



# National Grid Electricity Transmission Owner Stakeholder Consultation

The environment and communities  
July/August 2017



# Purpose and content of this consultation

- As the England and Wales Electricity Transmission Owner, we recently held a series of workshops to continue discussions with our stakeholders around some of the key topics that are important to both them and us
- These workshops were the first of their kind for our Electricity Transmission Owner business, with the intended aim that we listen to our stakeholders, establish their priorities, shape the topics of our future engagement, and start the process of incorporating stakeholder views into our business plans. Topics covered were:
  - Reliability of the Transmission network
  - Future role of Transmission
  - Connections to our network
  - The environment and our work with communities
- We are not consulting on the topic of Safety because we consider this to be non-negotiable

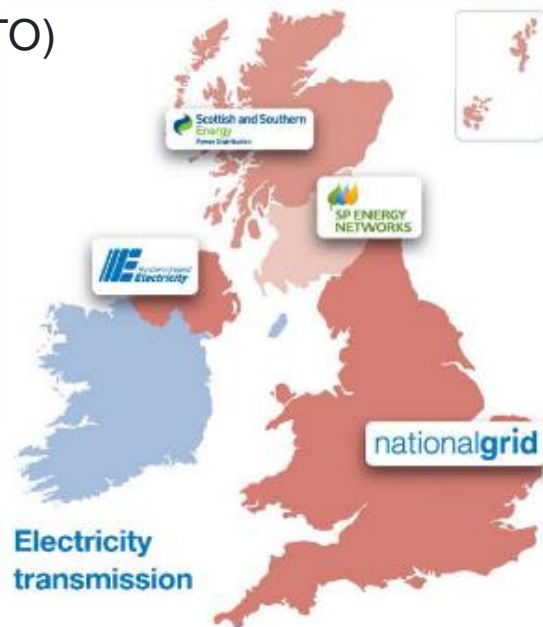
# Purpose and content (continued)

- The following slides focus on the topic of [the Environment and our work with communities](#)
- Specifically, we would like to know whether what we're currently doing is as you would expect
- This consultation pack is structured as follows:
  - Slides 4-6: general background information on National Grid
  - Slides 7-16: some context around our current work
  - Slide 17: potential questions to consider
  - Slides 18-19: link to consultation survey and next steps

# Introduction to National Grid

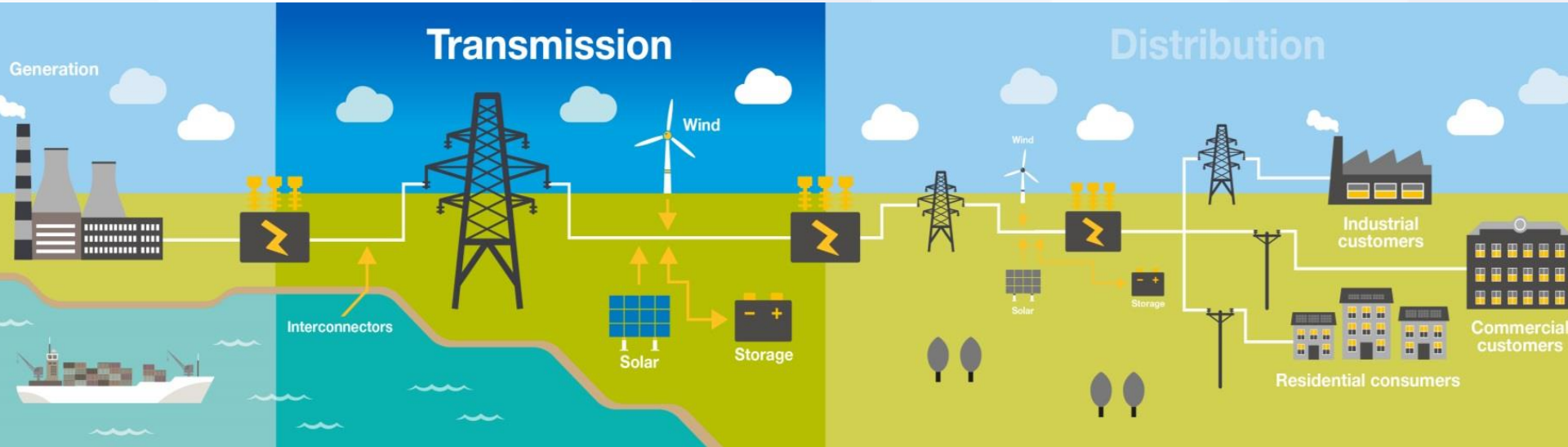
# National Grid: what we do

- We are the England & Wales Electricity Transmission Owner (TO)
  - We own, build and maintain the network
- We are also the GB Electricity System Operator (SO)
  - We balance the system and ensure that voltage and frequency are kept within acceptable limits
- We are currently working with Ofgem to make our Electricity System Operator independent from the rest of our business (to take effect from 2019)
- For Gas, we are the GB TO & SO
- We also have US interests in New York, Massachusetts, Rhode Island, New Hampshire and Vermont
- We hold a minority stake in four UK Gas Distribution networks (now known as Cadent)
- We own other non-regulated businesses
- This consultation is about the **Electricity TO**...



# National Grid Electricity Transmission Owner

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- Our network operates at 400,000, 275,000 and 132,000 volts
- 45 power stations, 12 Distribution networks and 3 interconnectors are connected to our network, along with a few, large directly connected customers
- What we don't do:
  - Generate electricity in the UK
  - Own or operate UK electricity Distribution networks
  - Sell electricity to end consumers in the UK

# The environment and communities

# The UN has set 17 Sustainable Development Goals (read more via this [link](#))

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# Our business most closely links to five of these...

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...the four highlighted plus goal 7, Affordable and Clean Energy, which links to just about everything we do



# Our work in these areas

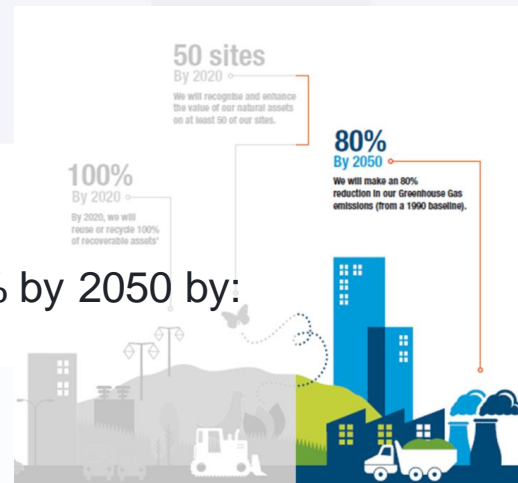
- The next few slides look at the work we're currently doing in relation to each of the four goals
- We'd like your views on whether or not this is what you'd expect from us



# Protecting the environment

## Take urgent action to combat climate change and its impacts

- One of the pillars of our environmental sustainability strategy, *Our Contribution* (details are available via this [link](#)), is our Climate Commitment – supporting the goals set out in the Paris Climate Change agreement. This approach can:
  - Reduce costs
  - Mitigate against future risk
  - Drive innovation
  - Reduce environmental impact
  - We aim to reduce our greenhouse gas emissions by 80% by 2050 by:
    - Implementing carbon pricing
    - Reducing the capital carbon of construction projects
    - Increasing our energy efficiency





# Protecting the environment

## *Take urgent action to combat climate change and its impacts*

- One of the largest elements of our carbon footprint is sulphur hexafluoride ( $\text{SF}_6$ ) leaks
- $\text{SF}_6$ 
  - A gas that we use as an insulator in some of our assets
  - It has fantastic insulating properties, which means it's great for use at sites where space is limited
  - But it's also an extremely potent Greenhouse Gas which is around 24,000 times as harmful as  $\text{CO}_2$
  - We're working to limit the leakage of  $\text{SF}_6$  from our assets
  - This includes working to develop an alternative ( $\text{g}^3$ ), which is currently undergoing trials (and is 98% less harmful than  $\text{SF}_6$ ) – believed to be a world's first





# Managing our land

## *Halt and reverse land degradation, halt biodiversity loss*

- Another pillar of our environmental sustainability strategy is Caring for the Natural Environment
- We own and manage land in and around over 300 substation sites and we want to do this in a way that involves stakeholders, cares for, protects, and potentially even enhances, the environment
- By 2020, we want to have enhanced at least 50 of our sites

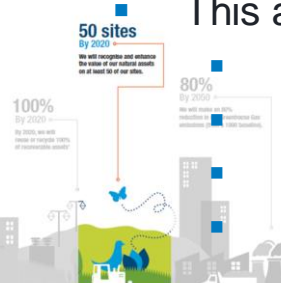
This approach can:

- Reduce maintenance costs
- Reduce safety risk
- Benefit local communities
- Enhance the environment and biodiversity



What does this look like?

- At 22 sites we've used a pro-active and collaborative approach. For example...
  - Elstree substation: improved site security, reduced operational costs, improved community access
  - Kirkstall substation: reduced operational costs, community access to woodlands and garden





# Managing the impact of our assets

## *Halt and reverse land degradation, halt biodiversity loss*

- We have over 7,000km of existing overhead lines across England and Wales and over 600km of high voltage underground cables
- We route and screen new overhead lines so they avoid or have as little impact as possible on sensitive environments or landscapes
- In very built-up areas such as central London, we tend to use underground cables because of the lack of space
- We also consider putting cables underground in other landscapes if the visual impact of an overhead line is too significant, and the alternative impacts are acceptable (e.g. environment, archaeology, disruption during construction)
- We always consult stakeholders when building new lines
  - An important part of how to design our project and the consent application we submit for approval
  - We always consider the cost of our projects – putting cables underground is much more expensive than building an overhead line in the vast majority of cases (£4m versus £24m per km at the higher end)
  - Costs vary with the types and numbers of cables we use, the geography and landscape, the ease of building and other factors







# Education and skills

***Ensure inclusive and quality education for all and promote lifelong learning***



- We need employees with the skills to manage our future network
- We recruit approximately 100 new engineers a year
- But Science, Technology, Engineering and Maths (STEM) subjects are becoming less popular at school and university, and our workforce is aging
- We're working with others to find the next generation of engineers
  
- What we currently do:
  - Regularly talk to communities on a range of environmental topics (last year we spoke to 30,000 people)
  - Engage with youngsters on STEM subjects (6,500 last year)
  - Support events such as the Big Bang science and engineering fair
  - Promote messages around safety in relation to our network and electricity in general
  - Support school leavers and graduates in spending a year volunteering in schools through the City Year programme (140 to date)
  - Partner with over 70 schools on these various topics



# Building strong communities

## *Promote inclusive and sustainable economic growth, employment and decent work for all*

- Because of the work we do across England and Wales, we become a part of the local communities
- We partner with charity organisations, provide communities with one-off grants and support local projects and causes through employee volunteering
- We aim to support sustainable social and economic development to help communities thrive
  - As part of the London Power Tunnels project we partnered with a charity called City Year and worked with over 30,000 school children on science and electricity
  - We have a Supplier Diversity programme that promotes local businesses to become more competitive to aid job growth and local economic recovery





# Questions for consideration

That's the end of the consultation material, now we'd love to hear your views. Some potential questions to consider are below, and you can provide your thoughts via the link on the next slide.

1. What are your views on our current approach to...?
  - a. Combatting climate change
  - b. SF<sub>6</sub> leakage and what we're doing to find a replacement
  - c. Land management in and around our sites
  - d. New and existing overhead lines and cables
  - e. Promoting STEM subjects and engineering as a career
  - f. Working with communities
2. Are we doing what you would expect in each of these areas, would you like us to do more, or should we be doing less?

# Consultation survey

- Our consultation on the Environment and our work with communities is now open and we invite you to provide your views via the link below:
  - [Please click here to provide your feedback](#)
- The consultation will be open until **Friday 25<sup>th</sup> August 2017**
- You'll also find consultations on the Reliability of the Transmission network, the Future role of Transmission, and the Connections process using the same link

# Next steps

- Our commitment
  - After the consultation closes, we'll collate what you've told us and combine it with feedback from our stakeholder workshops
  - We'll share this with you and explain how we propose to take it forward (planned for early September)
  - We'll work with you in more detail on your priorities
  - We'll change our plans as a result
  - We'll make this our business-as-usual



# Thank you

**Any questions? Please email:**  
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