

NTSCMF

UNC678 clarifications



11/02/2020

Approach for responding to questions



Approach for responding to questions

Thank you for sending through questions in advance

We have separated questions into three types:

- 1. Key questions on methodological approach** – we have grouped these in order to respond to as many as possible as part of discussions today
 - a) We discuss questions by theme rather than responding to each question individually.
- 2. Further clarifications on methodological approach, results/conclusions** – we will provide a written response to questions raised following the meeting.
- 3. Requests for additional analysis/data in relation to particular contracts, entry/exit types, etc** – The purpose of the modelling is to consider the impacts on consumers of all types and potential effects on investment/closure decisions. It is not intended to consider impacts on individual consumers. Ofgem considers the analysis presented in the report sufficient to inform its minded-to decision.

We will provide an opportunity for Q&A at the end of the session



Responses by theme



Questions on methodological approach

Clarification of modelling approach, assumptions and endogeneity

- There were several questions relating to the approach regarding assumptions/estimations of certain parameters within the model.
- The model is deterministic. Many of the parameters which are the subject of queries are calculated endogenously. They are calculated based on the parameters included in the relevant FES scenario and the supply and demand elasticities incorporated within the modelling.
- Endogenous parameters include:
 - Flows/bookings
 - Tariffs
 - Gas and electricity market prices
 - Power generation from CCGTs
 - Take-up of the shorthaul product (based on whether it is cheaper than the standard tariff equivalent)
 - Gas storage injection and withdrawal decisions
 - Gas supply volumes from different sources of gas



Questions on methodological approach

Clarification of modelling approach, assumptions and endogeneity

- For some parameters, we made an assumption/input exogenous to the model. E.g.:
 - The proportions (but not total volumes) of different capacity products for each type of entry/exit point were established at the same level observed in the most recent gas year for which data was available (2017/18)
 - Where there are flows of gas at an entry/exit point, we assume that existing contracts in place at that point are used first. Where there are no flows at that point, existing contracts related to that point are not used.
 - We assume that the entry tariff is incorporated into the NBP price where it affects the input costs of the marginal unit of gas.



Questions on methodological approach

Status quo (SQ) modelling

- Several questions related to our approach for modelling the SQ
- As for the modification options, we developed a modelled SQ for consistent comparison. Wherever possible we applied the same assumptions and methodology for the SQ
- We applied the same assumption that bookings = flows
- The OCC product is included in the SQ
- In order to model the SQ we needed to determine LRMCs for the spot years in question. The transport model only included LRMC 1-in-20 peak supply and demand assumptions for 2019/20.
- Therefore, we needed to develop scenarios of 1-in-20 peak demand and supply. Consistent with our modelling of the modification options we utilised the FES scenarios to develop these 1-in-20 peak demand and supply assumptions.
- We followed the methodology contained in the UNC TPD Section Y to produce LRMCs.
- This is the ‘scenario’ developed by CEPA referred to in *footnote 28*.



Questions on methodological approach

Presentation of tariffs in the report

- Several questions related to the presentation of tariffs in Section 3.2 of the report.
- For presentational purposes (i.e. to compare tariffs consistently), we presented standard annual capacity entry and exit tariffs unless otherwise stated.
- Note the following:
 - The tariffs are commoditised – i.e. they represent the equivalent cost of flowing one unit of gas using the annual product
 - The tariffs are weighted by capacity bookings
 - The tariffs do not include existing contracts
 - The tariffs do not include the NOC tariff
 - As tariffs are commoditised, overbooking at GDN exit points leads to a higher commoditised tariff across all options



Questions on methodological approach

Mechanism for tariff impacts

- Given the above, the weighted annual capacity tariff can change across options and from one type of entry/exit point to the next based on the following:
 - Revenue recovery contributions from other types of capacity product (given low revenue contributions from short term products under the SQ, we therefore observe a reduction in the annual capacity tariff under modification options).
 - Revenue recovery requirements due to:
 - Take-up of any shorthaul product
 - Level of storage discount
 - Revenue recovery exclusions
 - Bookings/flows for a type of entry/exit point based on the modelled scenario and year.



Questions on methodological approach

Mechanism for gas and electricity price impacts

- The differences in tariffs for entry points can increase/decrease the wholesale gas price where, on average, the marginal unit of gas faces a higher/lower tariff
- As CCGTs are affected, this can flow into changes to the electricity market price where CCGTs are the marginal unit of electricity. This results from a combination of two factors:
 - The impact of the gas tariff (including any shorthaul product) on CCGTs
 - The impact of the wholesale gas price
- Therefore, even where CCGTs in the aggregate face higher gas tariffs, the combination of the tariff and wholesale gas price impact on the marginal CCGT will lead to the observed impact on the electricity price.
- Electricity market modelling was conducted to determine the impacts on the electricity market price and consumers in the aggregate rather than to consider the impacts on individual power stations.
- We find small but statistically significant impacts on the gas and electricity price based on our modelling (and set of assumptions)



Questions on methodological approach

Modelling of storage

- Storage injection and withdrawal is endogenous within the model and was modelled over a two year time horizon (i.e. with the ability to inject and withdraw gas either side of the spot year in question).
- As such, flows at storage facilities can be optimised over this two-year horizon. This means that injection and withdrawal do not need to match within the spot year in question.
- It is also important to note that the model is deterministic with the NBP price determined endogenously – i.e. it does not reflect stochastic events (shocks) and price spikes. Thus price volatility is not fully represented.
- Non-seasonal injection and withdrawal patterns are possible in the model but are likely to be under-estimated as a result of this modelling approach.
- Particularly for short-range storage facilities, we can therefore observe low levels of injection (sometimes zero) over the course of the spot year
- Where this is the case, it results in zero for the FCC and for revenue from exit tariffs from those facilities.



Questions on methodological approach

Modelling of storage

- While a deterministic model is better suited to several of the requirements within this scope of analysis, we acknowledge that limitations exist with respect to modelling the injection and withdrawal behaviour of storage facilities, particularly short-range faster cycling storage.
- For this reason, as noted in the report, we focus only on the tariff impacts on gas storage facilities when considering the potential impacts on investment and closure decisions. We do not include effects relating to the wholesale gas price within this analysis.



Questions on methodological approach

Are SO Commodity Charges included in analysis?

- No. SO Commodity Charges were not included in analysis. We focussed analysis on tariffs used to recover Transmission Services Revenue (as defined in the TAR NC). None of the modifications proposed changes to the SO Commodity Charge (other than in name).
- The inclusion of the SO Commodity Charge would have some impact on:
 1. The take-up of the shorthaul products within the status quo and within those options which include a NOC.
 - a) *Increase likelihood of take-up and associated revenue recovery implications*
 2. The likelihood of bypass of the system given that the SO Commodity Charge could also be avoided through system bypass.
 - a) *Increase likelihood of bypass (all else equal)*

We note that in both cases (and particularly for bypass modelling), a number of assumptions/simplifications were made.

We continue to consider the likelihood of bypass to be an overestimate given a number of costs of bypass not incorporated.



Questions on methodological approach

Modelling of the NOC products

- Some questions related to the modelling of the NOC product.
- We assumed sharing of the NOC discount on a consistent basis with the assumption made in the relevant modification proposal.
- In the market model we assume the take-up decision is on the basis of a single route which implies that the off-taker gets the full discount.
- The tariffs used for the bypass analysis follow the respective NOC methodologies.
- However, for estimating the costs of building a bypass pipeline, we used the structure of the formulae contained in the relevant methodology but applied assumptions consistent with a commercial investment rather than regulated infrastructure (see Table 2.7 in CEPA report).
- We assume a 25 year commercial lifetime of the pipeline but apply an assumption that a payback period of 5 years would be required for a commercial entity to invest in a bypass pipeline.



Questions





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