



# **Network Access Policy (NAP)**

**National Grid Electricity  
Transmission**

Effective from 01/04/2019

**nationalgrid**

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# 1

## Executive Summary

# Executive Summary

This document, National Grid Electricity Transmission's Network Access Policy (NAP), is designed to facilitate collaboration between the National Grid Electricity System Operator (NGESO) and National Grid Electricity Transmission Ltd (NGET) to deliver value for consumers in relation to the planning, management and operation of the electricity transmission system in England and Wales. The requirement for NGET to have in place a Network Access Policy is detailed in special licence condition 2J of the transmission licence.

From 1<sup>st</sup> April 2019, the System Operator role for England and Wales is separated from NGET to a new separate NGESO company. NGESO is the electricity System Operator for England & Wales, Scotland and the Offshore networks. NGET is the electricity Transmission Owner (TO) for onshore England and Wales. In Scotland, the TO's are Scottish Hydro Electric Transmission plc (SHE Transmission) and Scottish Power Transmission Limited (SP Transmission Ltd).

In the management of the electricity transmission system in England and Wales, NGET will need to construct and connect new equipment, maintain or replace ageing equipment and carry out any other work required to protect the reliability and health of the electricity transmission system. To enable this, it is necessary to switch out parts of the electricity transmission system to carry out work safely. Temporarily de-energising equipment by switching out one or more assets on the electricity transmission system is essential to allow work to be carried out safely. This is commonly described as an outage. Certain outage conditions can impact on the operation of the system and result in constraint costs. This is where generators of electricity are compensated by NGESO for being forced to change their output. These costs can be substantial and are ultimately passed on to end consumers.

This Network Access Policy sets out the principles of how NGET and NGESO will collaborate to enable work to be completed on the electricity transmission system, taking into consideration the impact on consumers and network users, system security and constraint costs as a result of outages.

Specifically, this policy sets out the way NGET and NGESO will provide visibility of the decision making used to confirm the baseline outage plan and manage changes to that plan to meet evolving system needs. This includes cost transparency of NGET's activities to NGESO and vice versa, to enable both parties to make informed decisions for the value of consumers and network users.

Key to delivery of this process is a flexible and collaborative approach taken by both NGET and NGESO in areas such as outage timing, working with other stakeholders (e.g. generators and Distribution Network Operators), finding innovative solutions to network issues and frequent and effective consultation with each other to ensure the optimal system and cost outcomes can be achieved for consumers and network users.

This Network Access Policy includes the actions in both the short-term and long-term to plan and manage network access. The long-term framework looks forwards at a period of one to a minimum of six years ahead (more

where required). This is to help schedule works, avoid duplication of effort, work with connected users and ensure that connection dates for new customers can be achieved. The short-term framework considers work in the current planning year (running from 1<sup>st</sup> April to 31<sup>st</sup> March of the following year), looking at how it is scheduled and managed, including how system faults and other real-time events can affect the safety, reliability and security of the network.



# 2

## Requirements for the Network Access Policy

# Requirements for the Network Access Policy

Transmission licence special condition 2J places on NGET a number of essential requirements for inclusion in this Network Access policy, namely:

- a) Details of the actions that NGET will take to coordinate with NGESO and/or other Transmission Owners as appropriate to ensure that planned network outage arrangements are agreed with due consideration of the long-term outcomes for consumers and network users;
- b) Details of the actions that NGET will take for the purposes of responding to and managing unplanned network outages with a view to minimising their contribution to network constraints, subject to the need to ensure the safe, secure operation of the National Electricity Transmission System as a whole or any part of it;
- c) Details of the types of circumstances that are likely to require an alternative approach to that set out in relation to the above two paragraphs; and
- d) A description of NGET's communication and coordination strategy for interacting with NGESO in respect of matters relating to this Network Access Policy.

The Network Access Policy does not seek to replace the SO-TO Code (STC) or the suite of STC Procedures (STCPs) or other industry arrangements, rather to support them. It is concerned with system access planning and related issues and lays out our expectation of the system access management processes that will be required to implement and reflect our goal to achieve delivery of NGET's business plans.

In meeting the requirements of this policy, NGET will seek to ensure that its activities associated with the planning, operation, maintenance and development of the Transmission System:

- Are complementary and work together with the System Operator to deliver safe, secure and economic energy to consumers
- Take due consideration of the long-term outcomes for consumers and network users
- Utilise an approach which takes account of the trade-off between the impact (including cost) of these activities and the associated System Operator costs and system security impact and makes them more transparent

In doing so, NGET will:

- Clarify what stakeholders can expect from NGET in terms of the availability of the transmission network, including the planning and management of outages and the risk of over-runs.
- Help define the principles for a baseline level of service acceptable to both NGET and the System Operator, including the approach to co-ordination and management. Recognise that that the operational and construction

costs of NGET, the impact of project delivery timescales, the System Operator operate the system costs in terms of constraints and the overall impact on network users, consumers and other stakeholders, all need to be considered as part of the planning and management process.





# 3

## Network Access Timeframes

# Timeframes

The short-term framework focuses on the current year, (being the period being 1<sup>st</sup> April to 31<sup>st</sup> March of the following year). It deals with planned work and monitors progress throughout the year, as well as managing real-time issues such as faults and system emergencies. These short-term issues may be due to disruption and/or damage caused by severe weather conditions, asset deterioration, third-party actions or other plan change requirements.

The long-term framework covers from one to a minimum of six years ahead, and concentrates on the planning of works and minimising the potential adverse impact on the network. For work which requires system access in two to six years' time, the outage plans will initially be on a preliminary basis having considered the broad impact on electricity security of supply when judged against industry standards and relevant operational constraints. As works advance closer to delivery timescales the detail is firmed up.



# 4

## Steps to satisfy the Network Access Policy requirements

# Steps to satisfy Network Access Policy requirements

The key steps that NGET has identified, to ensure that the policies and requirements of the Network Access Policy are satisfied, are detailed below.

The following assumptions have been made throughout:

- In co-ordinating and directing the flow of electricity on the transmission system, NGESO shall ensure that it does so in accordance with its licence, and associated standards and obligations.
- In managing outages, and in complying with the STC and STCPs, outages will be planned taking into account:
  - The impact on maintaining a safe and secure system.
  - Resourcing requirements.
  - The impact on system costs in short and longer term.
- Security and Quality of Supply Standards (SQSS) are the minimum baseline for system security planning. It is recognised that in some circumstances, NGESO will reasonably plan to secure the system to a greater degree than required by SQSS to ensure prudent operation of the Transmission System. In such circumstances when system access is subsequently not approved and where this causes a significant impact to NGET, then the overall best outcome for consumers and network users shall be assessed in line with this Network Access Policy.
- Through the outage management process NGESO shall work with NGET to try to resolve any TO/SO trade-offs in the best interests of the consumer. Where NGET incurs additional costs as a result of these agreements they shall be remunerated as per the relevant STCP mechanisms and/or in line with the relevant current regulatory framework.

## 4.1 Trading off Constraint, Transmission Investment and System Operation Costs

Constraint costs are affected by the availability of the Transmission System. This is, in turn, is affected by the Transmission Owner activity, for example, taking equipment out of service for maintenance, replacement or refurbishment.

NGESO may wish to influence Transmission investment by requesting functional design changes to give operational flexibility to minimise future constraint costs or to request different delivery timescales or techniques.

Operational costs for NGESO may be reduced if the duration of works is shortened or if works are undertaken at times of favourable energy flows (e.g. when a specific power station that would be behind a constraint is also being maintained). NGET can also contribute to reducing constraint costs by prioritising actions to sustain asset ratings or to enable increases in ratings where required, either temporarily or permanently. This may result in increased cost to NGET e.g. from extended working hours, movement of resources from other zones, or an increased risk to assets. The net result however may be beneficial to the consumer.

NGET costs can be affected NGESO driven outage changes or cancellations, particularly in shorter term planning timescales where contractual commitments to suppliers may have been made, resources may have been committed or where remobilisation would incur additional cost. These project costs normally increase the closer to real time the changes occur.

NGET will propose and organise outages that minimise the impact to customers whilst meeting our other obligations.

NGET will take into account:

- The cost of implementing works on the transmission network which requires a network outage
- Through co-ordination with NGESO, potential operational costs on the network (including constraint costs) associated with outages

In the event that NGESO or NGET makes a change to the agreed outage plan or NGESO wishes to utilise an enhanced service or specification from NGET, and if the change results in significant system security issues (further to SQSS requirements), excessive constraint costs or significant impact or cost to NGET not already remunerated for under the regulatory framework, NGESO and NGET will then jointly prepare a “Record of the Application of the Network Access Policy Form”.

The Record of the Application of the Network Access Policy Form will detail the reason behind the change and the impact of the change on the NGESO and NGET. Full details of the minimum information requirements to be recorded are detailed in Appendix 2.

## 4.2 Planning, Management & Co-ordination of System Access

The detailed Outage Planning process is documented in STCP 11-1 – Outage Planning.

This document does not seek to replicate STCP 11-1 but to clarify the principles by which NGESO and NGET will collaborate to agree the Outage Proposals and Outage Plans with due consideration of the long-term outcomes for consumers and network users.

In building the NGET Outage Proposals in line with STCP 11-1, NGET will prioritise system outages on a case-by-case basis, taking into account the consequences of under or late delivery.

When prioritising system outages, NGET will seek to ensure:

1. Security and Quality of Supply Standards (SQSS) are adhered to
2. Urgent asset interventions are completed to ensure the safe operation of the system
3. The timely provision of customer connections and reinforcement of the wider transmission network to minimise transmission costs
4. The ongoing availability and reliability of the transmission network

The transmission outage plan will be made available to the relevant interested parties via NGESO.

NGET will ensure focus on the following areas:

- Liaison with NGESO and other interested stakeholders on the programme of circuit and equipment outages and any changes to these outages
- Defining work programmes which minimise work delivery costs; subsequently amending in light of discussions with NGESO to reconcile with other concurrent outage requests
- Bundling of outages (where outages for a number of projects on the same circuit may be programmed during the same outage window to minimise the number and duration of outages, and therefore minimise the associated operational costs).
- Ensuring plans are in place to return equipment to service to meet agreed Emergency Return to Service (ERTS) timescales

- Providing flexibility, including consideration of an extension of the working week beyond Monday to Friday or beyond basic daytime working hours where it is deemed safe to do so
- Identifying where an outage or sequence of outages, if disrupted, would have significant impact on NGET work activities and/or cost consequences; requesting or implementing mitigating actions as appropriate

To fulfil its obligations, NGET requires NGESO to ensure focus on:

- Provision of information on the system security and constraint cost impact of the circuit Outage Proposals being developed by NGET
- Reviewing opportunities for extended return to service times on certain circuits, allowing NGET to deliver the work at a lower cost
- Identifying additional outage opportunities where they arise
- Identifying where an outage or sequence of outages, if disrupted, would have significant impact on system operating costs or NGET outage work activities and/or cost consequences; requesting or implementing mitigating actions as appropriate
- Providing justification from Distribution Network Operators (DNO's) or other system users for system access related decision making where those DNO's or users own system issues impact upon NGET's Transmission System access and, in line with the principles of this Network Access Policy, prioritise system access based on the overall best outcomes for consumers and network users

## 4.3 Managing Outage Overruns, Delays and Changes

A critical component of managing change in the outage planning process will be the level of interaction and information flow between NGET on the one hand, and NGET and the other Transmission Owners on the other.

Managing risks relating to overruns and delays to outages will be addressed through:

- The development of appropriate contingency plans where necessary and a review of Emergency Return to Service arrangements as a result of system access change requests submitted by NGET for approval by NGETSO.
- In delivery, work will be appropriately monitored to ensure timely deployment of contingency plans
- NGET will proactively measure and manage plan change to help minimise unnecessary plan overruns and delays

In the event that NGETSO or NGET makes a change to the agreed outage plan and if the change results in significant system security issues (further to SQSS requirements), excessive constraint costs or significant impact or cost to NGET not already remunerated for under the regulatory framework, the System Operator and NGET will then jointly prepare a “Record of the Application of the Network Access Policy Form” as detailed in Appendix 2.

This form does not replace the normal process for requesting and approving outage changes between NGET and NGETSO but is a mechanism for recording the relevant information and agreement where the principles of this Network Access Policy have been applied i.e. in giving consideration to the long-term outcomes for consumers and network users.

## 4.4 Establishing a ‘baseline’ delivery plan for activities

NGET will try to “bundle” outage requests to minimise the number and duration of outages. This should result in a more efficient plan in terms of system constraint costs compared to an unbundled plan. However, this may from time-to-time give rise to additional costs for delivering the work (when compared to a “least cost”, unconstrained approach). The enhanced service section below indicates some of the options which may be considered to optimise the outage plan and trade-off constraint savings with additional delivery costs.

The ‘baseline’ work plan will be the work plan developed as of March of the calendar year preceding its delivery (e.g. March 2019 for delivery from April



2020). The 'baseline' delivery cost would be the cost of delivering the activities without deployment of any of the enhanced services identified or developed in the future.

## 4.5 Enhanced Services above the Baseline Level of Service

There may be opportunities for NGET to offer additional or alternative delivery options or technical innovation which delivers overall value to consumers. Where NGESO requires an amendment to an agreed outage, or identifies the potential for significant constraint costs, NGET will consider the following options and make visible associated costs to enable consideration of steps to minimise the associated constraint costs:

- Increasing manpower – additional resource enabling shorter overall outage
- Temporary increases in circuit loading – increased short-term circuit ratings to reduce constraint costs with (where appropriate) a subsequent low-loading period to minimise asset impact. This may require:
  - Real-time equipment monitoring
  - Thermal monitoring
- Increase to continuous circuit ratings – normally post-fault. This may require:
  - Meteorological Office Ratings Enhancement
  - Hotwiring schemes
  - Sag monitors on overhead line conductors
- Network reconfiguration – changes in network configuration, including temporary bypass schemes and cross-jumping of overhead line circuits
- Alternative engineering outage arrangements – outages requiring sub-optimal work procedures and increased costs
- Reduced Emergency Return to Service times above baseline low cost option
- Temporary inter-trip schemes
- Advancing investment, or deferring investment if the resultant risks can be managed at a lower cost than the alternative constraint cost
- Enhanced supply chain, procurement and resourcing contracts
- Other innovative techniques such as Live Line Working

## 4.6 Monitoring and Review

The monitoring and review of this Network Access Policy will involve regular meetings between the System Operator and Transmission Owners including NGET. Wherever the Network Access Policy is enacted decisions made will be recorded as part of the process (as detailed in Appendix 2).

Whilst it is not a requirement for NGET to work with other onshore Transmission Owners in respect of reviewing this Network Access Policy, it is acknowledged that NGESO and the consumer may see benefit from alignment and collaboration between Transmission Owners on aspects of the Network Access Policy. As such NGET will endeavour to work with the other Transmission Owners in the review of this Network Access Policy.

This regular consultation and engagement with stakeholders is a key component of the process and will allow the SO and TOs to adapt and change the way they work in response to ongoing feedback, review and change management.

NGET will review and make such amendments as may be necessary to this Network Access Policy at least once in every 2 years (as per Special Licence Condition 2J.8).

## 4.7 Communication

Communication between NGET and the System Operator is critical to meeting the objectives of the Network Access Policy. This will include regular communication between counterparts in NGET and NGESO both day-to-day on operational matters (e.g. face-to-face, phone, email, etc.), and through tactical discussions (e.g. meetings, teleconferences, webinars etc.) to share relevant planning details.

This communication is only effective by having appropriate representation on, or liaison with, the teams which identify, develop and plan the various work activities on the network.

This close co-operation continues through to work delivery in current year where any work re-prioritisation similarly seeks to reconcile any immediate actions to complete the work against a detrimental impact on other works, statutory and regulatory obligations.

In order for NGET to be able to effectively develop Outage Proposals, NGET requires NGESO to communicate updates regarding relevant changes to outage planning guidance.





## Appendix 1

Outage planning framework change control process

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# Appendix 1. Outage planning framework change control process

## A1.1 SHORT-TERM OUTAGES

Within the current year, changes made to the outage plan are normally those that are essential changes, additional work and previously unplaced outages such as faults, safety issues, defects that affect plant and equipment ratings, unforeseen project issues and unforeseen or emerging maintenance requirements. There is also a requirement for NGET to take advantage of within year opportunity outages in order to deliver its obligations and NGESO should work with NGET to identify and use these opportunities.

STCP 11-1 – Outage Planning provides full details of the within year Optimisation and Delivery phases of the planning process.

## A1.2 LONG TERM OUTAGES

Apart from plant and equipment failures, capital schemes will normally be developed and have sufficient information about outage and resource requirements as they enter the year-ahead plan build stage as per STCP11-1 Outage Planning framework. STCP 11-1 specifies how to manage outage requests from one to six years (and beyond where agreed appropriate by NGESO and NGET) ahead of first site access.

### Year 3 and Beyond

- At any time for Year 3 and beyond any party should initiate discussions with another party regarding outages as and when they become known.

### Outage Plan Build at Year 1 & 2

- In line with STCP11-1, the objective of the Outage Plan Build is to construct an Outage Plan that provides each TO with access to their Transmission System for that Plan Year. NGET will submit Outage Proposals to NGESO who will develop a Provisional Outage Plan, followed by Draft Outage Plan and ultimately a Final Outage Plan. The development of the Outage Plans is an iterative process requiring frequent NGESO and NGET liaison.

## A1.3 CHANGE CONTROL PROCESS

If NGESO or NGET needs to make a change to the agreed Outage Plan and the change results in significant system issues, excessive constraint costs, severe project delay and/or significant additional costs to NGET, NGESO and NGET will then jointly prepare a “Record of the Application of the Network Access Policy Form” as detailed in Appendix 2. This does not replace the normal process for requesting and approving outage changes between NGET and NGESO. The form is a mechanism for detailing and recording the

relevant information and decision taken where the principles of this Network Access Policy have been applied.

The document will specify the reason for the change to the outage plan and the associated impact on system security and operational costs.

NGET will work with NGESO towards an agreed methodology of quantification of impact and risk, not just cost, to enable decision making to be made taking into account the overall best outcomes for consumers and network users and to give clearer visibility of the decision-making process and the resultant impacts on all parties.

The NGET impact (including cost) will be recorded at a level appropriate to enable informed decision making and transparency, and in the interest of practicality and efficiency will not go down to extraneous levels of detail.

Where the outcome from the change control process results in accepting an increased risk to system security, NGESO will inform any relevant party of the impact to them and include reasons why the decision has been taken.

Where the outage change control process identifies that the cost, or other significant impact to either NGET or the System Operator increases in order to minimise the overall impact to the consumer, then both NGET and the System Operator will continue to work with each other in order to minimise the subsequent impact on the affected party.

In all cases, the best overall outcome for the consumer and network user will be decided upon as per the principles laid out in this Network Access Policy.

## **A1.4 CONSIDERATIONS DURING CHANGE CONTROL**

Factors for consideration in the change control process from NGESO should include:

- A risk based assessment of system operational costs, including constraint cost and likelihood estimated by NGESO based on commercial prices and forecasted generation and interconnector profiles
- Potential system security issues based on Transmission System availability and predicted generation profile

Factors for consideration by NGESO may also include:

- Alternative options for re-routing power, increasing demand and / or other commercial arrangements for minimising potential constraint costs

Factors for consideration in the change control process from NGET may include:

- Potential costs arising from changing an outage, including manpower and contractor costs, equipment hire, variation costs and environmental or land access issues
- Alternative options for redeploying resources, such as bringing forward an alternative outage, compressed or extended working patterns, etc.
- Use of dynamic line ratings on either the affected or adjoining circuits
- The cost of providing enhanced Emergency Return to Service times above baseline no cost option
- Probability and system risk/cost of losing demand if utilising Demand at Risk Process
- Where demand customers are affected, use of standby or mobile generation to maintain security of supplies
- Potential cumulative effect on other projects of rescheduling outages
- An assessment of the safety, environmental or system reliability impact from delaying or cancelling the outage



## Appendix 2

Record of application of the Network Access Policy

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# Appendix 2. Record of application of the Network Access Policy

If NGESO and NGET apply this Network Access Policy to reach agreement in the best interests of consumers and end users, and the decision results in significant system security issues (further to SQSS requirements), excessive constraint costs or significant impact or cost to NGET not already remunerated for under the regulatory framework, NGESO and NGET will jointly complete a Record of Application of the Network Access Policy form.

This may be due to a change to the agreed outage plan, driven by either NGET or NGESO. It may also be where NGESO wishes to utilise an enhanced service or specification from NGET or where NGET utilises alternative methods of working to reduce system operational costs.

The format by which the information will be communicated and recorded shall be agreed between NGET and NGESO.

The minimum information to be recorded shall include:

Title of work, Reference of work

1. Summary
2. Background: TO impact (e.g. Construction Costs, Cost of Enhanced Service)
3. Background: SO impact (e.g. Constraint Costs, System Security)
4. Options and mitigating actions
5. Forecast costs
6. Conclusions (what is in the best interests of the consumer)
7. Record of Agreed Outcome
8. SO acknowledgement
9. TO acknowledgement

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