kate	

11 attended out of 32 panel members

Solutions for the Planet

Fran Isherwood Youth Insights Coordinator

Northern Gas Networks

Alex Brightman	Hydrogen Home Co-ordinator / Energy Futures Educator
Kati Sexton	Customer Care Officer
Hollie Scott	Stakeholder Coordinator
Lili Vastel	Business Admin Apprentice (<i>observer</i>)
Jenny Wilkinson	Stakeholder Manager
Nick Smith	Innovation Lead

3.Key Discussion Points

What do you think of when we say innovation?

Before doing anything else, it was important that we gauged what the word innovation meant to the young people in their own contexts, without any input from NGN:



Figure 1: Slido word cloud results; 'What do you think of when we say innovation?'; YIC 2023 Session 5

Witness presentation and Slido quiz

Nick explained that NGN receives funding from Ofgem through a process known in the industry as RIIO (Revenue = Incentives + Innovation + Outputs). NGN are currently halfway through a price control period called RIIO GD2, which runs 2021-2026. They have just begun planning for the next price control period, RIIO GD3, which will run from 2026-2031 – and it is this looking forward and planning for this time that they want the YIC’s insights on.

NGN Innovation Funding – RIIOGD2


- **Network Innovation Allowance - £11.5m**
 - Research, Development, or Demonstration
- **Net Zero and Re-Opener Development (UIOLI) - £4.5m**
 - To fund small Net Zero projects and for early development work on projects that we intend to bring forward at a later stage through other funding.
- **Strategic Innovation Fund (SIF) - £450m Combined (£10m per project)**
 - The SIF is additional innovation funding which we can apply for and is focused on achieving Net Zero and the energy system transition, whilst delivering benefits to energy consumers.
 - It does this through a multi-staged approach designed to address the biggest challenges facing us and other energy networks.

Figure 2: Screenshot of witness presentation, explaining innovation funding pots at NGN; YIC 2023 Session 5

Nick’s first presentation was followed by a quiz about two realistic, yet hypothetical, innovation projects that might receive funding at NGN. The aim was to illustrate short- and long-term project timelines, as well as different values, e.g. cost, social and environmental benefits, save business money versus automation and potential job losses, etc. It also invited the young people of the YIC to think about how they measure the value of an innovation project. This in turn provided some context for how this compares with NGN’s cost benefit analysis / social return on investment (CBA/SROI) model.

Project 1 – Enviro Boards

Cost benefits	£5.4m over 5 years
Benefits	Environmental – Re-usable vs existing solution Improved Customer Perception Cost Avoidance (Fines) Avoids damaging customers grass/ landscapes Reduces muck and mess - a big area of customer complaints and potential fines
Risks	Cheaper single use plastic alternative (Visqueen Sheeting) Use of this relies on our engineers and a willingness to adopt new ways of working



Project 2 – Street Score

Cost benefit	>£100k, this project focuses on cost avoidance instead of cost saved.
Benefits	Cost Avoidance (Fines & MOP Injuries) HSE - Improved customer safety whilst navigating through street works Customer – Improved Customer Perceptions Stakeholder – improved engagement between network operators and community groups
Risks	Relies on stakeholder inputs Requires further action or risk of participative engagement (No accountable actions) Behaviour change




Figure 3: Screenshot of witness presentation, examples of NGN innovation projects; YIC 2023 Session 5

The results of the Slido quiz [Appendix 1] showed that the YIC had a good grasp of the multifaceted social and environmental costs and benefits of work carried out by NGN. Most of the young people present correctly answered questions about who the multiple benefactors and benefits are for each project; from the NGN work force, vulnerable customers, right through to the environment and reduced pressure on health services. In contrast, they didn’t score as highly when it came to assessing the financial costs vs short- and long- term financial payoffs. This is understandable given the complexity of this work and the YIC’s possibly limited exposure to business finances, but shows that it is a really useful insight for them to gain into the finances of this business and its operations.

Nick's witness presentation then moved on to explaining where NGN think their innovation programme will need to be focused in the upcoming price control period:

1. Whole energy systems: linking electricity, gas and water together.
2. Enabling sustainable local and regional communities: innovation to support local authorities, net zero teams and community networks to enable net zero through energy planning and decarbonised transport, etc.
3. Customer vulnerability and transition: innovating to minimise the impact of any transition to a non-methane energy network and ensure it's a fair and just transition.
4. Decommissioning a 100% methane network and operational deficiencies for blending.

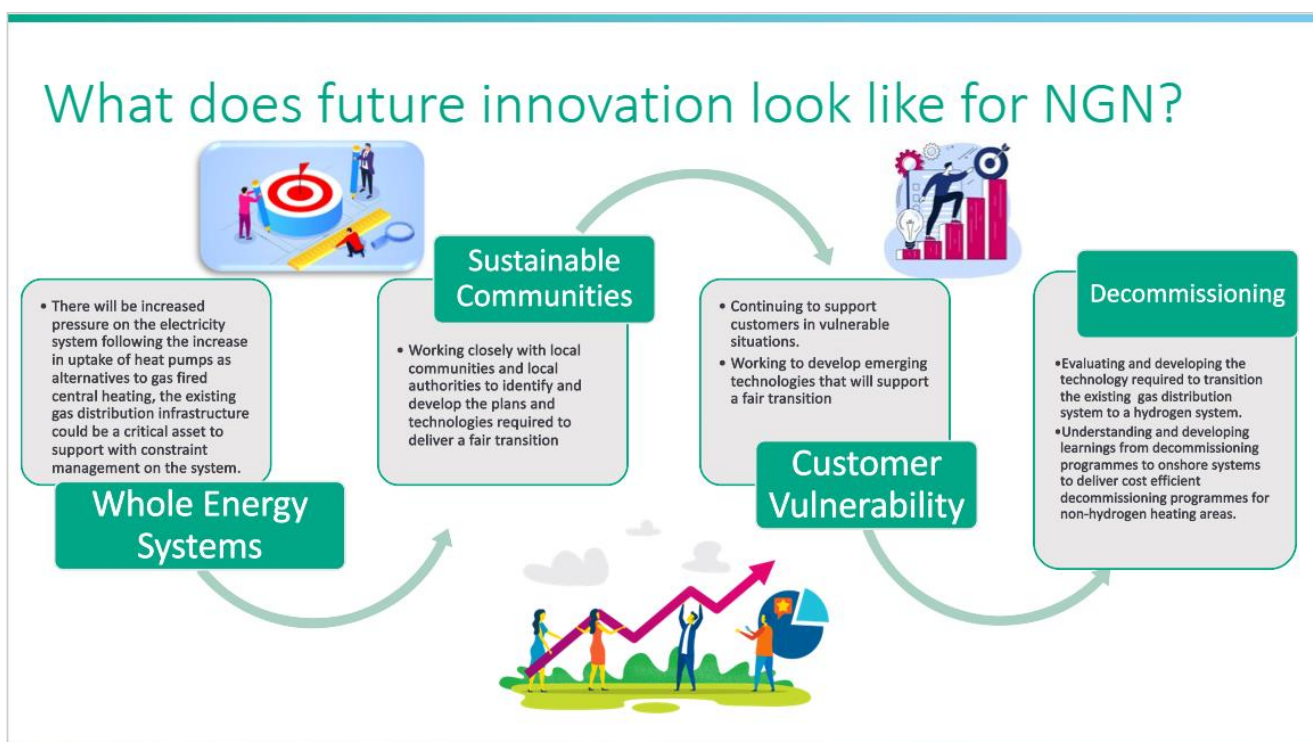


Figure 4: Screenshot of witness presentation, NGN's predicted innovation focus areas; YIC 2023 Session 5

We then asked the YIC how they would spend a hypothetical £10 million if they had that budget for innovation projects at NGN.

- How do you split the money?
- Does it all go in one focus area?
- Do you share it out equally?
- Are there some areas which you think have enough, and so don't need as much attention going forward?

NGN's Innovation

Future Innovation

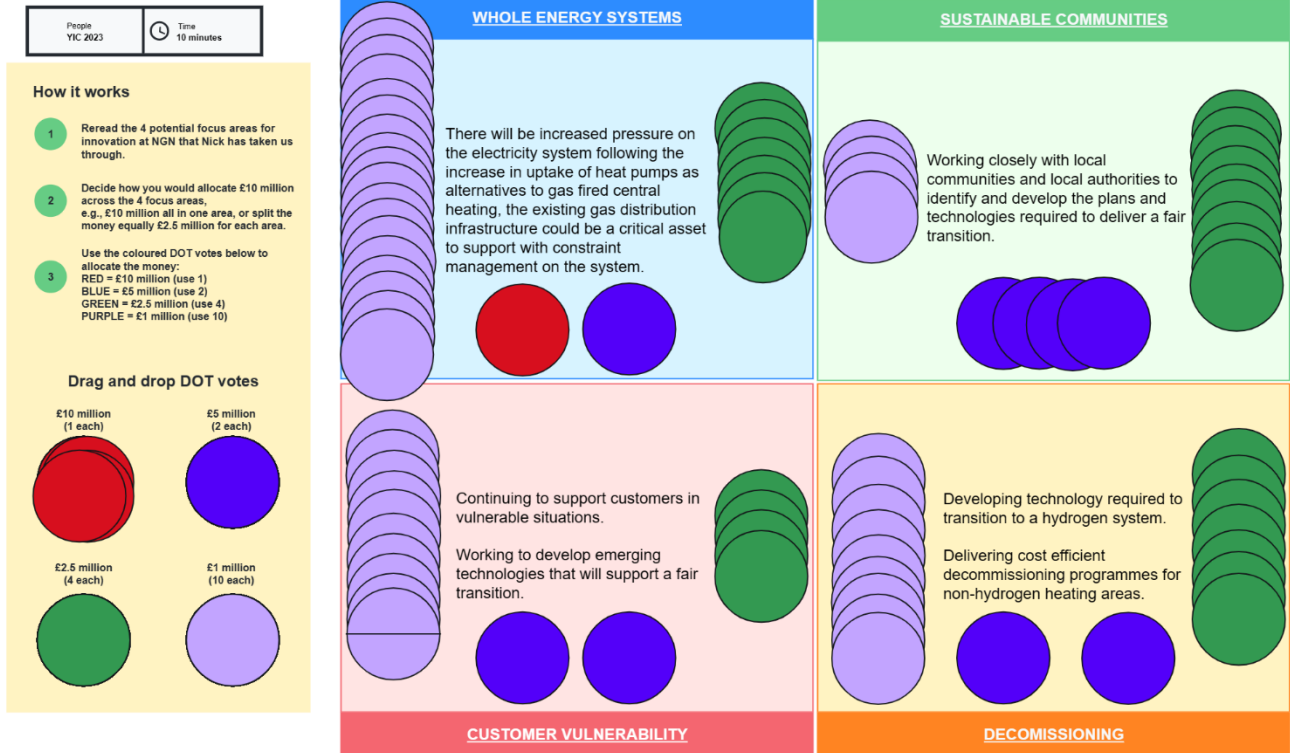


Figure 5: Activity 3, where should the money go?; YIC 2023 Session 5

The YIC allocated the money was follows:

- £50.5 million to whole energy systems
- £46.5 million to sustainable communities
- £36.5 million to decommissioning
- £29.5 million to customer vulnerability

Luce: £5 million customer vulnerability in and £5 million in sustainable communities

- Gave the example of decommissioning of powerplants as a huge challenge to those employed in our existing energy industries
- Risks of funding decommissioning projects before replacement infrastructure is put in place, leading to economic crises in specific areas, leading to deprivation

Nick's response:

- Exact challenge faced by NGN and the energy industry.
- Approximately 75-80% of UK homes are currently heated by natural gas.
- If we turn that off prematurely, not only will people suffer reduced/limited access to their energy but there will be unhappiness due to unemployment.
- The government has not made a decision on decommissioning yet. If it does have to be done, the work will be around how it is done efficiently, cost-effectively, safely and fairly – for customers and the workforce.

Theo: prioritised money for whole energy systems, £1 million each to customer vulnerability and sustainable communities, and the rest to decommissioning.

<ul style="list-style-type: none"> • Customer vulnerability and sustainable communities don't need as much money to operate effectively. • More money is needed for whole energy systems and decommissioning because the money doesn't go as far in each of these focus areas, as they are much more expensive prospects.
<p>Toby: £10 million on whole energy systems</p> <ul style="list-style-type: none"> • It's most important to develop with the new technology. • <i>"the best innovation strategy would involve some sort of preparation for the future of business, rather than a creative way to make money in the present. It seems we're moving away from fossil fuels for obvious environmental reasons, so that's why I think looking for completely new solutions is more likely to succeed than finding a slightly better alternative in the present."</i>
<p><i>*The following responses are from YIC members who were unable to attend this session so sent their thoughts afterwards. Their funding allocations have been reflected in Figure 5.</i></p>
<p>Lauren: <i>"I would focus the £10 million on sustainable communities to allow better infrastructure to be made from sustainable waste, reducing the amount of toxins from plastics that end up in landfill. I would also allocate half of the budget to spend on customer vulnerability, to allow people in less advantageous areas to access safe and reliable homes that can be enjoyed by the whole family."</i></p>
<p>Kaitlin: <i>"I would allocate the money relatively evenly, however, invest a slightly larger amount into the customer vulnerability section - I find this really important."</i></p>
<p>Bradley: <i>"I don't think I could allocate money to the 4 projects without knowing more about how large they are and how much they could cost, so I ranked them from most to least important in my opinion. (For example, one project might be more important but require less money to be completed.)"</i></p> <ul style="list-style-type: none"> • <i>Customer Vulnerability. I think this is the most important because if the entire system develops without technology to support vulnerable customers, then they're going to end up relying on outdated and potentially expensive technology, which will make them even more vulnerable. By focusing largely on vulnerable customers NGN can ensure they don't fall behind.</i> • <i>Sustainable Communities. I think this is an important project because you can't make large decisions on changing an energy system and you can't implement a new hydrogen system without first identifying all the needs of communities to ensure that they can be delivered after the transition to a different system that has taken its place.</i> • <i>Whole Energy Systems. I think this is an important project because once the amount of energy that will be needed has been identified the energy system will need updating to be able to keep up with the additional pressure from these requirements, and it must be done before decommissioning because otherwise people will be left without vital systems like heating which was mentioned.</i> • <i>Decommissioning. I put decommissioning as the least important because, even though its the main goal of all of these projects, it relies on all of them being completed before it can take place. Otherwise, people will be left without enough energy and gas to support their needs."</i>
<p>Oliver: <i>"Personally, I think the main focus... should be equally split (£3 million each) between the whole energy systems and decommissioning... Meeting demand and innovation in energy supply. With meeting demands, this will enable the company to</i></p>

maintain revenue and ensure customers feel secure with the company. However with the other majority going towards the decommissioning to hydrogen, this will continue to make progress into the innovation and future proof the supply of energy in the country. If developed and implemented correctly, NGN could become an industry leader in the hydrogen energy sector with possibilities for expansion into other areas of the UK... Now with NGN already being very accommodating to vulnerable customers, as well as the community input, I believe £1.5 million should be allocated to allow NGN to continue to comfortably provide for the vulnerable. And the remaining £2.5 million I feel should be allocated into the transition plans in communities as this should also provide a long-term solution for the hydrogen plans and improving community relations. This community focus on the plans also means the company can plan around the vulnerable areas giving them more attention and a long-term solution.”

Table 2: YIC reflection on allocating innovation funds; YIC 2023 Session 5

4. Key recommendations (priorities)

Breakout session

The Young Innovators Council were asked to discuss what they each think NGN's priorities should be for their innovation strategy in the coming years; what values should be at the heart of NGN's innovation projects, regardless of what Ofgem's stipulations are?

1. People being at the centre of everything: responsive to people's changing needs, with public engagement underpinning all innovation.
2. Communicating with customers is key from an innovation project perspective; if NGN is going to be doing something different, clearly the public want to know about it and feel safe.
3. Social and environmental responsibility go hand-in-hand:
 - Prioritising work that impacts the environment positively will have a trickle-down effect to the communities that are most heavily impacted in the energy industry.
 - I.e., Considering vulnerable customers, you can't help them transition to sustainable options and renewable energy if you haven't actually got the things there to help everyone transition fairly.
 - NGN as a gas company should be working to reduce waste and issues caused by procuring gas and distributing gas, by investing money into greener ways to improve energy circulation.
4. Collaboration within the decommissioning agenda is an important priority. Many of issues with taking down the old system come from other companies laying utilities on top of unused infrastructure. This could cause issues if it needed to be removed, as work will take longer to complete, putting strain on vulnerable communities.
5. Innovation projects should efficiently deliver both short-term impacts with long-term benefits. This will help to ensure long-term thinking and have reputational benefits for NGN as they're seen to be at the forefront of innovation.
6. Continue to include and actively seek and listen to different voices and perspectives, ensuring they're included in the decision-making process.
7. There should be absolutely no negative impacts on the environment or communities.
8. Targets should be in place so that NGN can be held accountable.

5. Conclusion

It is clear from the Slido work cloud [Figure 1] that sustainability is at the very heart of the Young Innovators Council's perception of innovation. The key words extracted are 'sustainability', 'improvement' and 'accessibility'. This suggests that their aim for innovation is that it is forward-thinking, evolving services and products for a wide variety of stakeholders (including people and the environment) – but never to the detriment of accessibility.

Customer experience is important to the YIC. It underpins a lot of their thinking, across all innovation projects. They reiterated that NGN needs to be honest and keep people informed. This is especially needed when taking risks from a new ideas perspective: the safety of the customer should always come first.

Support for vulnerable customers is included in the YIC's reasoning for several of their priorities for innovation. Interestingly, the much larger portion of innovation funding that was allocated to whole energy systems, sustainable communities and decommissioning, in comparison to vulnerable communities, suggests that they don't necessarily think this is where innovation money should be spent. However, this is largely down to their belief that a very specific and separate pot of money should be used to continuously support and improve the lives of these communities. This doesn't negate the YIC's focus on vulnerable people: they all highlighted that investing effectively elsewhere will always benefit the most vulnerable in the long run.

For example, one YIC member explained that investing in renewables, links and encompasses all other innovation focus areas. If the future of energy is developed more, it's going to be easier to implement carbon neutral change overall, having a positive knock-on effect.

It is worthwhile mentioning here that the global scale of the threats of the climate crisis, and allocation of responsibility for those problems of environmental damage, was raised again by the YIC in relation to this topic. One member said, *"I'm sure I saw something about how a single Chinese energy company produces more greenhouse gasses than the UK and 2 other European countries combined, so on a global scale the environmental impact of what NGN will do would be so unnoticeable."* Whether this is true or not, it is a reminder that the YIC are extremely conscious of top-level accountability². This was a powerful factor in that a lot of the discussions from this session revolved around how being a socially and environmentally responsible business should be the main driving point of innovation.

² See another example of this thinking from the YIC in the report from Session 4: [YIC 2023 Session 4 Report](#)

6. Appendices

Appendix 1: Slido quiz results

Project 1: Enviro boards

What do you think the cost is to deliver this project over 5 years?

£0-£100k

0 %

£100k- £250k

0 %

£250k - £500K

0 %

£500k +

100 %

How much money do you think NGN saves over 5 years?

£0 - £100k

0 %

£100k - £500k

38 %

£500k - £1m

13 %

£1m - £5m

38 %

£5m+

13 %

Who do you think benefits from this project

(1/2)

NGN work force ✓



Customers ✓



Business customers ✓



Vulnerable customers ✓



Environment ✓



Community ✓



Local Authorities ✓



What do you think are the social and/or environmental benefits to this project?

(1/2)

Protects grass and landscapes ✓



Savings on household bills



Reduces muck and mess ✓



Reduces fines and complaints ✓



Reduced accidents



Improved customer perceptions ✓



Improved air quality



Savings from road repairs



What are the problems or challenges to this project

Cheaper alternative solution available ✓

14 %

Reliant on engineers ✓

43 %

Willingness to adopt new ways of working ✓

71 %

Cost of maintenance of boards

71 %

Project 2: Street Score

What do you think the cost is to deliver this project over 5 years

£0-£100k

22 %

£100k - £250k ✓

11 %

£250k-£500k

44 %

£500k + ✓

22 %

How much money do you think NGN saves over 5 years?

£0- £100k ✓

0 %

£100k - £500k

11 %

£500k - £1m

33 %

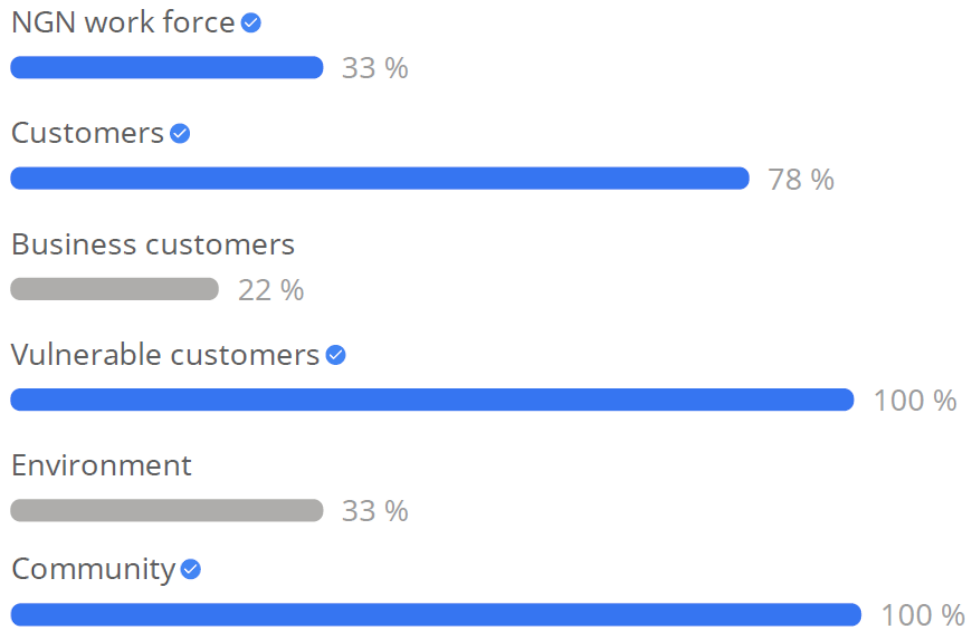
£1m-£5m

44 %

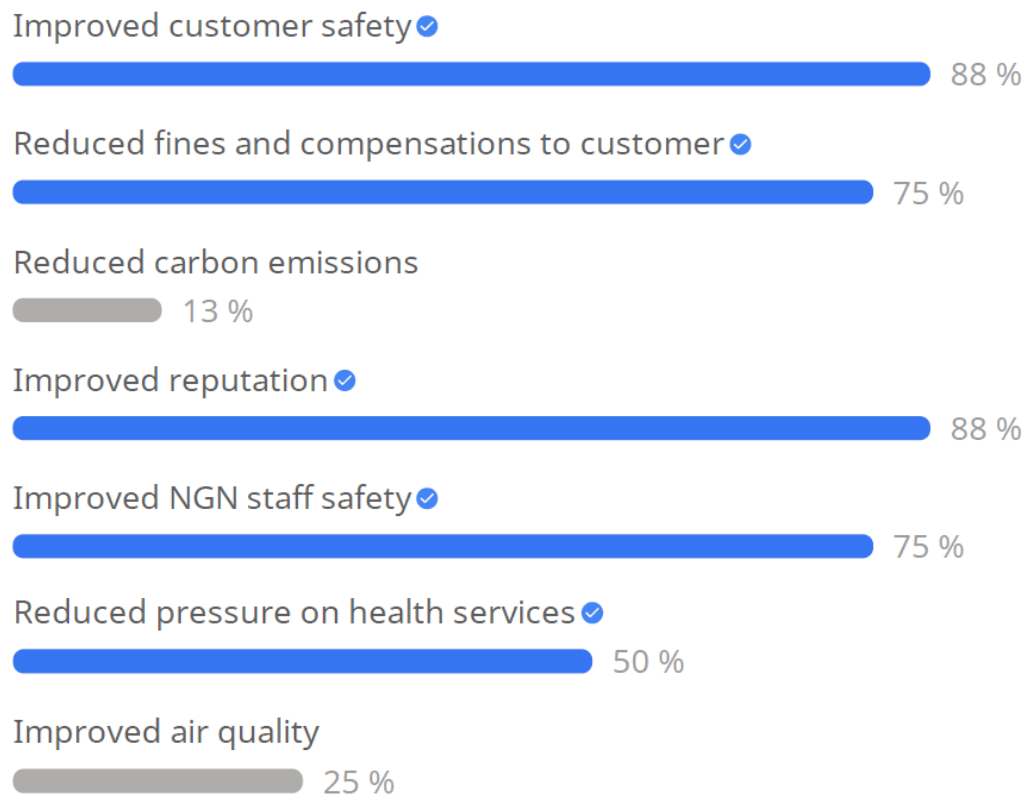
£5m+

11 %

Who do you think benefits the most from this project (1/2)



What do you think are the social and/or environmental benefits to this project? (1/2)



What are the problems or challenges to this project

Reliant on community and stakeholder input ✓



Not mandatory or enforceable ✓



Behaviour change in engineers ✓



Increase in impact on highways and traffic management costs ✓



Prioritising changes to be made

