ECPG Methodology 2027/28

November 2026

LTS Planning

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Standard Special Condition A57

In December 2020 OFGEM published their RIIO-2 Final Determinations for the transmission and gas distribution price controls. These set out the key elements of the price control from 1 April 2021 to 31 March 2026. This included a new licence obligation for the gas transporter licence holders to comply with an enhanced obligations framework in relation to the exit capacity booking process.

SSC A57 was retained for the RIIO-3 price control running from 1 April 2026 to 31 March 2031.

Standard Special Licence Condition ("SSC") A57 (Exit Capacity Planning) of the gas transporter licences requires the licence holder ("licensee") to comply with the Exit Capacity Planning Guidance ("the Guidance") which is available here: Exit Capacity Planning Guidance | Ofgem

The Guidance comprises a set of requirements relating to the following areas of capacity booking activity. However, in this initial year specific transition arrangements are in place to confirm a reduced set of requirements.

- Methodology: GDNs must provide information on the structure of their networks known as Network Topology, and both GDNs and NGT must provide information on their forecasts of demand and the details of the processes in place to calculate these forecasts.
- Engagement: the GDNs and NGT must collaboratively work with each other and with other stakeholders to maximise booking efficiency across the gas transportation network as a whole.
- Reporting: licensees must report annually to the Authority on capacity booking methodology, stakeholder engagement, decision-making and data to demonstrate efficient booking outcomes.

Some of the information has been redacted due to its sensitivity in line with DESNZ and the CPNI general principles of security around its wider disclosure.

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1 Introduction

To meet our Gas Transporter license obligations, the NTS Exit Capacity that we book must be sufficient to meet demand on a peak 1 in 20 day.

As per the ECPG we are now obliged to align capacity bookings, if possible, to the 1 in 20 peak demand forecast. We work with expert industry partners to develop our annual forecasts. The starting point is actual demand from the previous year which is analysed along with information obtained from recognised industry sources. Results are tested against our previous years' forecast to improve accuracy year-on-year. This gives us greater confidence when booking NTS exit capacity to ensure security of supply for customers and compliance with our licence conditions and deliver the best industry solution within current commercial frameworks.

Our annual demand forecasts are carried out at Local Distribution Zone (LDZ) level and published in our Long-Term Development statement in line with our GT licence and section O of the UNC. These forecasts are updated each year to take in to account any changes in the economy and government legislation. This allows directions in the deployment of renewable energy and provision of heat to be included when the decisions come into force. Therefore, our forecast should not be compared with NESO FES (Future Energy Scenarios) which are based on a set of scenarios designed to inform wider industry. Our demand forecasts are discussed further in our Long-Term Development statement, along with our demand forecasting methodology which can be found on our website here. Following industry wide engagement with our stakeholders the forecasts are used to inform our exit capacity booking strategy.

The purpose of this document is to satisfy the requirement comprised within the Exit Capacity Planning Guidance (ECPG) document to publish a methodology statement, setting out the process used to assess the requirements for NTS exit capacity, as set out in paragraphs 3.2-3.6.

2 Collection and processing of actual demand data

2.1 Pre Forecast data

UNC Offtakes Arrangement Document (OAD) Section H describes the pre forecast data that must be shared between National Grid ESO and the DNOs to provide a common starting point for long term demand forecasts.

We meet this obligation through the Central Data Service Provider (Xoserve) who provide the Gas Distribution Networks with summary data to support our demand forecasting processes. The data is provided by the 2nd Friday in February. It gives actual consumption and shrinkage during the previous calendar year corrected to the Seasonal Normal CWV conditions with throughput broken down into the following categories:

- NDM 0 to 73.2MWh per annum
- NDM 73.2 to 732MWh per annum
- NDM >732MWh per annum
- DM
- Shrinkage
- Embedded Power site data
- Total LDZ

These volumes take account of adjustments made in respect of individual site and aggregate NDM reconciliation, including the re-phasing of adjustments into earlier years.

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2.2 New Loads accepted and connected

The Xoserve summary data includes confirmation of the total number of new loads connected in each LDZ in the previous calendar year, and the number of loads in aggregate at the end of the year, split between domestic (0 to 73.2MWh p.a.) and non-domestic (>73.2MWh p.a.) categories.

2.3 Large Load Data

Included in the Xoserve summary data is details of any large load consuming or expected to consume >58.6GWh per annum, and new sites in this category that have connected in the previous calendar year. We use this data to gather local intelligence on potential changes to their consumption behaviours.

Large customers expected to connect to the LDZ over the 10 year forecast period are only included when we have accepted their acceptance of a connections quotation and they have provided a firm date for their connection to the system.

2.4 DS8 Report

Once we have assessed the large load information a draft of the DS8 large load data is then created. Any significant changes highlighted through this assessment is included:

- Within our demand forecasts
- in our network models at the appropriate demand levels
- and for NESO to use in their demand forecasting processes

2.5 Summary

The pre- forecast information above is provided to the NESO Forecasting team for their use during their demand forecasting processes.

3 Customer engagement and data collection

3.1 Large Loads

Some of our customers' demands are large enough to have a significant impact on the management of our networks. This requires us to pay special attention to how and when they use gas at a macro level.

Wherever possible, we will engage either directly with the customer or via their shipper each year to ensure we are accurately considering their gas requirements during the planning cycle.

In lieu of direct engagement with the customer we will carry out detailed analysis of a sites current and past behaviour to determine an appropriate level of demand for the forecasting period.

3.2 Connections enquiry data

Connections enquiries at a Transmission (>7bar) and Distribution (<7bar) level are analysed to ensure existing system capabilities are suitable and, where they aren't, the required measures are taken in line with our planning polices detailed below in the section Network planning policies and procedures.

3.3 Embedded power

All DNs have collectively reacted to the changing demands asked of our customer and commercial services in relation to flexible generation and unregulated supplies.

We have adapted and added to our processes to provide a better and consistent approach across the industry as well as holding annual flexible generation conferences to increase communications between concerned parties.

More detail on how we appraise and manage these customers demand requirements can be found in our ECPG Forecasting methodology on our website here.

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3.4 Entry Customers

We do not consider green gas supplies during the annual planning cycle with regards to reducing our offtake bookings. This is due to the intermittent nature of supply from these sites and the potential of insufficient capacity on a peak day as a result.

We engage regularly with our connected entry sites throughout the year on a site-by-site basis and at several industry forums hosted by the ENA.

The assumption these sites are off may change in the future therefore this engagement will become more important as and when that happens.

3.5 Local Authorities and iGTs

We engage with local authorities and iGTs to ensure our networks are capable of supporting our current and future customers. This interaction is predominantly completed at a <7bar level with any impacts from the engagement resulting in capacity changes at a >7bar level as required.

All activities are carried out in line with the relevant planning polices detailed below in the section Network planning policies and procedures.

3.6 Other DNs

We regularly meet with other DN's on a number of subjects including the recent SSC A57 requirements and enabling a net zero future for our customers.

We also engage on Inter LDZ transfers with other DNs. These are legacy connections from when the gas networks were managed nationally under one operation as British Gas and then Transco.

These connections allow the movement of gas between DNs in areas where the recipient DN would otherwise have poor pressures.

These connections are covered by Inter LDZ Ancillary Agreements. Each year the downstream DN provides the upstream DN their demand requirements for the first 5 years of their 10 year planning cycle to enable the upstream DN to include their volumes within their exit capacity booking.

3.7 National Gas Transmission & NESO

All DN's meet via the Network FES Forum. We also look to develop changes to commercial arrangements to ensure efficient access to and use of the Total System for our customers via forums such as Transmission Workgroup.

For further information on when these meetings take place see the Joint Office of Gas Transporters website.

NGT

Meetings are held with NGT at several stages of the Exit Capacity planning process. These meetings are held to ensure both parties requirements are considered in arriving at a suitable booking strategy for the total system.

The meetings cover; the expectations of the Demand Forecast, the expectations of our booking requests, the likely response to the Assured Pressure Requests, the response to the bookings requests and changes to accommodate rejections of the requests where needed.

The introduction of the ECPG allows 3rd parties to attend as observers at NGT/DN discussions on NTS exit capacity bookings. Where third parties attend NGT/DN meetings as observers, any sensitive or security-restricted information will be managed through redaction or confidentiality undertakings as appropriate.

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NESO

Each year, we have bilateral meetings with NESO. The first is in mid-March to discuss their pre forecast data and receive an overview of their demand forecast assumptions from the FES process. These assumptions may change by the time NESO have completed their demand forecast in May.

The second meeting, which is arranged later in the year, provides a platform to discuss the differences between NTS/DN forecasts and potential assumptions to be used in their future FES forecasts.

3.8 Summary

Regular engagement with our stakeholders as detailed above is essential to inform accurate capacity bookings at our offtakes and efficient planning of our network. Here, we have demonstrated the range of stakeholders we engage with and how they influence our decisions during this process.

4 Load and demand forecasting

Our annual demand forecasts are carried out at Local Distribution Zone (LDZ) level and published in our Long Term Development statement in line with our gas transporter licence and section O of the UNC.

These forecasts are developed exclusively for capacity planning using current Government legislation and economic statistics to ensure we can maintain a safe, economic, and secure network for our customers. These forecasts are updated each year to take in to account any changes in the economy and government legislation. This allows decisions on the directions towards the renewable economy to be included in our forecast once actual decisions have been made.

You can find our approach to demand forecasts in our ECPG Forecasting methodology as well as our current and past LTDS' on our website here.

5 Population of network analysis and other models

5.1 Software used

Falcon

We utilise Falcon v3.1.2 to carry out our transient analysis and LTS modelling which can use the following flow equations: Panhandle A, Smooth pipe law, AGA. We use Smooth pipe law throughout our analysis.

The software is developed and supported by DNV.

Prism

We use Prism v4.6.2 to calculate our PRI and Offtake capacities. Prism can use either of the following flow equations; Colebrook -White or Smooth Pipe law. We use Smooth pipe law throughout our analysis.

The software is developed and supported by DNV.

HTREC

We use HTREC to calculate heating requirements at our sites as well as heat recovery distances on outlet pipework.

The software is developed and supported by DNV.

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CONSUS

We use Consus to determine the storage required for all LDZs. The software applies Monte Carlo techniques to planning and operational data to determine storage requirements.

The software is developed and supported by DNV.

Synergi Gas

We utilise Synergi Gas steady state throughout our <7 bar planning processes

The software is developed and supported by DNV.

5.2 Annual model Build

Model Build

Under UNC OAD section H and the demand forecast exchange process GDNs are required to provide NGT by 31st July each year demand forecasts for each NTS Offtake for the first 6 years of the planning cycle.

The demand conditions requested are as follows on our load duration curve from our demand forecasts:

- 1 in 20 peak, day
- Day 13 severe,
- Day 46 average,
- Day 150 average
- Day 300 average

Each year a new set of planning models are built based on the list above. These models are created from our Demand Statement 1 (DS1) curve which ranks our annual demand by day starting from the highest demand to the lowest demand.

The models are created by scaling the peak day model to each of the demand condition listed above

Our models are schematic representations of the physical networks which include:

- network infrastructure parameters including; length, diameter, material, roughness, wall-thickness and altitude
- balancing parameters including supply and demand nodes and behaviours.

Model validation

We use 3 base models, one for each LDZ. A total revalidation of each model is carried out every 3 years to ensure the models continue to accurately reflect real world network operation.

A partial or full validation may also take place on an ad-hoc basis should any material changes occur and/or when discrepancies are highlighted.

Our LTS models are validated in line with agreed industry standards as detailed below in the section Network planning policies and procedures.

Reinforcement assessment and commercial solutions

Our models allow us to understand how changes in the network, be it customer growth or reductions, or changes in asset may impact of our ability to supply our downstream networks and direct connect customers in line with our 1 in 20 obligations throughout the planning horizon.

Where the analysis shows a need for intervention, we will use our planning models to scope the options to arrive at an appropriate least cost industry solution.

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In doing so we will consider the following in order of preference:

- Network reconfiguration
  - Rebalancing of the downstream distribution system
  - Rebalancing of supply and/or pressure via the offtakes
  - Engagement with connected customers to ensure we have the most up to date assessment of their demand requirements
  - Changes to how we are able to use NTS Capacity (Flat, Flex, Pressure)
- Commercial services such as interruption and seasonal contracts
  - Annual and ad hoc interruption tender process to differ or negate the need for reinforcement
  - Use of seasonal contracts (Mod 458) to differ or negate the need for reinforcement
- Network reinforcement
  - Pipeline additions to accommodate change in demand
  - PRS modifications/additions to accommodate change in demand
  - NTS offtake modifications/additions to accommodate change in demand

Any general reinforcement > £500,000 expected to be constructed during the planning period is published in our Long Term Development Statement.

6 Network planning policies and procedures

- SGN_PM_NP_2 Validation of High Pressure Dist' Network Analysis Models
- T_PM_NP_3 Network analysis for assessment of new loads
- SGN_PM_NP_4 Planning Policy for Above 7bar Network Analysis
- SGN_PL_NP_16 Policy for below 7 bar network analysis
- SGN_PM_NP_18 Management Procedure for Network Planning
- SGN_SP_NP_22 LTS Network analysis model standardisation
- SGN_PM_NP_25 Assessment of the Impact of Atypical Demand on The SGN Network
- SGN_PM_NP_28 Storage Planning For Network Code LDZ
- IGEM/GL/2 Edition 3: Planning of gas transmission and storage systems operating at pressures exceeding 16 bar

7 Network considerations

7.1 Scotland

Our Scotland LDZ covers the bulk of the gas network on mainland Scotland. [redacted] The result of which is more offtakes than the other two LDZs combined.

[redacted] This is a result of how the networks have historically grown and developed and in part also results in a number of different operating pressure regimes.

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7.2 South

The South LDZ covers an area on the south coast of England up to the Midlands. This area covers all points between Portsmouth, Southampton, Bournemouth, Isle of Wight up to Banbury and Milton Keynes including Reading and Oxford.

[redacted] The use of discrete pressure tiers within the network, managed via in line regulators, aids us with seasonal operation of the system.

7.3 South East

The South East LDZ covers the South East of England including south of the Thames in London, Kent, Sussex and parts of Surrey. [redacted] The system is heavily integrated which allows for a degree of flexibility at differing demands conditions. However, at times of high demand, the level of flexibility is curtailed by an inability to obtain effective additional capacity from National Gas Transmission.

[redacted]

8 Production of offtake-level capacity and pressure requirements

Principles

Under 2.5.5 section J of the UNC TPD NGT can make a request for a permanent reduction in assured inlet pressure at GDN offtakes in a gas year for Y1 to Y6. The GDN then has until 30th June to respond to any such requests.

Under provision 2.5.6 GDN's may apply for a permanent increase in assured pressure at an LDZ offtake from the 1st July to 31st July for Y1 to Y6. NGT then have until 30st September to respond to such GDN.

Our offtakes require sufficient assured pressures to energise our systems to their maximum operating pressure. Insufficient assured inlet pressure may result in the reduction of:

- offtake capacity
- LDZ linepack
- system flexibility to move capacity between LDZ offtakes.

The consequence being the potential for increased operational costs and our ability to maintain 1 in 20 capacity commitments.

Scenarios considered as part of the booking process

We will assess the requirement for changes in assured pressure and flat/flex bookings over the whole planning horizon by considering the following criteria:

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- Requirements signalled through the provision of Section H to NGT in their Exit Release methodology statement should provide protection against NTS substitution.

  Section H demand conditions which include:
    - 1 in 20 Peak Day
    - Day 13 Severe
    - Day 46 Average
    - Day 150 Average
    - Day 300 Average
  - Ability to transfer bookings between an LDZs offtakes
  - Existing enduring exit capacity booking structure
  - Ability to modify NTS Flex bookings
  - Overall impact on a networks maximum operating pressure
  - Ability to maintain network low points above minimum requirements
  - Optimising LDZ Linepack
  - Lack of flexibility for alternative booking strategies as a result of restrictions from existing user commitments

  Note:

- We are unable to take consideration to biomethane supplies as we can't be confident of their production during a peak day period.
- We use information from our network modelling processes as well as actual flow data and information from stakeholders/wider industry to help manage uncertainty and when determining our final booking strategy.
- In some instances, it is possible to consider the reduction of offtake assured pressures and increase the use of NTS flex to cover the loss of LDZ linepack. However, this option would increase network risk for the following reasons
  - NGT have in day processes which allow them to control, limit or withdraw the use of NTS Flex (SFRN). The use of which could leave us with insufficient storage to support our customers' requirements.
  - If we were required to reduce our assured pressures to below our system MOP NGT are under no obligation to increase them if the network pressures became critical at a later date. Another product which could mitigate the risk would be NTS Flex however, we would not be able to rely on this as an alternative option as NGT are under no obligation to invest in or make flex available. On this basis we would need to be certain we do not require our assured pressure before it is released.
- In other instances there is no ability to consider trade-off between reduction in assured pressures and increase in flex as the pressure is required for transmission purposes so as to ensure sufficient pressure at the extremity of the network.

Our baseline counterfactual is the position where we meet the 1 in 20 peak day demand using only the minimum level of NTS products required to operate the LDZs safely. This means at both aggregate LDZ and individual offtake level:

- Flat Capacity set equal to the 1 in 20 requirement,
- Assured Pressure set only at the level needed to fill each LDZ to its maximum operating pressure, and
- Flex booked only to cover the LDZ storage requirement.

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- This baseline represents the "minimum safe booking pattern" before any optimisation or redistribution of capacity required as a result of commercial restriction. All other booking options are assessed against this simple, minimum intervention starting point.

Managing Risk and Uncertainties

Risks and uncertainties are managed through a structured process combining data analysis, network modelling and stakeholder engagement. Sources of uncertainty include demand forecasts, data quality, network capability, and the future availability of operational products:

- Information accuracy is managed through data validation, corrected consumption data, large load intelligence, connections information and stakeholder input to improve forecast reliability.
- Loss of baseline NTS capacity resulting from substitution or other mechanisms is monitored through ongoing assessment of network capability and scenario testing. Storage and pressure risks are evaluated using CONSUS and LDZ-specific modelling to ensure sufficient linepack and extremity pressures are maintained.
- Future availability of NTS Flex and AOP products is considered within operational and commercial decision-making. Potential restrictions or changes to these products are assessed when determining whether to release pressure or rely on alternative arrangements, with scenario testing used to understand impacts on user commitments, pressure constraints, linepack requirements and costs before bookings are finalised.

Cost implications of capacity booking patterns

Following the implementation of UNC Code Modification 0678 the cost implications of different booking patterns have reduced with consistent NTS Flat Capacity prices being applied at all NTS Offtakes.

We will endeavour to book NTS Flat Capacity to meet our 1-in-20 demand forecast, within the current capacity regime, excluding any future loads which are visible through customer engagement unless a financial commitment has been made.

Comparison to FES Scenarios generated by NESO

Our forecast referenced within our booking processes is a forecast of gas demand for the next 10 year based on current policies. It's used for efficient and effective planning to ensure gas is delivered to end users safely and at least cost. It's also our best estimate of gas demand in the next 10 years based on:

- Government policies which are in place now
- The behaviours which we see currently and how those behaviours may change over the next 10 years based upon recent trends we've seen
- Our forecasts don't have an end point in mind or aim to predict what gas demand should be if certain conditions were to be true, such as the various pathways to net zero.

FES is a set of scenarios, not forecasts. These aim to explore:

- How the energy landscape would look if a set of conditions exist
- Which policies and incentives need to be created to achieve each scenario's aims
- Which technologies need to come to the fore
- Which policies may be required to achieve specific conditions, such as net zero

Other than the use of a small number of data sets within FES we do not utilise the outputs of the FES analysis within our planning processes. More detail on our forecasting processes can be found here.

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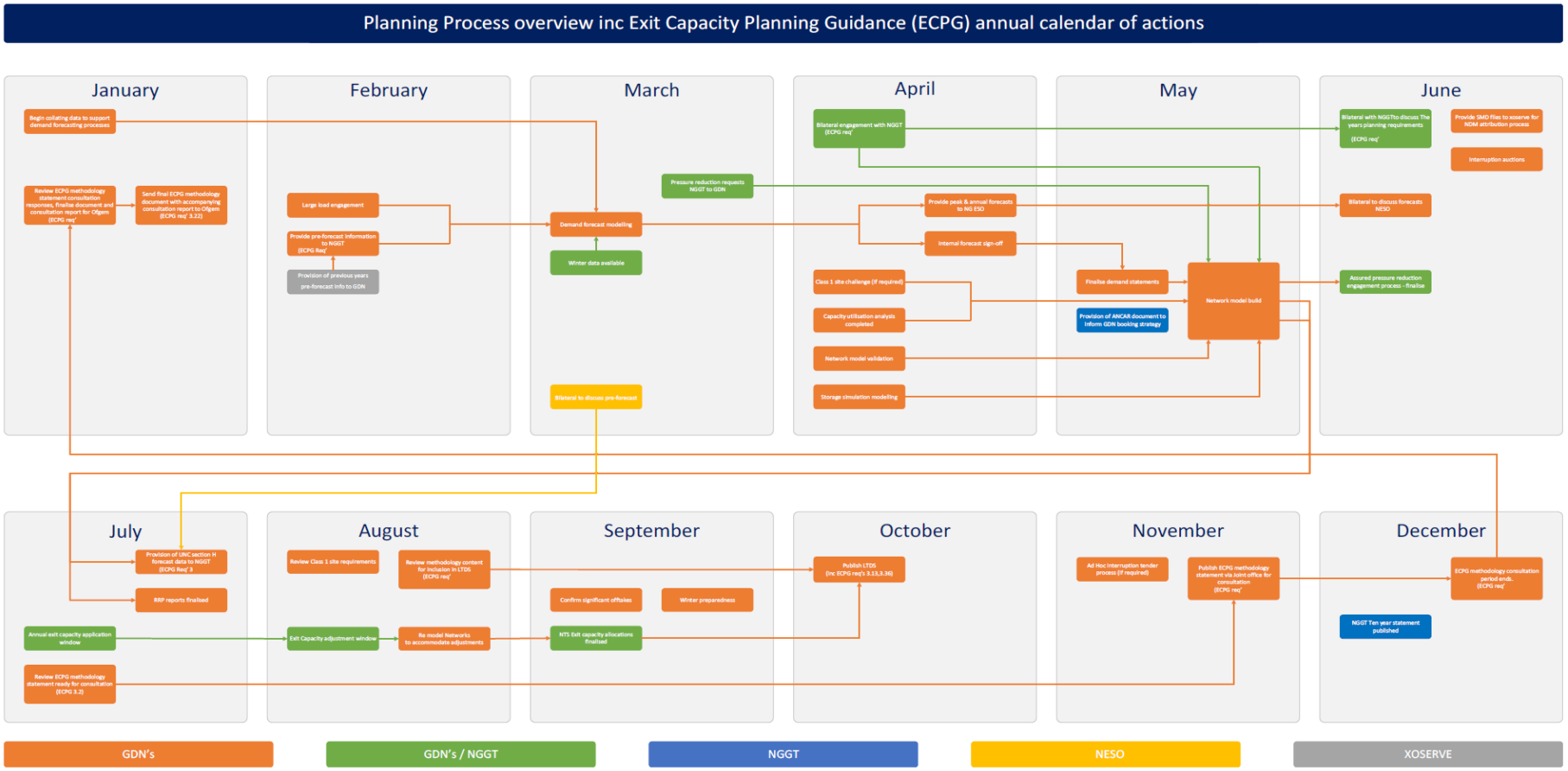
Appendix A. **Planning Process Overview**



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