

**Gas System  
Operator**

**Review of the charging methodology to  
avoid the inefficient bypass of the NTS**

**NTS Bypass Avoidance Charge,  
National Grid**

**NTSCMF 0670R Workgroup  
5<sup>th</sup> February 2019**

**nationalgrid**



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Basis of Idea

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# Basis of Idea

The following elements have been considered in creating the idea for the NTS Bypass Avoidance Charge:

- Adjustment of **capacity charges** based on **RPM** options raised
- **Not available to storage sites**
- **Cost reflectivity** through **application to prevailing RPM and link to pipeline cost** calculations, factor applied to make distance a non-linear formula element to represent varying costs
- **Self limiting** methodology or justified **distance cap**
- **User commitment** through:
  - Application process
  - Firm capacity product link
  - Non-use charges

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Assumptions

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# Current Assumptions

- **Yearly application process** can be combined with a standard daily product with multiplier less than one
- Additional element can be applied into the **anticipated bookings** process
- The level of charge derived provides enough **incentive to avoid inefficient bypass**
- **Genuine risk** demonstrated through application process/methodology and concerns mitigated through user commitment



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03

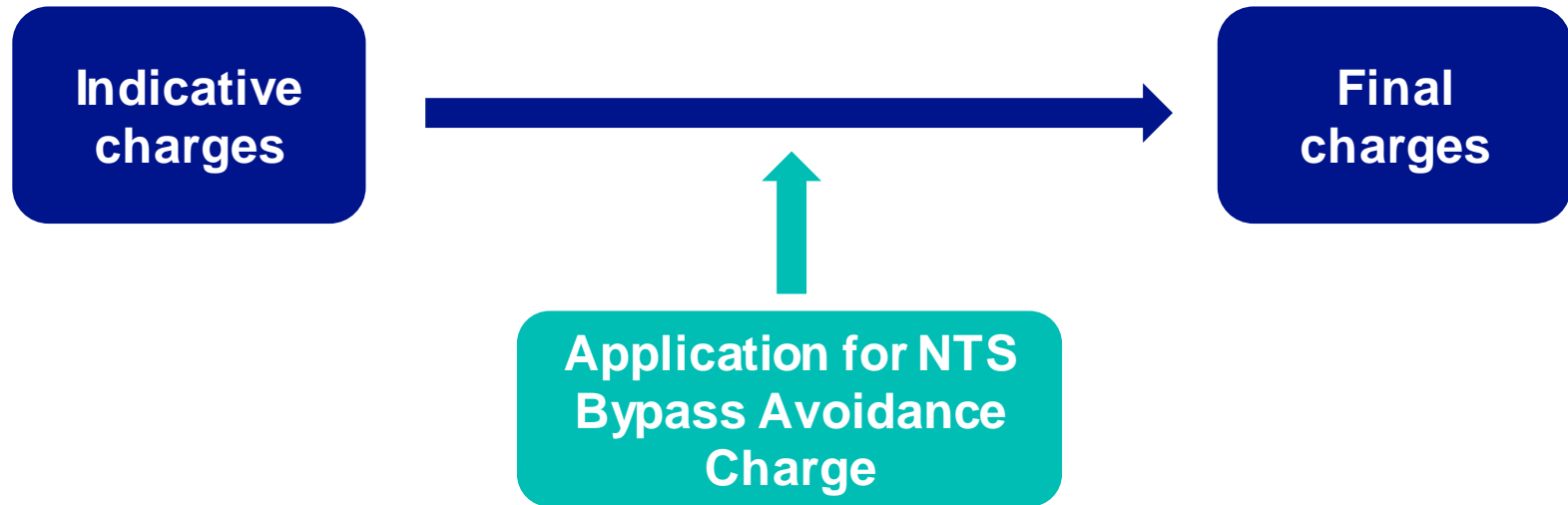
Methodology

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# Methodology

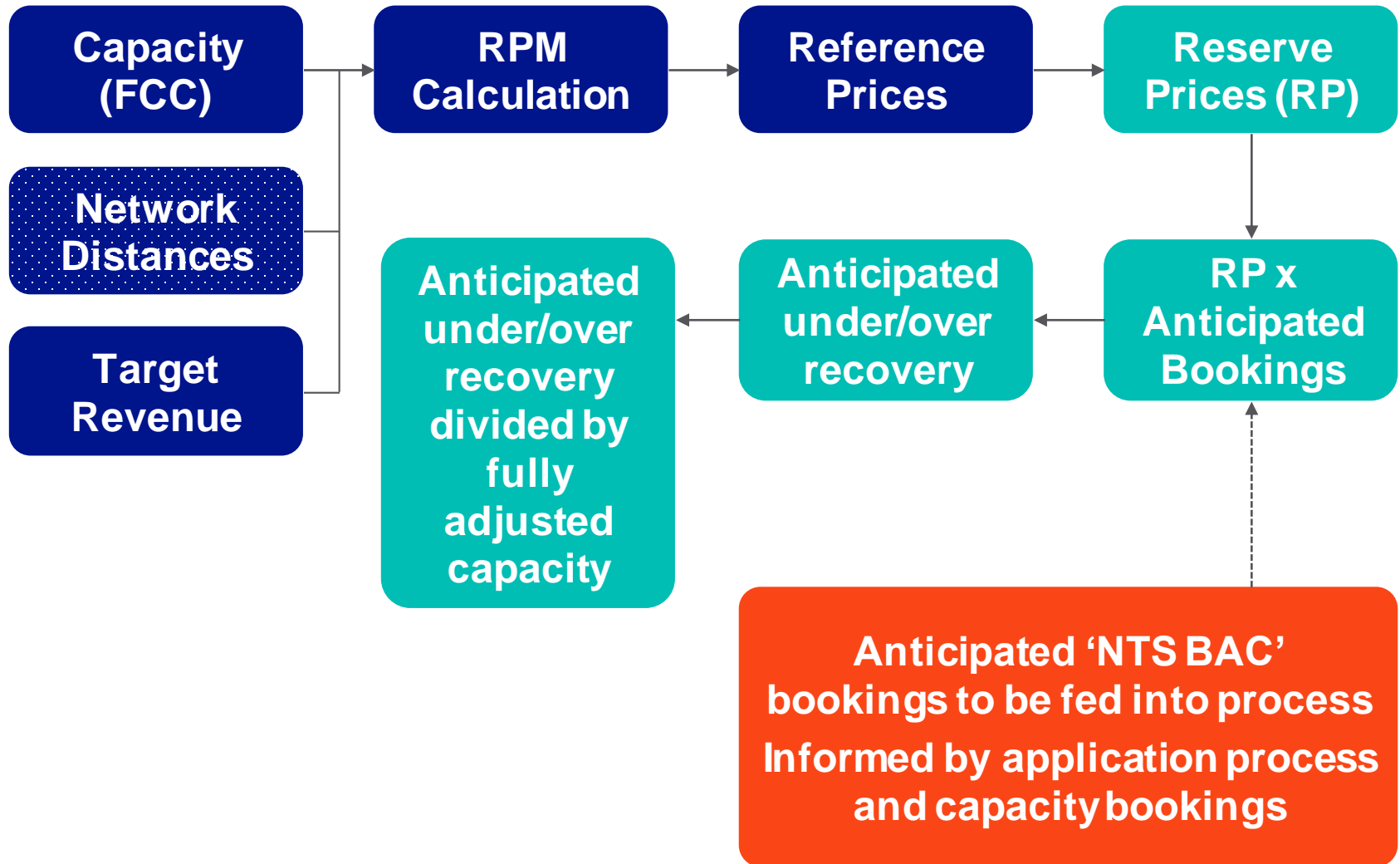
## How could the Application Process work?



- Application indicates users commitment to quantity of capacity between specified entry and exit points
- Suggested as yearly application process, to build anticipated charges into RPM methodology
- Commitment to product for the year – e.g. any non-use charges would apply throughout



# Methodology



# Methodology

**Charge is intended to provide reduced entry and exit capacity charges at applicable points.**

## **Need for defining an Applicable Quantity (Q) per gas day**

- $Q = \text{MIN} \{s\text{CAP}_{\text{en}}, s\text{CAP}_{\text{ex}}, \text{FLOW}_{\text{en}}, \text{FLOW}_{\text{ex}} \}$  where
- $s\text{CAP}_{\text{en}}$  = User's shorthaul entry capacity entitlement on the day at the applicable ASEP
- $s\text{CAP}_{\text{ex}}$  = User's shorthaul exit capacity entitlement on the day at the applicable exit point
- $\text{FLOW}_{\text{en}}$  = User's gas flow entry allocation on the day at the applicable ASEP
- $\text{FLOW}_{\text{ex}}$  = User's gas flow exit allocation on the day at the applicable exit point

**Transmission Services charges or Non-Transmission Services charges will apply, as appropriate, to those capacities or gas flows not covered by the Applicable Quantity (Q)**

# Methodology

## How to defining project/pipeline costs?

### A number of elements from the methodology set out by work for GCD11 to update current calculations

- Matrix of pipeline diameters (from 50mm to 1220mm), distance and flow rate (increased to 60 mcm/d)
- Use Option 2 for the cost portfolio
  - Updating current portfolio using publicly available indices (RPI and Steel)
  - Including pipeline size and unit costs from RIIO-GT1 Price Control
- Distance related and fixed cost elements
- No assumption on load factor – mitigate ofgem concerns
- Annual capital cost based on an annuity period of 10 years

#### Potential

- Complexity factor applied as distance increases – mitigate Ofgem concern of use of straight-line routes

# Methodology

## Option 1

### Reserve Charges for the Applicable Quantity:

Alternative Entry Capacity Charge =  $(PUC \times D) + N_{en}$

Alternative Exit Capacity Charge =  $(PUC \times D) + N_{ex}$

- PUC is the Pipeline Unit Cost determined matrix to meet the capacity requirements between the relevant entry and exit points
  - PUC = cost per km of pipeline diameter to meet MNEPOR of exit point
- D is the distance of the pipeline
- $N_{en} / N_{ex} = R_{Pen} \times <1 / R_{Pex} \times <1$ 
  - Used to determine value of receiving transmission service – **hard to define**
  - $R_{Pen}$  is the prevailing capacity reserve price for the entry point
  - $R_{Pex}$  is the prevailing capacity reserve price for the exit point

# Methodology

## Option 2

### Reserve Charges for the Applicable Quantity:

Alternative Entry Capacity Charge =  $(C_{Ren} \times M_{Den}) \times R_{Pen}$

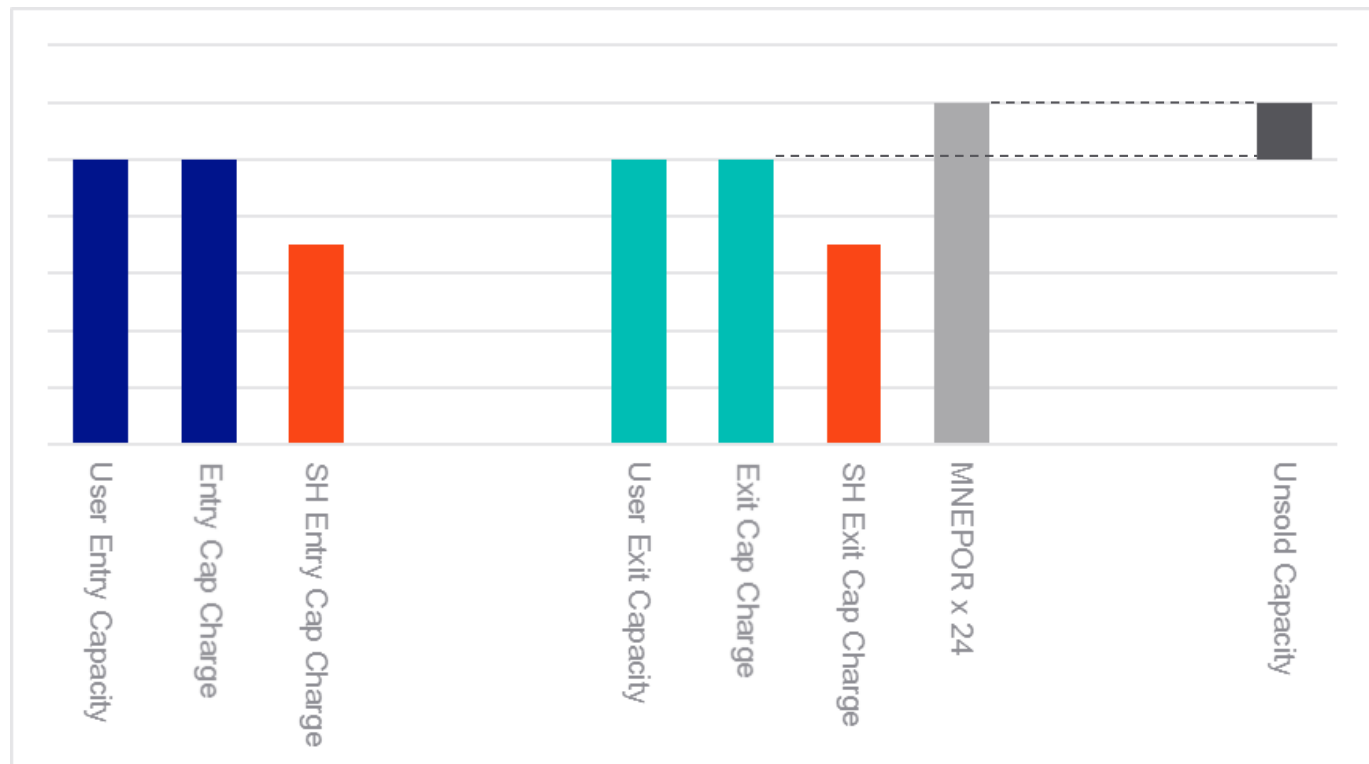
Alternative Exit Capacity Charge =  $(C_{Rex} \times M_{Dex}) \times R_{Pex}$

- $C_{Ren}/C_{Rex}$  is a capacity ratio, determined through the calculation of the PUC charge and the prevailing RPM
- $M_{Den}$  is the maximum determined discount for an entry point – hard to define
- $M_{Dex}$  is the maximum determined discount for an exit point – hard to define
- $R_{Pen}$  is the prevailing capacity reserve price for the entry point
- $R_{Pex}$  is the prevailing capacity reserve price for the exit point

# Methodology

If an independent pipeline was in operation, associated costs would be incurred regardless of capacity or flow on the day. A Nominal Charge is applied to unsold capacity of exit point:

- $NCQ = (\text{Maximum NTS Exit Point Offtake Rate (MNEPOR)} \times 24) - (\text{all Users CAPex})$



Note: Graphical example, variance of SH charges not based on any calculation



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Assessment

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# Proposed Assessment Criteria

- Methodology and formulas need to be considered against any **RPM variants** raised as part of 0678
- **Assumptions need to be made** on change between obligated capacity baseline and FCC, influenced by behavioural changes anticipated from lack of zero priced capacity
- Analysis to be completed against a **clear methodology** that covers a **range of scenarios**
- **Comparison** of the potential impact on current users
- Check against relevant legislation for **compliance**

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