Gas
Transmission

Gas Quality Blending Services Update

Transmission Workgroup
3rd June 2021

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Background

Since 2019, we have been exploring the feasibility of offering commercial blending services at NTS entry points at St Fergus and Bacton

We consulted industry in Q4 2020

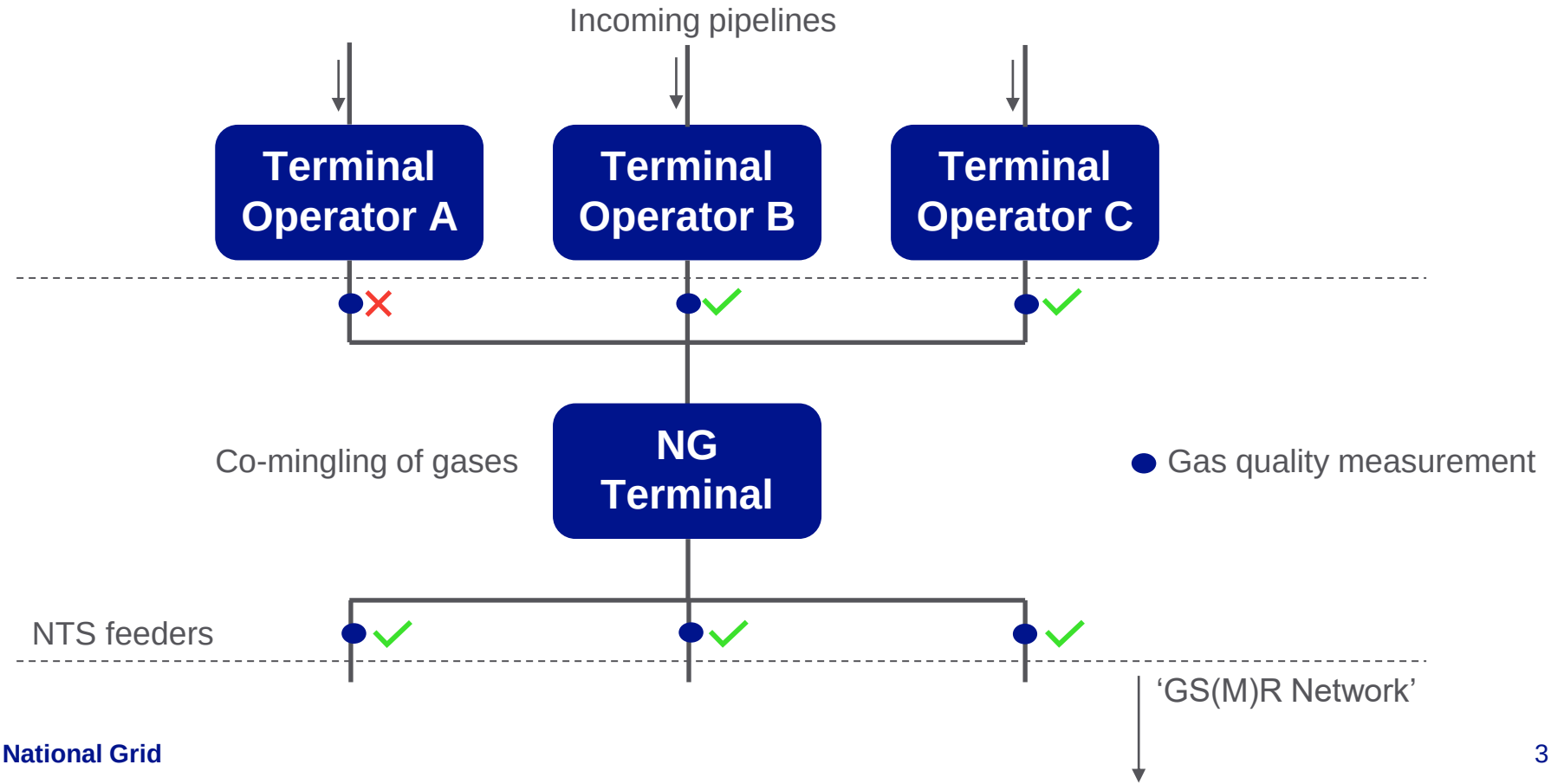
- **Responses were broadly supportive**
- **Commercial / competition related issues still to work through**

Two key pieces of work have since been completed

- **DNV-GL NIA study**
- **Internal assessment of operational viability**

We have concluded from this work that NGG commercial blending services would not be viable but we remain open to working with NTS entry parties to facilitate short duration solutions where possible

Service Concept



DNV GL NIA Study

Phase 1: Construct and validate hydraulic computer models of Bacton and St Fergus terminals

Phase 2a: Define flow/quality input scenarios and model results at outlet points

Phase 2b: Monte-Carlo simulations to predict the terminals' ability to accept and discharge gas flows under the 2a scenarios

Enduring Commercial Blending Services: DNV GL NIA Study: Key Conclusions

Bacton	St Fergus
In the scenarios modelled, most exit gas qualities all blended to GS(M)R compliance High terminal availability predicted in all scenarios Some blending occurs but the gas quality at outlet points is not homogenous Multiple potential flow configurations and variability of interconnector flows means it is not clear how exit gas qualities at outlet points can be predicted	Blending capability demonstrated All modelled incomer scenarios delivered a GS(M)R compliant output blend High availability except in transient scenarios Exit gas qualities are largely homogenous as gas from all 3 incomers was modelled to pass through the mixing area Short transit time through the terminal would limit NGG ability to detect any off-spec blend

The study demonstrated that the terminals have blending capability but not that a blending service is technically feasible

Operational Viability Assessment

In Q1 2021, we completed our own internal risk assessment about the practical application and operational viability of commercial blending services

Current risk level at the terminals

- **All parties obliged to deliver compliant gas**
- **If an entry point goes off-spec, fortuitous comingling may occur**
- **Only a concurrent insufficiency of gas to mix i.e. concurrent adjacent supply reductions or trips cause the risk to manifest**

In a blending arrangement, an entry point would be operating with a 'permanent' gas quality excursion(s), the likelihood of off-spec gas getting onto the network would therefore be increased

Operational Viability Assessment: Other findings

We could not always predict outlet quality from input quality and flow-rates

Increased complexity in gas quality management

We could not offer a service without the involvement of other terminal operators

- **The primary method of control would need to be upstream of the NGG terminal**
- **Generic service terms would not be possible**

Potential for adverse impact on operational flexibility

Additional gas quality measurement within the NGG terminal would not provide the required level of control

Short Duration Arrangements

However, we may be able to design appropriate controls for specific cases, routing flows in a particular configuration for a limited time period

- **Subject to HSE/Ofgem oversight and industry engagement**

Multiple concurrent requests that we could not manage can be avoided

Transparency can be maintained because a UNC Modification would still be required