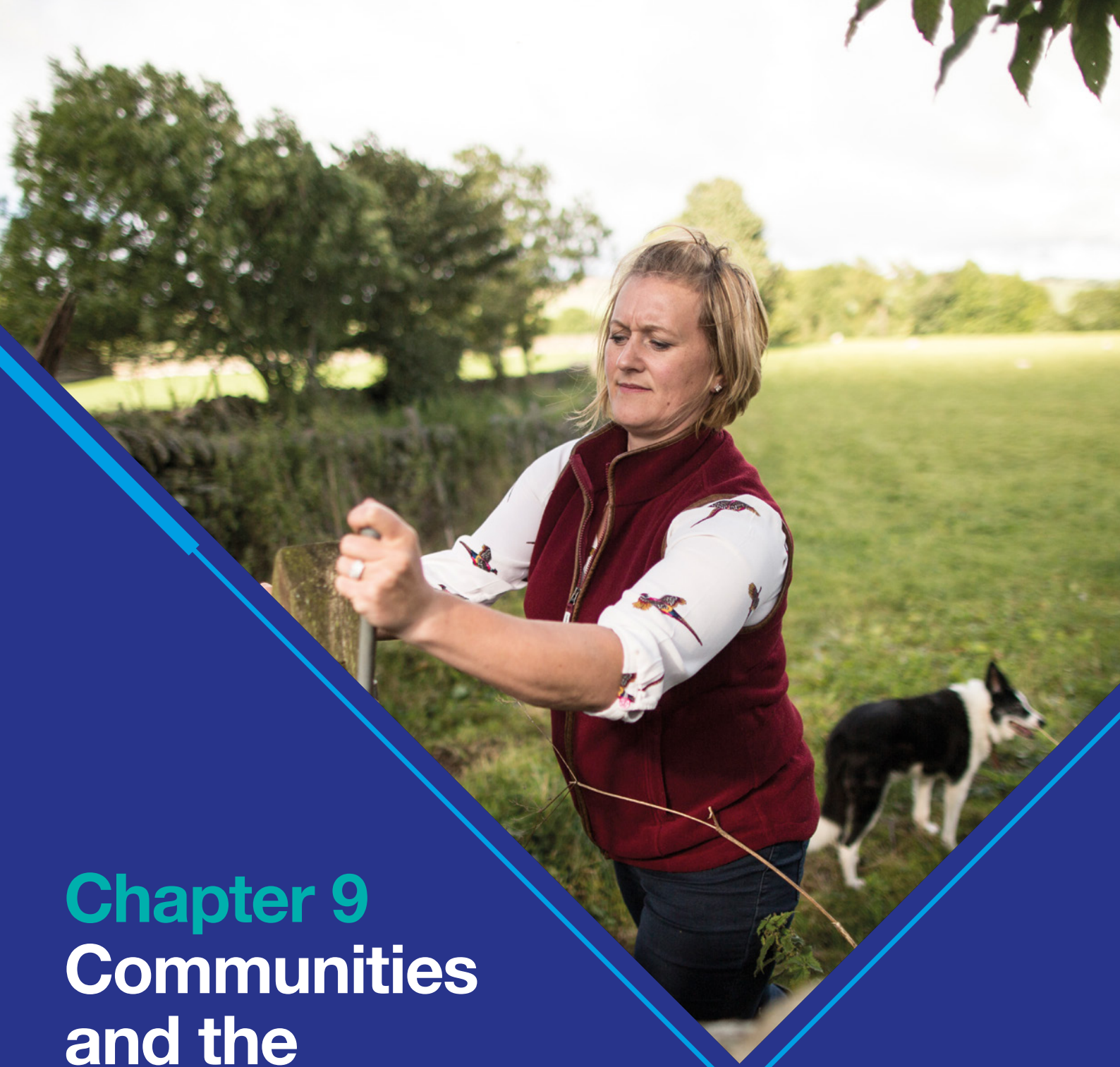


Chapter 9
Communities and the environment

I want you to care for communities and the environment

Gas Transmission

nationalgrid

9. I want you to care for communities and the environment

Summary

We care about the communities we work in and the wider environment. This topic is important for National Grid, but also for consumers and society. Making a positive impact on the environment and communities is vital if we are to operate as a socially responsible business.

National Grid Group has set ambitious group-wide targets for environmental sustainability. These targets are outlined in the 'Our Contribution' document[1].

Targets include:

- By 2050, we will make an 80% reduction in our greenhouse gas emissions (from a 1990 baseline).
- By 2020, we will reduce capital carbon of our major construction projects by 50%.
- By 2020, we will reuse or recycle all our recovered assets.
- By 2020, we will recognise and enhance the natural capital value[2] of our natural assets on at least 50 of our sites.

The gas transmission business affects either the environment or local communities in several ways. Our approach in RIIO-2 will continue to be consistent with the UK Government's Clean Growth Strategy[3] (October 2017). In this chapter we discuss:

- Air quality – ensuring our assets (particularly our compressor fleet) comply with tightening air quality emissions legislation.
- Business carbon footprint (BCF) – minimising our emission of greenhouse gases, such as methane and carbon dioxide. This includes from assets, buildings, vehicles and from the third parties that support our business. For example, this could be from generating power on our behalf or producing the materials we use.
- Redundant assets – where assets are no longer required, ensuring we act in line with legislation. We will minimise the risk to the environment of leaving assets in the ground or on sites.
- Legal obligations – continuing to meet our legal obligations to landowners in communities affected by the presence of our pipeline network.
- Societal and community objectives – working with and in local communities, particularly those affected by our assets or activities.

What our stakeholders tell us

We engaged stakeholders at four regional events[4] in July 2018 and at specific environment events in London (July 2018) and Edinburgh (December 2018).

Air quality

Our RIIO-2 plan will focus on continued compliance with tightening emissions legislation. We have not therefore engaged stakeholders about whether we should meet our legal obligations.

Business carbon footprint

RIIO-1 includes an incentive on the volume of greenhouse gas emitted when we depressurise a compressor and vent the natural gas. During our engagement, stakeholders told us that the scope of this should be broadened to consider all types of emissions and not just the current limited scope.

"Would like to see more focus on methane emissions, such as there are in Europe."

[1] https://www.nationalgrid.com/sites/default/files/documents/NG_OurContribution_PDF_Brochure_2017%20%281%29.pdf
[2] Natural Capital Value is a financial representation of the benefits and services that nature provides to society and businesses, e.g. Visual screening, flood control, improved air quality, raw materials, recreation and clean water etc.
[3] Clean growth means growing our national income while cutting greenhouse gas emissions. Achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK's Industrial Strategy.
[4] During July 2018, we held four regional events in St Fergus, London, Chester and Bacton which were attended by over 50 stakeholders from a wide range of organisations to discuss their requirements for the future needs of the GT Network.

We asked stakeholders about how we should factor cost of carbon into our decision-making processes. Stakeholders supported our view that we should apply a consistent cost of carbon in these decisions using the Government's central case carbon evaluation (mid-case).

"National Grid should just get on with it. Their strategy needs a consistent message; therefore they should only use one carbon price. They also need incentives to reduce emissions."

"Yes, we should have one consistent carbon price, in order to make analysis of these figures easier. This should be a balance between the cost to consumers and highest price for the business, yet be ambitious in terms of reducing the impact on the environment. This should allow for benchmarking within the industry."

Redundant assets

Stakeholders told us that for redundant assets, we should prioritise removal based on risk and maintain the residual redundant assets.

Stakeholders also suggested different approaches for buried pipelines compared with above-ground assets (e.g. compressors).

"National Grid need to prioritise high-risk projects and maintain remaining assets, as commercially the right answer is to leave it. Yet, they should take into account stakeholders and the impact on them, for example if redundant assets are an eyesore for local communities then it may be best to demolish the asset."

"You need to think about the visual impacts of pipelines vs compressors. It makes sense to remove compressors to reduce the visual impact, but why would you dig up a pipe? Leaving assets visible on the surface has a greater impact on reputation."

Society and community

We asked stakeholders about our role in local communities. 60% of the responses told us that we should do more with local communities. 40% said to continue as we currently are.

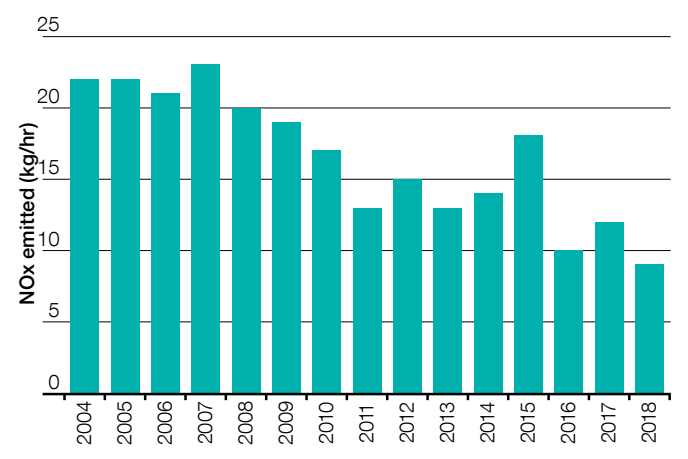
Our activities and current performance

Air quality legislation (nitrogen oxide (NOx) and carbon monoxide (CO)).

High levels of NOx in the environment can impact health. There could be an increased risk of respiratory conditions, greater response to allergens and a decrease in lung function.

During RIIO-1, we invested in our compressor fleet to meet our obligations under local air quality legislation. This led to a reduction in the amount of NOx emitted for each hour of compressor running.

Figure 9.1: NOx emitted for each hour of compressor running (kg/hr)



We have more work to do. We plan to continue to deliver reductions in emissions during RIIO-2. To help us do this effectively we engaged with stakeholders during the latest iteration of European Directives on emissions.

This resulted in a five-year derogation to comply with specific emissions legislation for some of our assets. Our sites with the highest environmental impact are being addressed earliest.

This came from a need to deliver a cost-effective compressor replacement programme for our customers, while also remaining compliant with future legislation.

This success means capital works can take place more gradually. This ensures effective cost control for our customers to deliver lower emissions.

Redundant assets

Assets may become redundant because the needs of stakeholders or individual customers might change. We have identified 68 sites, asset groups or single assets that are redundant already or will be during RIIO-2.

We are doing more work than ever in this area as our assets age and customers change how they use the network.

In the run-up to, and during RIIO-2, more assets may become redundant because of customer decisions or as overall use of the network changes. We will continue to monitor redundant assets using our normal annual planning processes and when customers tell us of a change in system use.

Society and community

National Grid has a strong history of supporting local communities. One way we do this is by managing our non-operational land in innovative ways. We have applied a 'natural capital valuation' approach alongside engagement with local and national stakeholders to deliver societal value.

Legal obligations to landowners

We have contractual relationships with owners of the land that our pipelines pass through. As part of these contracts, we are liable for the impact of our pipelines. This could include where drainage or crop production is affected or where there is a restriction on undertaking quarrying activity.

We have well-established processes to validate and challenge the basis and amount of the compensation being sought for all claims. In each case, we will seek to adopt the most appropriate solution. This could include making annual payments, making full or final settlements, or carrying out investigation and repairs (e.g. for drainage issues).

Our direction of travel

We will develop a business plan that allows us to meet all relevant environmental legislation (including waste and emissions). It will also consider how we work with communities.

Air quality emissions legislation (NOx and CO)

Tightening emissions legislation impacts 29 of our compressors. It also covers a small number of water bath heaters, boilers and standby gas generators. We need to be compliant with new legislation by 1 January 2030. We are developing a programme of work out to 2030 to achieve this.

There is a large volume of work needed. It will take time to deliver compressor investments and there is limited availability of network outages to accommodate this work. This means we can't wait until RIIO-3 (2026) to start the work. Significant activity is required during RIIO-2.

We will continue to refine this programme with stakeholders during RIIO-2 and beyond. For compressors planned to be addressed in RIIO-3, some of the initial costs are expected to occur in RIIO-2.

We will consider whether it would benefit consumers to request funding out to the compliance date of 1 January 2030 for the entire programme as part of the RIIO-2 price control.

We will use what stakeholders tell us about the required network capabilities[5] as we develop our programme of work to be compliant on emissions. This will ensure we only invest where needed.

We have initial proposals to discuss with stakeholders in 2019. They are based on the options of decommissioning, accepting limited running hours or replacement with a new compliant unit.

We will continue to explore the options to complete this work, including whether solutions such as abatement are suitable on a site-by-site basis. Our final RIIO-2 business plan submission will be based on stakeholder feedback and more detailed cost benefit analysis.

[5] See Chapter 6 for more detail

We will seek flexible regulatory arrangements covering various options for individual sites.

Reducing our business carbon footprint

We aim to reduce the greenhouse gas (GHG) emissions our business produces. We intend to do this on a carbon dioxide equivalence basis. This is because methane is about 25 times more damaging to the environment than carbon dioxide.

We have split our emissions into three categories:

- **Direct emissions from our assets**. The biggest of this is carbon dioxide emitted from combustion of gas in our gas fired compressors. It also includes methane emissions from activities such as venting during compressor depressurisation or pipeline venting. We want to improve the way we measure our methane emissions and establish if there are innovative techniques or investments we can use to quantify and reduce these emissions.

- **Indirect emissions from the ownership and operation of our assets**. This could include the indirect emissions from producing electricity used on our operational sites such as our electricity-driven compressors. We will explore if we can deploy renewable generation technologies to our sites to reduce our indirect GHG emissions.

- **Other emissions associated with our business**. This covers emissions where we have some or full control, for example, construction work or the production of steel and concrete that we use.

We will set a single consistent carbon price for each tonne of controllable carbon dioxide equivalent (CO_2e) emitted. This will give us clear carbon emissions data and support our decision-making.

By engaging stakeholders and working with our suppliers, we want to reduce our overall carbon footprint. This might involve looking at how we dispose of waste and replacing our fleet vehicles with low carbon alternatives.

Redundant assets

We aim to develop a programme to prioritise action on redundant assets that pose the greatest environmental and safety risks.

This programme will ensure we comply with our obligations under waste legislation. The law requires us to remove redundant above-ground assets but currently has an exemption for buried assets.

Our current preferred option is to demolish and dispose of above-ground assets and leave any buried pipelines safely in place. This will reduce the environmental impact of removing redundant pipelines from the ground.

For buried assets, we will investigate how these could be used in other ways. Through 2019 we will continue to work with stakeholders on our approach and the appropriate share of costs between current and future consumers.

Where existing contractual arrangements allow, we will seek to recover any costs to remove redundant assets from the relevant customer.

Society and community

We will strengthen how we manage non-operational land at our compressor sites. We'll do this in a way that delivers environmental value and benefits communities. We will identify ways to work with and fund local stakeholder groups to achieve maximum benefit.

We will also explore with stakeholders what our role should be in working with communities during RIIO-2.

Legal obligations to landowners

We will continue to work with landowners to meet our legal and contractual obligations relating to the presence of our pipeline network. This will cover issues such as loss of crop, impacts on drainage, loss of development or restrictions on extracting minerals.

What it could cost

Costs are dominated by the investments needed in the compressor fleet to meet emissions legislation. This makes up around 80% of the total costs of this priority.

What it could cost

T1 annual spend £44m

Low £120m | **T2 annual spend range** | **High £145m**

Key drivers for the changing trend and range:

- Costs in RIIO-2 are expected to be higher than in RIIO-1. Tighter emissions legislation means there are more non-compliant compressors needing intervention.
- In the high case above, work on compressors at Hatton and St Fergus is delayed from RIIO-1 into RIIO-2. All compressors affected by emissions legislation are replaced like-for-like across RIIO-2 and RIIO-3, with full compliance by December 2028.
- In the low case, we assume a like-for-like replacement in RIIO-2 with some derogation of units in RIIO-3, limiting required spend in RIIO-2.

Initial planning assumptions

Our starting assumptions include:

Supply and demand: We assume supply and demand are in line with the *Future Energy Scenarios* (*FES*) 2018.

GT Network – access and capability: We assume that the network is in its current form. We fully expect this assumption to change as we engage stakeholders on defining the network capabilities they require for RIIO-2 and through agreeing solutions with the environmental regulators.

Legislation: We assume no material changes to legislation.

Compressor assumptions:

- To date, for individual compressors we have considered three options: building a new unit, using a 500-hour derogation, or decommissioning. In 2019, we will assess the suitability of innovation or abatement technology. We will carry out a full cost benefit analysis for each site. We will also explore the balance of commercial solutions and asset solutions to deliver the network capability our stakeholders need. We believe this is likely to reduce the overall costs for our compressor emissions compliance programme.
- The compressor costs in this chapter only cover costs driven by emissions compliance. Any other costs for compressors from other drivers (e.g. due to asset condition) are covered in the separate 'Gas on/off' chapter. This is because they are not driven by environmental legislation.

We welcome your views:

Chapter:
Communities and environment

Question:

13. We must take action to curb our harmful environmental emissions in line with legal deadlines. To what extent should we be more proactive in reducing our overall impact on the environment? For example, reducing methane emissions or going beyond minimum legislative requirements.

Submit your feedback online here:

How to use this document
We want your feedback

Who is this consultation aimed at?

We are interested in the views of all stakeholders who are impacted by what we do and shaping the future of gas transmission. This includes the views of gas consumers, government and regulatory bodies, energy industry professionals and members of the public.

Tell us what you think

This consultation is open until 31 March 2019. You may give us feedback in the ways outlined below. We particularly seek your views in response to the specific questions we have posed. These are summarised on page 12. You may respond to all questions or just those relevant to your specific views.

Ways to feed back:

Make notes

Throughout the document, we have provided space for you to read and make notes at the start of each chapter (opposite). You can then type up your notes and send them in an email or submit them online.

Interactive pdf notes

Alternatively, we will be sending out editable pdf versions of this document with note fields for you to type directly into.

Email

We have a dedicated email address specifically for your feedback to this document. We welcome your thoughts at:
jennifer.pemberton@nationalgrid.com

Alternatively, you can put your thoughts in writing and send to: Jennifer Pemberton, National Grid House, Warwick Technology Park, Gallows Hill, Warwick. CV34 6DA.

Online

You can go directly to the website and submit your comments here.

Please share your thoughts:

Type here>