

NTSCMF / Sub Group – Forecasting Contracted Capacity (FCC)

Some key terms in relation to Forecasting Contracted Capacity:

Term	Detail
Forecast Contracted Capacity	This is a required input of the Capacity Weighted Distance Reference Price Model that will be used as the counterfactual (if not the proposed) Reference Price Methodology under the Tariff Network Code. FCC is not defined further in the TAR NC.

Background

Tariff Network Code (TAR NC) introduces the concept of a Forecast Contracted Capacity (FCC) which is used in the calculation of Reference Prices under the Capacity Weighted Distance Model (as defined in TAR NC for use as the counterfactual RPM if not the proposed RPM). The values used in the FCC will influence the reference prices generated by the RPM.

There is no formal definition under the TAR NC for FCC. A single value is required for each entry / exit point (or cluster) per year.

It is worth noting that the expected bookings under the new charging regime will be impacted by Shipper behaviour (which will be considered under a different 1-pager). The FCC will not exactly match outturn bookings; the degree of mismatch will determine the magnitude of under or over recovery. Management of the under or over recovery is considered in a separate 1-pager

Discussion:

What is the purpose/intention of the Forecast Contracted Capacity?

- The role of Forecasted Contracted Capacity is not explained in TAR NC, rather there are a number of features / principles that the methodology should comply with as detailed in Article 7. There are a range of views on how the FCC values chosen may help to meet the principles in Article 7. To help minimise under / over recovery of Transmission Services Revenue (i.e. to have a FCC that is as close as possible to needs/requirements of NTS Users)
- It should be recognised that any forecast will not exactly match actuals, with any forecast it may take time to increase its accuracy. From development of the TAR NC at ENTSO-G working groups it was understood that the intention was that at time of prices being generated it should be all capacity that has been sold to date plus everything is expected to be sold in remaining auctions/application windows, but this is not reflected in the TAR NC text.
- One interpretation could be that it is the expected bookings at each location which will then inform an appropriate price per unit for capacity at the respective location.
- Another interpretation is to use the Obligated baseline values to derive charges, as the values are likely to be constant and free from manipulation, this could facilitate stable and cost reflective charges (subject to the revenue reconciliation methods applied).
- In relation to revenue recovery and the link with the FCC and its use in the capacity charges, any anticipated or actual under recovery can then be recovered using other mechanisms allowed under TAR NC. TAR NC does not mandate that all revenue must be recovered by the first pass of the RPM.
- To produce cost reflective charges in line with Licence objectives. In addition some may prefer stability (Article 17.1 (c)) over predictability (article 7(a)) for charges or vice versa, however this may be different for different Users
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- Transparency of the methodology and numbers used to produce a forecast is also considered an important aspect (Article 30). It is anticipated that any methodology would be written in TPD Section Y of the UNC and would be subject to review as a result of keeping methodology under review (and a requirement under TAR NC on a regular basis). It would therefore be changeable using the UNC modification process if a change should be considered consistent with the relevant objectives. Due to the nature of a competitive, open market, there will naturally be a difference in the outcome of actual bookings versus forecast.
- DNs have a Licence obligation to book a certain amount of capacity whereas other network users do not.
- It would be helpful to review the levels of capacity bookings across User Groups to see how much capacity may be considered “more certain”, especially if any is linked to Licence requirements (e.g. for DNs).
- In a non-expanding network, cost reflectivity may be more relevant to reflect use of the network rather than forward looking investment focus. The cost of the network is fixed (i.e. allowed revenues and historical investments have already been set).

What would be an appropriate way of calculating the Forecast Contracted Capacity/What would be an appropriate set of data to use? – (Please see the list of potential forecasts in the Appendix.)

- Of the options, Historical bookings can give a trend in bookings, however each year can be different in capacity bookings with many unknown variables influencing capacity bookings for different Users or User Groups and as such historical values may not be a useful indicator of future forecast bookings.
- For any FCC where greater detail could be used (e.g. point specific) it will be necessary to protect commercial sensitivities in the overall process. It may be possible to use with certain data inputs hidden or perhaps used to inform a forecast - *NGG to review data available and update at Sub Group / NTSCMF*
- For any FCC consideration will need to be given as to how dynamic it might be in its responsiveness to changes required to monitor impacts. An example would be when any inputs that would impact an FCC change, how soon it gets reflected in the FCC, and therefore the charges. Eg demand forecast change, site being mothballed

What should be done where the chosen forecast for a location is zero or alternatively is less than the level of existing contracts resulting in zero or potential negative price situations?

- Initial suggestions for consideration, with thoughts on use, are:
 - Use of previous years' flows where the forecast was 0 – this may not provide a fair forecast in relation to what capacity bookings may be.
 - Default to the same value as the nearest NTS Entry/Exit Point – Most preferable as proximity to nearest entry or exit point could be considered a fair reflection, especially as under CWD there is some geographic influence
 - Use a default capacity value – there is no established logic to determine one.
 - Use a weighted average price (across the relevant area or across all points). Could be a variant of the nearest point approach. It is proposed to initially focus on nearest point approach and to keep this under review.

How to assess and select FCC values :

- It is necessary to consider, in development of the FCC, how to avoid resulting values not being open to interpretation and challenge.
- In selecting an FCC it would be helpful to develop objectivity assessments to help narrow down the options. Selection criteria may not identify a perfect option but they should help to reduce the number of options to only a few.

- Proposed criteria are as follows:
 - Are the values published/publically available?
 - How far out into the future are the values available?
 - Stability of values (yr to yr)
 - Objectivity of values
- These objectivity criteria will be incorporated into the Appendix Tables for the options.

Draft for Comment

Conclusion:

- In relation to the FCC there are a number of issues to work through and also additional analysis to conduct. Some of the potential framework is taking shape, with focus on a form of objectivity assessment of the options.
- FCC is a necessary input to the RPM and as such reference to it can be made in the initial UNC Modification, and its methodology of calculation and impact of options can be further developed as part of the UNC change process.
- Ultimately the FCC needs to have a value per point per year. ~~so it can be split across capacity types. Charges may not be reflective for all as this could differ across points or User Groups and Users.~~
- Conclusions will become clearer via the development of the end-to-end model in addition to subgroup/NTSCMF discussions and throughout the UNC Modification process.
- There could be a step change as a result of FCC and therefore a transition into new values may be useful to change for 2019 and beyond.
- It may be beneficial to consider a combination of options for FCC if there is benefit in delivering against the objectives of using the FCC.

Version Control

V0.1	First draft to be based on discussion at sub-group on 18.01.17
V0.2	Update following discussion at NTSCMF on 01.02.17
V0.3	Update following discussion at Sub Group on 23.02.17
V0.4	Update following discussion at Sub Group on 03.03.17
<u>V0.5</u>	<u>Update following discussion at Sub Group on 11.04.17</u>

Appendix: Potential forecasts:

FCC ref:	Potential Forecast	Description	Publication / Availability of forecast	Is it available for remainder of regulatory period?	Stability (Volatility yr on yr)	Objectivity of method/values	Conclusions
1	Obligated Capacity Levels	Total Incremental and Non-incremental Obligated Capacity Levels as defined in the Licence.	Published in Gas Transporter Licence.	<u>YES</u>	<u>Stable only changes through substitution or incremental release</u>	<u>Objective as the capacity release and substitution methodologies</u>	Likely to be well above outturn bookings for most locations. May produce stable charges. <u>May be more appropriate over (2). Non-zero baseline (post allocation) value would be accommodated.</u>
2	Non-incremental Obligated Capacity Levels	Capacity obligation, not including Incremental Obligated Capacity.	Published in Gas Transporter Licence.	<u>YES</u>	<u>Stable only changes through substitution</u>	<u>Objective as the capacity release and substitution methodologies</u>	<u>Likely to be well above outturn bookings for most locations. May produce stable charges. Would have zero baselines for new Entry/Exit Points.</u>
3	Historical Booking Levels	Previous year's capacity bookings (or an average of multiple previous years). Need to be specific here. Is it highest	Published online in Long Term Summary Reports for Entry and Exit.	<u>No – only known at end of year so would be Y-2</u>	<u>Not known will depend on booking strategies, response to</u>	<u>Good unless bookings managed in some way – perhaps</u>	It is considered by some that previous bookings are not a good indicator of future capacity

		level average level or what (tbc) ?	Daily available on report explorer – <i>not very useful for year overview?</i>		regime, multiplier and market conditions	unlikely. Analysis of known bookings would be beneficial to see if there are any trends.	bookings as there are multiple influences on booking behaviour that could cause variances from previous years.
4	Historical Flow Levels	Previous year's gas flow allocations (or an average of multiple previous years). As above	Daily Allocations report on website – <i>not very useful for year overview</i>	As 3	As 3	As 3 for flows	– It is considered by some that flows are not a good indicator of capacity bookings as values will vary depending on a number of conditions. Could be misleading if flow patterns change (e.g for LNG, IPs, CGGTs).
5	x% Obligated Capacity Levels	This recognises that it may be unrealistic to assume that the obligated levels will be sold at all locations and reduces these levels by a fixed proportion.	Based on values which are published in Gas Transporter Licence.	As 1 but how to determine % Analysis of historical bookings needed	As 1	As 1	Reducing the obligated level by a fixed proportion across each location or location type may not be appropriate as the expectation of either flows or bookings use at each location or location type may be different.
6	Forecast Gas Demand	The average forecast gas demand based on	Published in Summer/Winter	Possibly but difficult to	Analysis of history	Possibly open to influence	Would be difficult to disaggregate total

		seasonal normal weather conditions	Outlook Reports. (at aggregate level, not for each NTS Point)	<u>establish value for each point</u>	<u>required SND values and SND vs actual</u>		daily usage down to individual exit points.
7	1-in-20 Peak day demand forecast	The 1-in-20 peak day demand is the level of daily demand that would be exceeded in 1 out of 20 winters.	Published in Winter Outlook Report. (at aggregate level, not for each NTS Point)	<u>As 6</u>	<u>Should evolve rather than show step change – but was large step in recent history</u>	<u>1 in 20 forecast a mystery outside NG</u>	As per 6
8	Summer minimum Demand Forecast	Daytime minimum demands to support the operation of the system during the summer, calculated using normalised weather and weather correction.	Published in Summer Outlook Report. (at aggregate level, not for each NTS Point)	<u>As 6</u>	<u>Analysis of history required</u>	<u>As 6</u>	As per 6
9	Average (1-in-20 peak day demand Forecast , Summer Minimum Demand Forecast)	The average (arithmetic mean) of the 1-in-20 peak day demand forecast from the winter outlook report and the Summer Minimum Demand Forecast from the Summer Outlook report.[1]	Published in Winter Outlook Report and Summer Outlook Report. (at aggregate level, not for each NTS Point)	<u>As 6</u> <u>May provide some cross subsidy between high and low load factor sites</u>	<u>As 8</u>	<u>As 6</u>	As per 6