NATIONAL GRID ELECTRICITY TRANSMISSION

Environment workshop: summary feedback

Sandown Park, 26 June 2018

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EXECUTIVE SUMMARY

- As the England and Wales Electricity Transmission network, we held a workshop on 26 June 2018 at Sandown Park as part of our wider programme of stakeholder engagement
- The aim of this workshop was to consult stakeholders on the parts of our business plans which relate to our impact on the environment, and in particular, to give stakeholders the opportunity to shape our future plans and processes as we prepare for the next regulatory period, RIIO-2, which begins in 2021
- Through previous engagement, including our 2017 workshops, online consultations, research surveys and ongoing conversations, the environment has been identified by our stakeholders as one of their priority focus areas
- We provided options to stakeholders, supported by costs where possible, to allow them to make informed decisions about the choices they would like us to make, and gave them the opportunity to suggest additional options to us
- 32 stakeholders representing 26 organisations attended the workshop, covering nine of our main stakeholder segments
- The workshop was themed around the topics of our investment decision-making process, the visual impact of our assets, our carbon emissions, construction activities and how we manage our assets. The slides are available here.
- We will incorporate what we heard at the workshop with the feedback from our online consultation and other engagement activities, and with input from our Stakeholder Group and Ofgem's Consumer Challenge Group, use this to develop our RIIO-2 business plans
- We will publish the first draft of these plans in early 2019, so that stakeholders can review our proposals and let us know whether we've correctly interpreted their requirements
- We will continue to share updated plans with stakeholders before final submission to Ofgem in late 2019

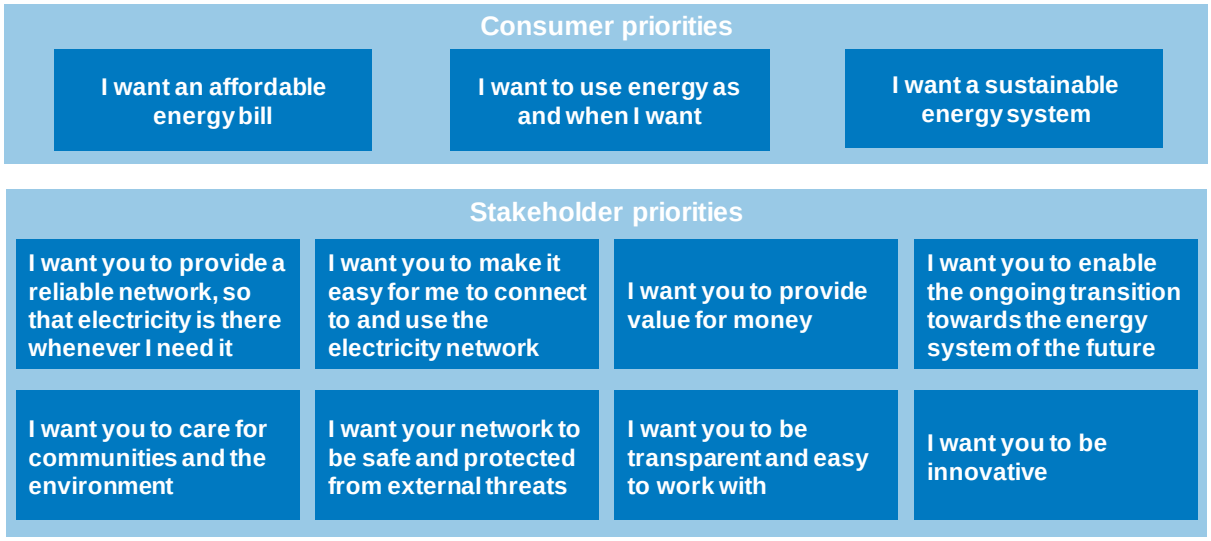
Headline summary

- There was a clear message that we should make investment decisions based on the whole life cost of each option, including the cost of carbon, and use this approach to help minimise our overall carbon emissions
- We should focus on overall volumes of SF_6 leaked and continue efforts to find alternatives
- Visual impact continues to divide opinion, although the majority of attendees were largely supportive of our current approach
- We should look to minimise the carbon impact of our construction activities and potentially use carbon offsetting to make these activities carbon neutral

Context	Objectives and format	Workshop attendees	Stakeholder feedback	Next steps

1. CONTEXT

In 2017, we ran a programme of engagement activities as the England and Wales Electricity Transmission network[1] to understand our stakeholders' priorities and explore what they would like us to focus on in our future business plans. From this engagement, we established eight stakeholder priorities and three consumer priorities, as shown below (for more details, please click here). Caring for the environment is one of these.



Using these priorities as the basis for our engagement topics, throughout 2018 we are talking to stakeholders about what they would specifically like to see in our plans for the next regulatory period, RIIO-2, which begins in 2021.

As part of this programme, we held a workshop at Sandown Park on 26 June 2018 to consult stakeholders on the parts of our business plans which relate to our impact on the environment. We are also consulting stakeholders on the same topic via an online consultation and other channels, to ensure we obtain views representative of all of our stakeholder segments.

This report summarises the comment and feedback we received from the workshop, and acts as a check that we have correctly captured and interpreted what stakeholders told us.

For more information about our network and how we are building our plans, please visit http://yourenergyfuture.nationalgrid.com/electricity-transmission/.

[1] Note that this excludes the Electricity System Operator, which will become a separate business within the National Grid group from April 2019, and which has its own programme of stakeholder engagement

2. OBJECTIVES AND FORMAT

We talk to our stakeholders regularly using a variety of channels. For each of our engagement topics, we have established what we and our stakeholders need to achieve from the engagement, who needs to be involved, and therefore how we should best engage.

For the topic of the environment, we recognised that different stakeholders have different views when it comes to certain elements of our plans, and that holding a workshop where these views could be aired and debated was the most suitable approach. We also recognised that for a variety of reasons, some stakeholders may not be able to attend the workshop, so are providing other opportunities to contribute, including an online consultation.

We needed to ensure that attendees were able to provide input into our plans in an informed way, so we began the workshop with a high level overview of what we do, our approach to engagement and how we currently manage our environmental impact. We then split into separate Gas and Electricity workshops for the rest of the day.

For Electricity, we structured the day around topic-specific sessions, using a similar format to our 2017 workshops, which received positive feedback from attendees. For each session, this involved:

- a short presentation to provide enough context for all stakeholders to be able to discuss the subject area
- a facilitated table discussion, during which all stakeholder comments were captured to provide qualitative feedback
- a short voting exercise, allowing us to capture quantitative feedback where there are options regarding what we include in our plans

Within the table discussions, stakeholders were able to suggest additional options for us to explore further.

As in 2017, we deliberately chose not to use a third party facilitator, but made sure that all National Grid employees were fully briefed so as not to introduce any potential bias to the conversations. This again appears to have been well-received by attendees, with a Net Promoter[2] score of +58 and an average score of 8.7 out of 10 when asked how likely they would be to recommend the workshop to a friend or colleague. We also used independent behavioural economics experts to review our approach in advance of the workshop.

[2] More details on the Net Promoter System and how it works can be found here.

3. WORKSHOP ATTENDEES

The following organisations were represented at the workshops, with 32 attendees in total:

ABB Limited	Highview Power	RSPB
Babcock International	Jacobs	SP Energy Networks
Balfour Beatty	JSM	SSE
Barhale	Laing O'Rourke	Standard Chartered Bank
Campaign for National Parks	Mace Group	The Conservation Volunteers
Citizens Advice	Mott Macdonald	The Wildlife Trusts
Fraser Nash	Ofgem	University of Birmingham
GE (Alstom)	Powell Engineering	Wood plc
GSS	Representative of Anglesey communities	

Segmenting our stakeholders

We asked attendees to classify themselves into stakeholder segments, as shown below. Note:

- Where results were not received (from seven attendees), we have classified them for completeness
- The 'Supply chain' category includes a mixture of our own suppliers and those who supply the wider energy industry

Stakeholder group	Attendees
Supply chain	16
Environmental interest organisation	5
Regulator or government	2
Consumer interest organisation	2
Energy network owner or operator	2
Other energy industry	2
University, think tank or academic	1
Other non-energy industry	1

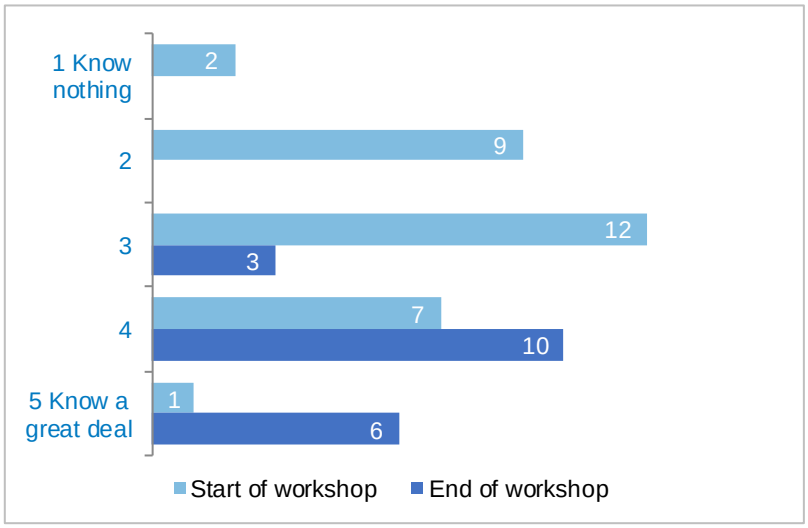
Although this provided a good spread across our main stakeholder segments, we recognise that certain segments, notably our direct customers, were not represented. We are exploring other channels to make sure we obtain their feedback, and we will also be running a parallel and linked programme of engagement for household consumers later in the year.

Within each session of the workshop, we also asked attendees how impacted they felt they were by each of the topics discussed. This allowed us to analyse responses and identify differences in views between those who are more or less impacted by a particular part of our plans. Details can be found in section 4 below.

Level of knowledge and ability to contribute

At the start of the workshop, we asked attendees to tell us how much they knew about National Grid's impact on the environment. We asked the same question at the end of the workshop to gauge how well we had explained what we do.

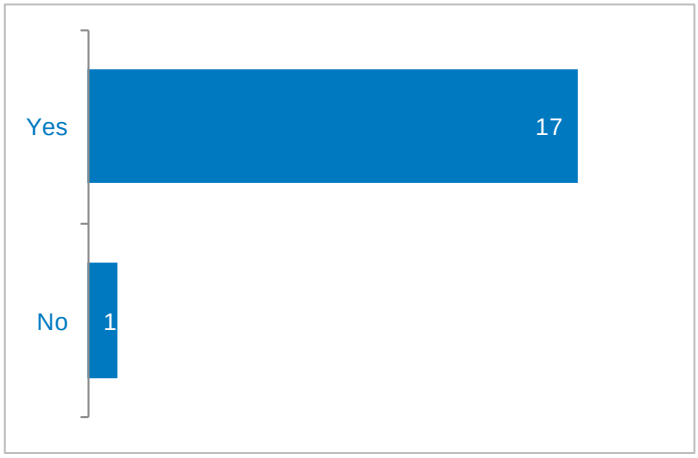
Q: *On a scale of 1 to 5, where 1 is know nothing and 5 is know a great deal, how much would you say you know about National Grid's impact on the environment?*
(Number of respondents)



Start of workshop mean score = 2.9 (31 respondents)
End of workshop mean score = 4.7 (18 respondents)

We also wanted to understand how able to contribute attendees felt they were, to gauge how informed their opinion was. We therefore asked the following question at the end of the workshop:

Q: *Based on all of the information available to you and thinking about the workshop as a whole, were you able to contribute to today's topics?*
(Number of respondents. Base size: 18)



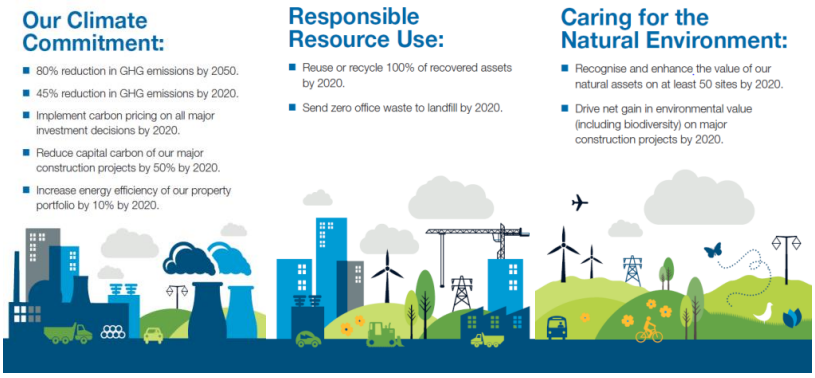
4. STAKEHOLDER FEEDBACK

This section provides a summary of the feedback received, taking each workshop session in turn.

4.1 Session 1: Our corporate approach to the environment

Headline message: Stakeholders generally supported our approach, but had questions around how we'd arrived at our targets, how we compare to other organisations, and what is within or outside of our control. There was support for a whole life costing approach (including carbon), and a call for us to explore best practice and use innovation to reduce our environmental impact.

We began the workshop with an overview of our environmental sustainability strategy and the targets we have set ourselves as part of this, along with details of our current performance (for a copy of the slides, please click here).



We explained that our main contribution to decarbonisation is made through connecting low-carbon generation to our network (which will be covered under our customer connections topic later in the year), but that there are other direct and indirect carbon emissions over which we have more control, including:

- Losses of energy from our equipment as we transport electricity around the country
- Leakage of sulphur hexafluoride (SF_6)[3] from our equipment (explained in more detail in section 4.2 of this report)
- Our construction activities and the types of equipment we choose to buy

[3] SF_6 is a greenhouse gas with excellent insulating properties, but which has a global warming potential of over 23,000 times that of carbon dioxide

We also introduced the topics of visual impact, responsible resource use and how we manage our assets, which are covered in more detail in sections 4.3 to 4.5 below.

In the table discussions, we asked the following questions:

- What would you like to know more about?
- What are the areas you would like us to focus on?
- What else should we be thinking about?
- Is there any more information you would like us to publish?

Summary of stakeholder comments and questions:

- The targets and metrics were largely welcomed, although stakeholders commented that it would be good to understand how we had arrived at these targets and how we compare with other organisations, particularly other transmission companies. Is the bar set at the right level?
- How much change in our future carbon footprint will be as a result of what actually plays out (e.g. more low carbon generation), and what will be as a result of what we're doing differently? How much do we actually have control over?
- Carbon pricing is good – can we demonstrate what we've changed as a result of this approach? Can we show stats from our overall cost benefit analysis?
- We need to think about the correct weighting for environmental impact/carbon in our tender process
- Is there more best practice and/or innovation out there that we could be learning from? Potential to work more closely with suppliers on this.
- It would be good to demonstrate how regulatory incentives have driven changes in our behaviour
- We should look at short-term versus longer-term costs, e.g. a more sustainable option may cost more initially but could be less expensive in the long term (whole life cost)
- At present, there is a potential tension between lowering carbon and minimising costs, from the assets we purchase to how much we recycle
- Visual impact is a big thing for local communities

4.2 Session 2: The environmental impact of decision-making

Headline message: Stakeholders all supported an approach to investment decision-making that looks at whole life costs including the cost of carbon, and all favoured investment in lower loss equipment if it provides the best whole life value. The majority of attendees said we should focus on minimising SF_6 leakage volumes, and many suggested that we should use innovation to develop alternative solutions.

We explained the different considerations that form part of our investment decision-making process and how many of these have a potential environmental impact. We used examples to show how we make decisions around the types of assets we choose to install, particularly when it comes to SF_6 and losses[4], and where we choose to build them. We explored some of the options available to us, and discussed how far we should go with a whole life costing approach.

In the table discussions, we used the following questions to begin the conversation:

- What should we focus on to reduce our carbon footprint?
- How far / how quickly should we go?
- For SF_6, should we focus on leakage percentage, overall volume of leaks, and/or finding alternatives to SF_6?
- What should we consider when making investment decisions?
  - Whole life approach
  - Capital costs

Summary of stakeholder comments and questions:

- Workshop attendees supported a whole life costing approach to investment, which also includes the cost of carbon. One table discussed whether other social impacts should also be included (e.g. visual impact), and moral obligations around the environment were also mentioned.

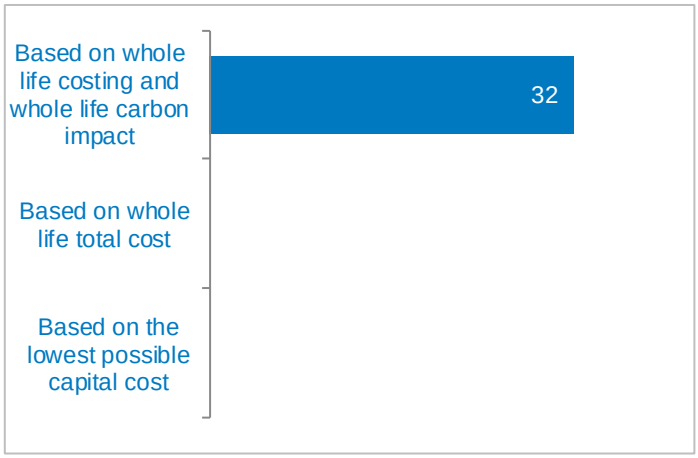
[4] Electrical losses are the difference between the amount of energy entering and exiting our network, caused by the use of energy in transporting the electricity from A to B

- Losses should reduce over time anyway as generation decarbonises, so we should focus on what we can control, but ensure that carbon reduction and cost to consumers are balanced correctly
- For SF_6 leakage, most workshop attendees would prefer us to focus on overall volume leaked, although it was recognised that setting the right target volume could be difficult
- Several stakeholders suggested that preventing leaks from older equipment should be a priority, as should developing an alternative (without focusing solely on the g^3 option[5])
- In general, innovation could help us deliver carbon reduction. Could we trial low-carbon concrete, for example?
- A few stakeholders questioned the scope of a whole life carbon approach, specifically regarding whether or not 'whole life' means cradle to grave, e.g. would/should it include the manufacturing and decommissioning of assets, including any related waste or release of gases to the atmosphere?

Results from voting questions:

We asked stakeholders the following questions. There were no significant differences in results according to how impacted respondents said they were by this topic.

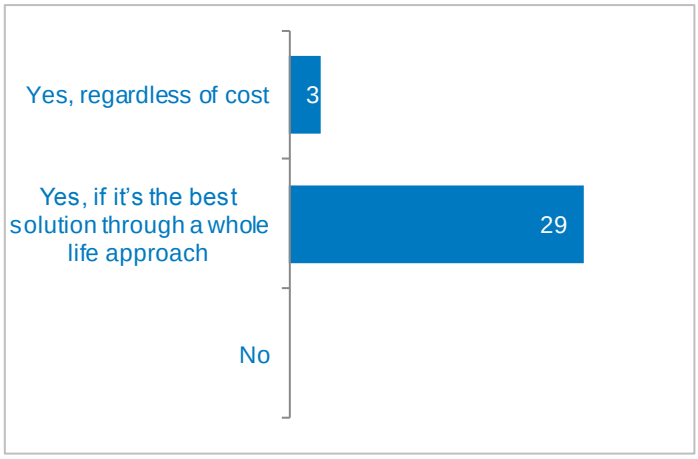
Q: How should we make our future investment decisions?
(Number of respondents. Base size: 32)



[5] g^3 is an alternative insulating gas with a much lower global warming potential than SF_6, but is currently only suitable for use at lower voltages

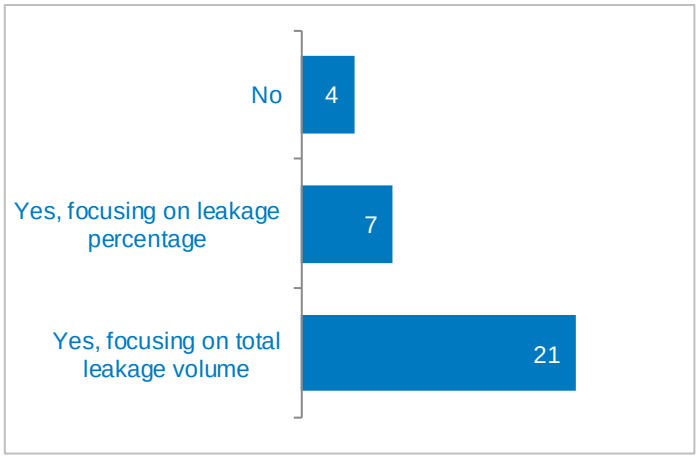
Q: Should we invest in lower loss equipment?

(Number of respondents. Base size: 32)



Q: Should we continue to focus on SF_6 leakage?

(Number of respondents. Base size: 32)

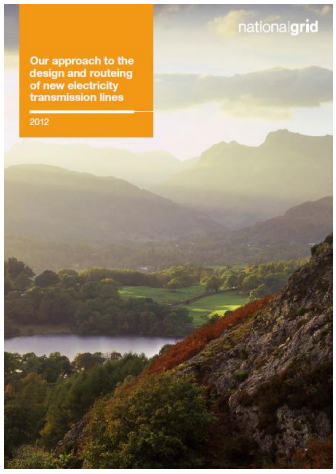


4.3 Session 3: Visual impact

Headline message: As previously found, this is a topic which divides opinion. Some stakeholders believe that our assets have a highly negative visual impact, while others see them as part of the landscape. Those who said they are more impacted by this topic are largely more supportive of minimising visual impact than minimising costs. The majority of attendees believe that our current approach to new lines is about right, although we could consider alternative ways of mitigating visual impact. Several stakeholders commented that we should look at all considerations when developing our proposals, including visual impact, whole life costs, carbon and impact on land. The majority of attendees supported some form of scheme for existing lines in RIIO-2.

New lines

We explained our approach to connecting new sources of generation to our network, and specifically whether these should be built using overhead lines or underground cables. We discussed how we evaluate the different options, and provided examples of their impact, cost and other considerations.



Note:

- At the workshop, we provided out-of-date information to attendees in our handouts, containing a misleading statement that 'our current approach is to seek overhead connections wherever possible'. An updated, corrected slide was used during our presentation and we explained this error to workshop attendees.
- We emphasised our current approach, which is that we have no inherent preference for either overhead or underground solutions, and will seek to deliver the best balance of all considerations. Further details can be found on page 5 of *Our approach to the design and routeing of new electricity transmission lines* on our website.

Existing lines

We explained our approach to mitigating the visual impact of existing overhead lines in National Parks and Areas of Outstanding Natural Beauty (AONBs) as part of the RIIO-T1 Visual Impact Provision scheme, providing examples of proposed undergrounding projects and our Landscape Enhancement Initiative, which looks at smaller, more localised projects.

In the table discussions, we used the following questions to begin the conversation:

- What should be our focus when obtaining planning consent for new lines?
- Should underground cables be our default approach?
- Should we continue to look at how we can mitigate the impact of existing lines?
- Should there be a Visual Impact Provision scheme in RIIO-2?
- If so:
  - what should its focus be (e.g. undergrounding, other enhancements, or a mixture?)
  - should it continue to focus on National Parks and AONBs?

Summary of stakeholder comments and questions:

As previously found, stakeholders' views are split regarding how we should manage the visual impact of our lines, both new and existing. A summary of key themes from the table discussions can be found below:

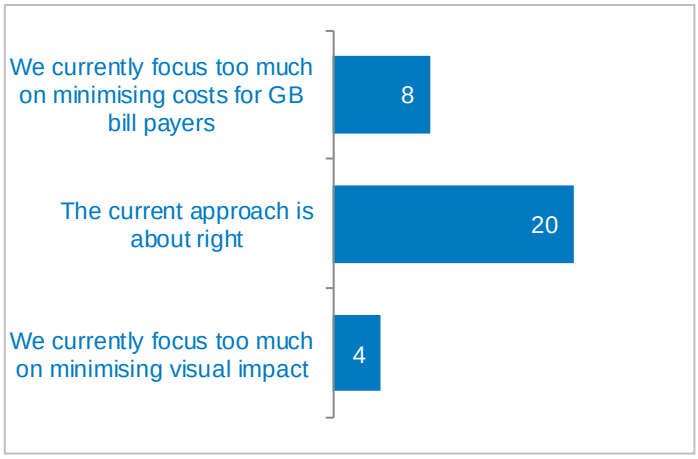
- We need to explain the pros and cons of undergrounding for local communities and for bill payers more generally
- The social and economic impact of new lines also needs to be considered, as does the impact of underground cables on certain types of land
- Some stakeholders believe that pylons are ugly and intrusive while others see them as part of the landscape

- Some stakeholders felt that as existing lines are often visible from inside National Parks and AONBs, the scope of any future scheme should go beyond these designated areas, but others felt that the current focus was right
- Could we look at other ways of lessening the impact of pylons, e.g. by camouflaging/painting them, using new technologies, screening? These could be more cost effective than undergrounding.
- Even when using cables, sealing end compounds (where cables join) can have a visual impact, and several stakeholders commented that upgrading a buried cable is more difficult/expensive than for an overhead line
- A couple of stakeholders commented that although it may not be right to replace pylons purely for visual reasons, we could consider replacing sections of our network with underground cables when the current assets reach the end of their life
- When showing cost comparisons, we should also include the costs of decommissioning
- Could we provide more information on electromagnetic fields (EMFs)? Note: More details can be found at http://www.emfs.info/.

Results from voting questions:

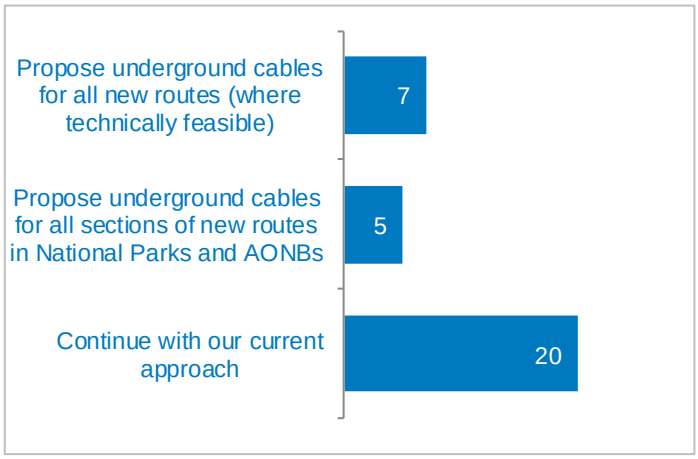
We asked stakeholders the following questions:

Q: What are your views on our approach to obtaining planning consent for new projects?
(Number of respondents. Base size: 32)



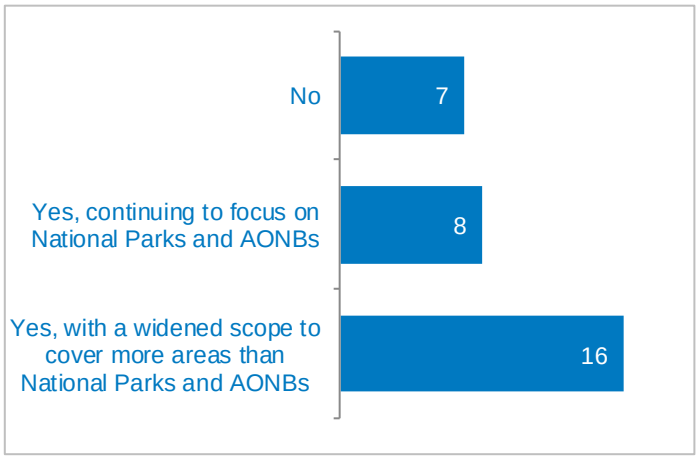
Notes: Of the eight people who said they are impacted a great deal by this subject, four said that we currently focus too much on minimising costs.
Our current approach for new lines is to seek to deliver the best balance of all considerations.

Q: Should our default approach be to…?
(Number of respondents. Base size: 32)



Note: Further to a query at the workshop, we clarified (before stakeholders voted) that our current approach is to consider all feasible technologies and would usually, but not always, result in underground cables being proposed in a National Park or AONB.
There were no significant differences in the results for this question according to how impacted respondents said they were by this topic.

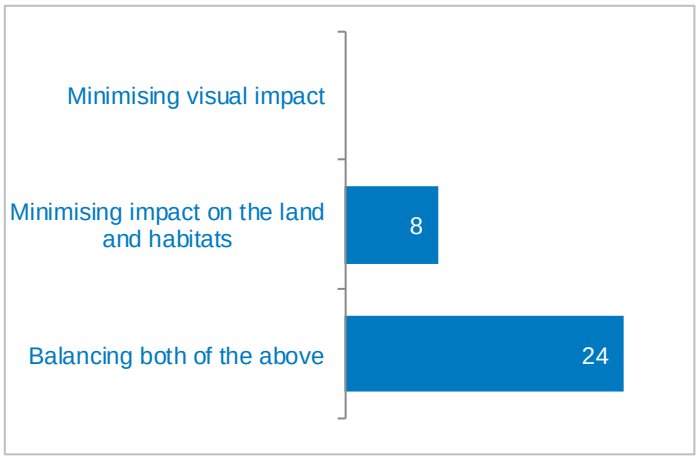
Q: Should there be a scheme to address the visual impact of existing overhead lines and other assets in RIIO-2?
(Number of respondents. Base size: 31)



Note: There were no significant differences in the results for this question according to how impacted respondents said they were by this topic.

Q: And when considering whether to use underground cables, do you think our focus should be on …?

(Number of respondents. Base size: 32)



Note: There were no significant differences in the results for this question according to how impacted respondents said they were by this topic.

4.4 Session 4: Construction

Headline message: The majority of workshop attendees thought that we should balance the local impact of our construction activities with the cost to bill payers in general. There was general support for aiming to minimise our carbon impact and then using carbon offsetting to achieve carbon neutral construction, and for improving the biodiversity of land after our construction activities, if costs were reasonable. More generally, the majority of attendees thought that networks should focus more on their overall carbon emissions, but not if that leads to increased network charges.

We explained how we currently approach our construction activities, the impact these have on the environment and local communities, and identified some of the options available to us if we were to change this approach. We explored our carbon impact and the choices (and costs) associated with this, and talked about how we should approach the reinstatement of land after we have finished construction.

In the table discussions, we used the following questions to begin the conversation:

- What should the balance be between:
  - mitigating the local impact of construction activities and
  - minimising the cost to GB bill payers?
- Should we aim for carbon neutral construction by minimising emissions and then offsetting?
- Should we deliver a higher net gain in environmental value than planning requires?
- What should be our focus when obtaining planning consent for new lines?

Summary of stakeholder comments and questions:

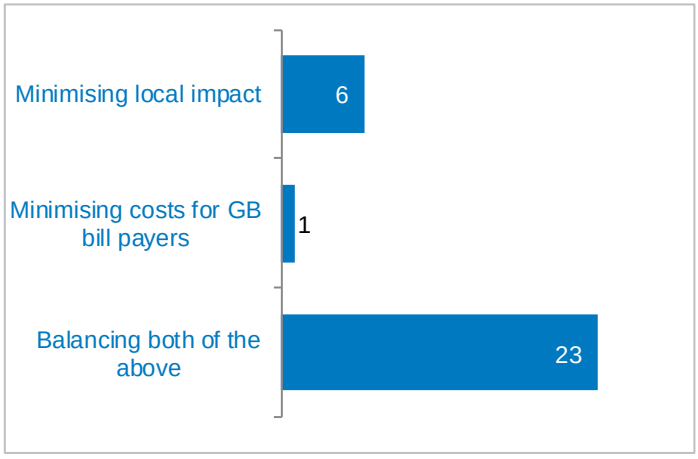
- Many stakeholders believed we should aim to be carbon neutral, and that we should do this by firstly ensuring that we minimise our carbon emissions wherever possible (and those of our supply chain)
- Carbon offsetting was largely seen as something we should do once we have exhausted opportunities to minimise emissions
- Several stakeholders suggested that offsetting could be seen as 'cheating' and simply buying our way out of the problem

- Innovation was seen by some as a potential way of finding a solution, as was talking to other organisations to better understand best practice
- Should /could we expand this thinking to all of our activities, not just construction?
- There was broad support for net gain (ensuring that the biodiversity value of land is higher after our construction activities than before), although there were no strong feelings on how far we should go with this

Results from voting questions:

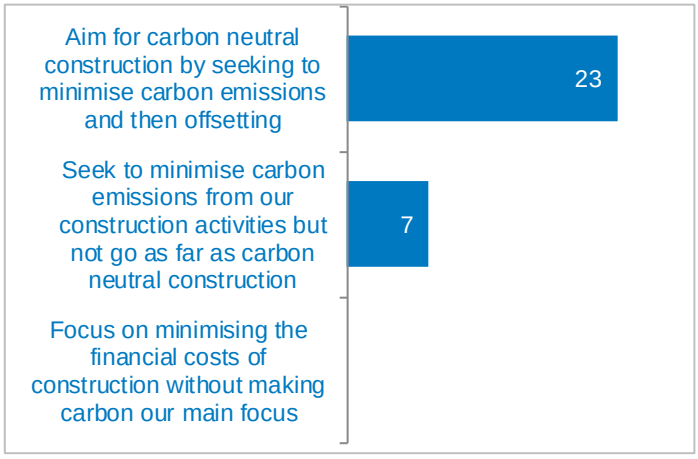
We asked stakeholders the following questions. There were no significant differences in results according to how impacted respondents said they were by this topic.

Q: Do you think our main focus should be on…?
(Number of respondents. Base size: 30)



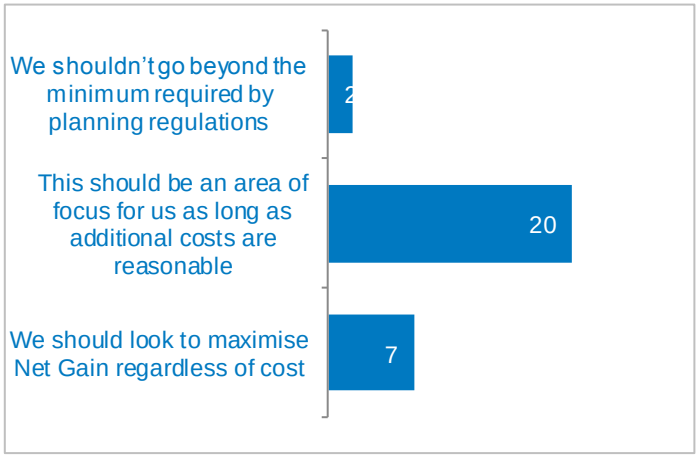
Q: Should we…?

(Number of respondents. Base size: 30)



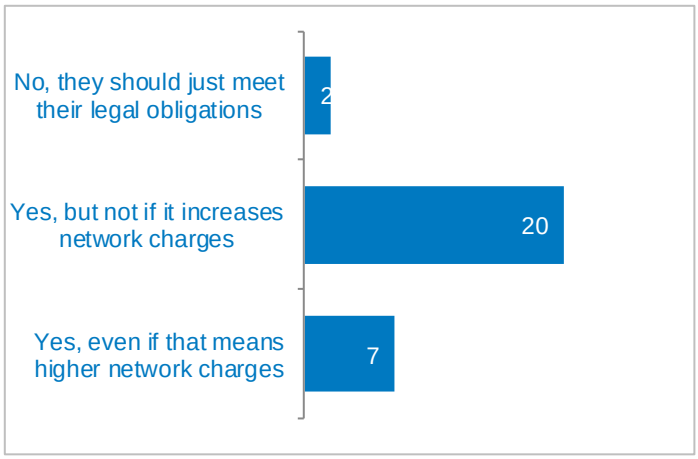
Q: What are your views on how we should approach environmental Net Gain in RIIO-2?

(Number of respondents. Base size: 29)



Q: Should networks be encouraged to go beyond legal obligations and focus more on their overall carbon emissions?

(Number of respondents. Base size: 29)



4.5 Session 5: Managing assets

Headline message: Workshop attendees supported our land management approach and the environment-related aspects of our corporate social responsibility work. The majority believed that we should expand our approach to more sites, but some questioned whether this should be funded by bill payers or by National Grid.

We explained our *Natural Grid* approach to sustainable land management and discussed our existing environmental education centres, along with details of how much they cost.

In the table discussions, we used the following questions to begin the conversation:

- Should we ensure that our land delivers benefits to others, not just National Grid?
- On what scale should this be for RIIO-2?
- What should we be doing in relation to the environment as part of our wider corporate social responsibility work?

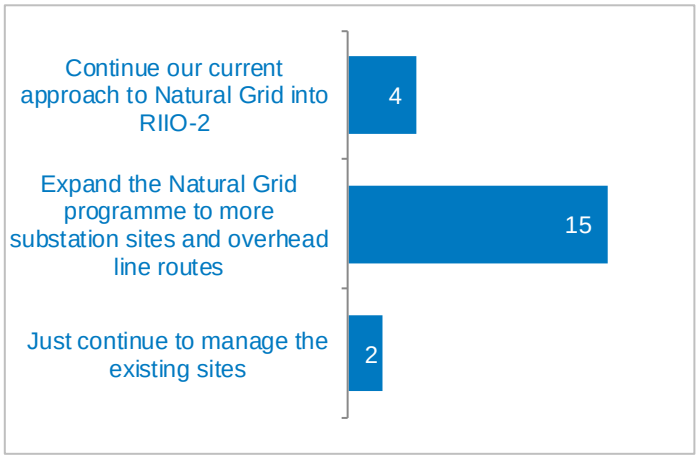
Summary of stakeholder comments and questions:

- Both the *Natural Grid* programme and the environmental education centres were supported by the majority of stakeholders as something that National Grid should be doing
- Some questioned how these should be funded – should consumers pay or should this be something that we should be funding as part of our corporate responsibility work?

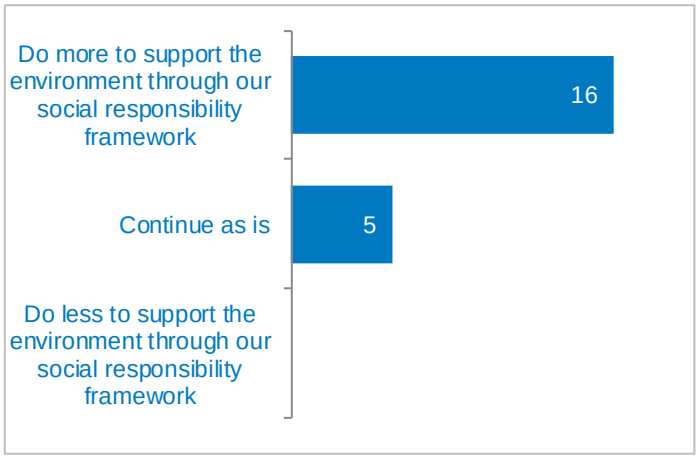
Results from voting questions:

We asked stakeholders the following questions. There were no significant differences in results according to how impacted respondents said they were by this topic.

Q: *Should we…?*
(Number of respondents. Base size: 21)



Q: *Should we…?*
(Number of respondents. Base size: 21)



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5. NEXT STEPS

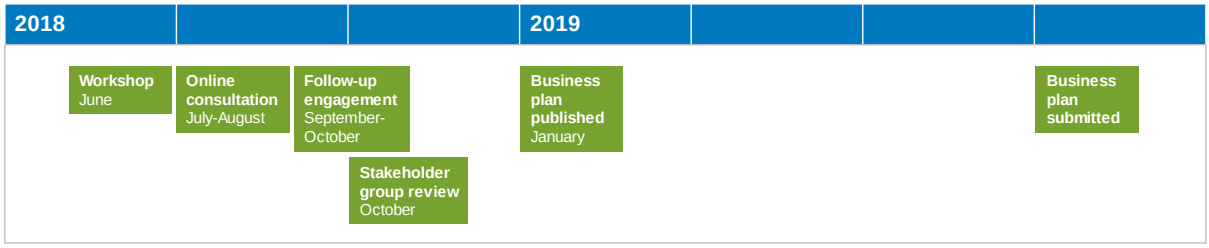
We would like workshop attendees to confirm whether we have correctly captured and interpreted the feedback provided. Any comments should be provided to our Stakeholder Engagement Manager, Gary Stokes, at gary.stokes@nationalgrid.com.

If we have not already done so, we will answer specific questions raised at the workshop with a direct response to attendees. Where these responses would be of wider interest, we will publish details in our stakeholder newsletter and on the Your energy future website.

We will incorporate what we heard at the workshop with the feedback from our online consultation and other engagement activities.

We will work with our Stakeholder Group and Ofgem's Consumer Challenge Group and use all of our stakeholder feedback to develop our business plans for RIIO-2.

We will publish the first draft of these plans in early 2019, so that stakeholders can review our proposals and let us know whether we've correctly interpreted their requirements, before final submission to Ofgem in late 2019.



Timeline for the environment topic

THANK YOU

Thanks again to all who have contributed to our consultations so far. If you have any questions, would like to suggest additional topics for engagement, or would like to get involved in further engagement activities, please email gary.stokes@nationalgrid.com.