

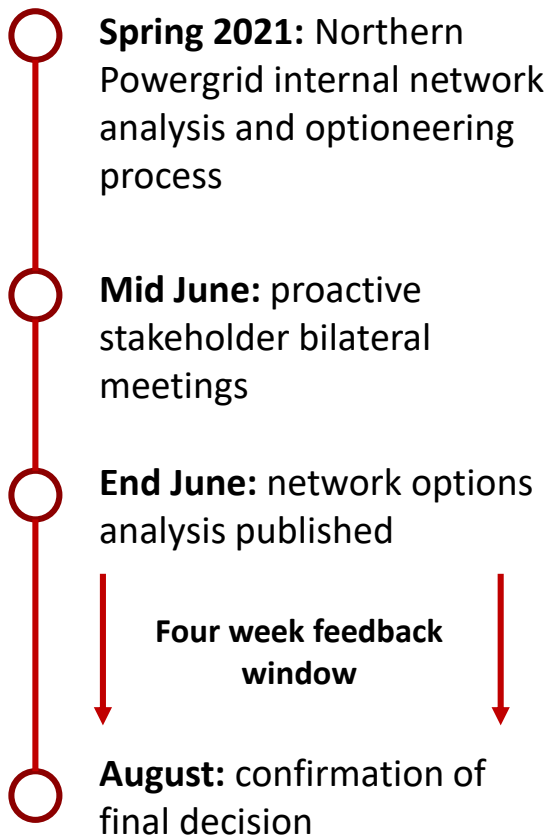
Network Options – Final Decision

August 2021



We're sharing our final decision regarding network options for two of our primary substations at Normanby by Stow and Burton Pidsea

Our Engagement Process



Why are we providing this update?

- In June we published our preliminary decision not to start flexibility services procurement at Normanby by Stow or Burton Pidsea for two reasons:
 1. We think that proceeding with a network flexibility solution is more economic and efficient in this case
 2. We do not want to undermine trust or the long term development of flexibility markets in our region with pricing offers that are significantly below market rates
- We published this reasoning on our website for 4 weeks to allow stakeholders time to feedback (which closed on 25th July). We also proactively met bilaterally with flexibility market participants to validate our thinking and gather perspectives
- We have not received any significant challenge during the four week window for feedback and our proposals met with support during our bilateral engagements
- **Therefore, we are finalising our decision to proceed with a network flexibility solution at Normanby by Stow and Burton Pidsea rather than seek flexibility services**

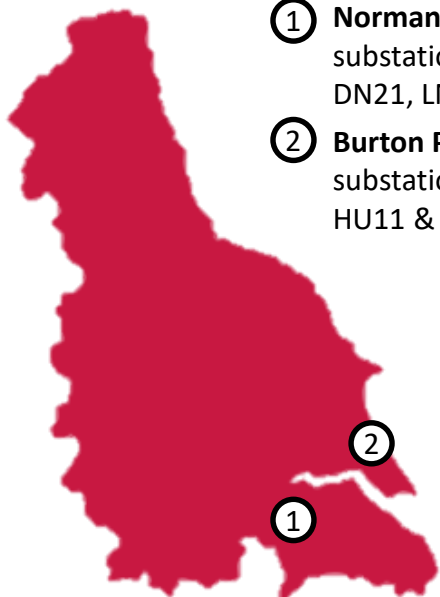
Supporting Rationale

The following pages detail the network options we've assessed and further supporting rationale for our decision. They were originally published in June 2021 for stakeholder feedback and are retained here for information.

We're sharing our assessment of network options for two of our primary substations at Normanby by Stow and Burton Pidsea for stakeholder feedback

Northern Powergrid: We manage the electricity network for more than 8 million people across 3.9 million homes and businesses in the North East, Yorkshire and northern Lincolnshire.

Our region



- ① **Normanby by Stow** substation (postcodes DN21, LN1, LN8)
- ② **Burton Pidsea** substation (postcodes HU11 & HU12)

Why are we seeking feedback?

- We will always consider flexibility services before building new infrastructure and be transparent about our decisions
- In November 2020, we sought expressions of interest from flexibility providers at 15 major substations where we may need flexibility services during ED2
- This spring we have been considering the use of flexibility services at two of our substations (see left)
- **Our preliminary decision is not to start flexibility procurement at Normanby by Stow or Burton Pidsea for two reasons:**
 1. We think that proceeding with a network flexibility solution is likely to be more economic and efficient in this case
 2. We do not want to undermine trust or the long term development of flexibility markets in our region with pricing offers that are significantly below market rates
- **We are sharing our reasoning and seeking your feedback before making a final decision about our preferred option**

Network Options: intervention is needed at Normanby by Stow and Burton Pidsea. We've considered flexibility services and network solutions

Normanby by Stow

- 33/11kV single transformer primary substation in Lincolnshire
- Network intervention needed under engineering regulations to ensure voltages remain in statutory limits under fault conditions

Network smart solution

Network flexibility (Smart) solution: voltage regulators at cost of £500k

Flexibility Option

Seek flexibility providers in suitable postcodes under the following service requirements:

- 4,435 MWh of availability windows per year (3,696 hours at 1.2MW peak requirement)
- 4,435 MWh of flexibility provision (pre-emptive demand management service)
- Demand side response or generation turn up would be suitable

Burton Pidsea

- 66/11kV single transformer primary substation near Hull
- Network intervention needed under engineering regulations to ensure voltages remain in statutory limits under fault conditions

Network smart solution

Network flexibility (Smart) solution: voltage regulators at cost of £500k

Flexibility Option

Seek flexibility providers in suitable postcodes under the following service requirements:

- 280 MWh of availability windows per year (280 hours at 1MW peak requirement)
- 280 MWh of flexibility provision (pre-emptive demand management service)
- Demand side response or generation turn up would be suitable

Flexibility Pricing: low alternative solution costs mean that we aren't able to offer market rate prices for flexibility at Normanby by Stow and Burton Pidsea

Flexibility Pricing Process

1

Overall Budget: this is created by applying NPV assumptions to the cost of our alternative network option (£500k)

- Flexibility would allow us to defer £500k investment at both sites
- Assuming a discount rate of 3.5%, this creates a budget for flexibility services of £16,908
- We have inflated this budget by 20% to reflect the option value associated with deferring investment and our preference for flexibility solutions
- **Annual budget for flexibility: £20,289**

2

Flexibility Requirements: what are the requirements for a flexibility service sufficient to defer reinforcement?

- Requirements are created by considering electricity demand patterns against network capability
- A peak MW requirement, availability windows and expected utilisation are created
- **For Normanby by Stow these are for up to 1.2MW over 3,696 hours, so 4,435 MWh**
- **For Burton Pidsea it is 1MW for up to 280 hours, so 280 MWh of flexibility**

3

Unit Pricing: what does our available budget allow us to pay for flexibility services at these two sites?

- Available budget (c.£20k) is spread across the flexibility need
- **For Normanby by Stow this means £4.57 is available per MWh of flexibility per year**
- **For Burton Pidsea it is £72 per MWh of flexibility per year**

Analysis

- Our analysis indicates ~£300 per MWh as a unit price for flexibility services to defer network investment
- We don't want to offer flexibility at prices that are not attractive. We're concerned this may frustrate providers and harm the long term development of markets in our region
- Paying £300/MWh would lead to us exceeding available budget by c.6500% at Normanby by Stow and 414% at Burton Pidsea. We do not think this is an economic or efficient option for our customers

Options Assessment: we've now confirmed our decision to proceed with reinforcement following stakeholder engagement

Option	Advantages	Risks	Assessment
1. Proceed with £500k network flexibility solution at both sites	<ul style="list-style-type: none"> Relatively low cost scheme compared to conventional reinforcement Resolves existing network issues Avoids risk of flexibility procurement that is either inefficient or detrimental to long term market development (see below) 	<ul style="list-style-type: none"> Asset based solution and therefore an irreversible investment. This investment should not be made until stakeholders have had the chance to feed back on our preliminary decision 	FINAL DECISION
2. Seek flexibility services under available budget	<ul style="list-style-type: none"> Allows us to test availability of providers in the two locations identified Efficient procurement within allowable budget 	<ul style="list-style-type: none"> Offering flexibility at price points significantly below market prices may damage long term development of flexibility markets in our region May deter future participation in flexibility tenders if returns offered to providers are not adequate 	Not preferred
3. Seek flexibility services at unit price of £300/MWh	<ul style="list-style-type: none"> Increased chance of successful flexibility procurement compared to seeking services under available budget 	<ul style="list-style-type: none"> The budget required for this option would be much higher than allowable under budget assumptions Our preliminary decision is that this option does not represent an economic and efficient approach managing our network 	Not preferred

Interested in flexibility services? We would still really like to hear from you

Please get in touch via
flexibility@northernpowergrid.com



Where else can I find out more?

- Later this year or in 2022, we plan to provide early visibility of the sites on our network where we expect to seek flexibility services during the upcoming ED2 price control period (2023-28)
- In April we published our **Distribution Flexibility Services Procurement Statement** setting out our plans for flexibility procurement in the coming regulatory year
- We've recently published our **Draft ED2 Business Plan**, setting out our plans for the upcoming ED2 price control period, including our DSO Strategy Annex
- There are a range of other materials and resources available on the **DSO Section of our website**