

FCC Entry Methodology – Proof of Concept.

Draft for Comment – Revised 12 March 2021

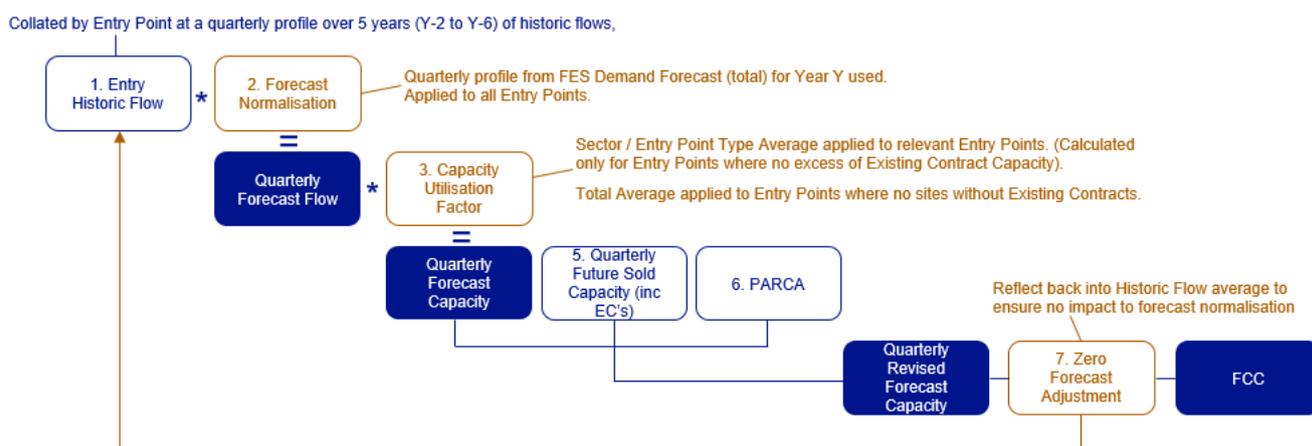
Model Version: FCC Methodology Entry v3 Ex1.xlsx [and FCC Methodology Entry v3 Monthly Ex1]

These models have been developed in line with the proposed methodology as discussed at the FCC Stakeholder Workshops. This document has been drafted to provide additional information on the models and should be read in conjunction with the models (FCC Methodology Entry v3 Ex1.xlsx [FCC Methodology Entry v3 Monthly Ex1]).

The mechanics and the methodology applied is the same for both the Quarterly and Monthly versions of the Entry FCC Models. This document will therefore cover the methodology applied across both version of the Entry model.

Please note: the values used in this model are indicative and are used solely for the purpose of reviewing the proof of concept of this revised methodology. The values within this model should not be used for any other purpose.

If you have any Questions or comments, please email box.gsoconsultations@nationalgrid.com



Tab: 1. Entry Historic Flows:

- This tab is used to collate 5 years' worth of historic annual flow data by quarter by Entry Point.
 - Actual annual flow data for Y-2 to Y-6 collected for each quarter [or each month] for each Entry Point.
 - These five years of flows data by quarter [month] is summed for each Entry Point and divided by 5 to provide an average flow per quarter [month] per Entry Point.
 - The average flow value per quarter [month] per Entry Point is divided by the number of days in each quarter [month] to a kWh/d value per quarter per Entry Point.
- These values (kWh/d per quarter [month]) are then copied across into the 'Entry FCC Summary' tab under Historic Flows.
- Rows 35 - 40 sum these values by Entry Point Type (Storage Site, Interconnector, Beach Terminal, Onshore Field, Biomethane, LNG) to provide a total Entry Point Type / Sector value for each quarter [month].

Exceptions:

- Where a site has not been active for 5 years, the '5 Yr AVERAGE' is calculated for each quarter [month] based on the number of years from first flow.

Tab: 2. Forecast Normalisation:

- This tab is used to reflect the variance between historic flows and forecast of supplies for Year Y.
 - The Entry Point Type / Sector 5 YR Average for each quarter [month] is taken from the 'Entry Historic Flows' tab, and divided by 1,000,000 to convert to GWh (the same units as the Forecast Demand value)
 - Forecast Demand for year Y taken for each quarter [month] from the most recent FES Central Forecast. This is used to set the supply forecast (assumption made that supplies for each quarter [month] will be set to meet demands). These values are copied into the Forecast Flow cells in row 13.
 - The quarterly forecast flow variance from historic flows is calculated at a total supply level across all Entry Points by dividing the quarterly [monthly] forecast in year Y by the respective quarters [months] average historic flow (row 13). This value is applied to all Entry Point Type / Sectors.
 - These quarterly [monthly] forecast normalisation values by Entry Point are copied across and applied to the relevant Entry Points in 'Entry FCC Summary' under Normalisation Factor for each quarter [month].

Exceptions:

- Storage sites Forecast Normalisation defaulted to 1.

Tab: 3. Utilisation Factor:

- This tab is used to reflect the levels of capacity purchased above flows for each Entry Point.
 - For each month from October 2020 (start of the new charging regime) the actual capacity booked per Entry Point, and the actual flow value per month per Entry Point is captured.
 - These values are summed for each month available to produce a Gas Year to Date actual Capacity Booked and actual flow value for each Entry Point.
 - These values are then collated at an Entry Point Type / Sector level (rows 35-40).
 - The Correction Factor for Capacity Utilisation is calculated for Each Entry Point Type / Sector by dividing Actual Capacity / Actual Flow.
 - These Entry Point Type / Sector values are further revised to exclude values from any Entry Points that have a significant amount of Existing Contract Capacity, as this overstates the capacity utilisation value (rows 47-52).
 - This Revised Industry Average Entry Point Type / Sector correction factor is then applied to each relevant Entry Point by Entry Point Type (column X).
 - This Correction Factor (column X) is then copied across for each Entry Point into the 'Entry FCC Summary' under Utilisation Factor.

Exceptions:

- Any Entry Point Type / Sector that does not have any Entry Points without a significant quantity of Existing Contract Capacity, have their utilisation factor set by the revised average correction factor across all Entry Point Types (cell X54).

Tab: 4. Future Sold inc EC:

- This tab is used to capture the known future sold capacity value per Entry Point for Year Y.
 - Future sold capacity at a kWh/d value captured for each Entry Point by each quarter [month], broken down into EC (Existing Contract Capacity) and Other QSEC (non-Existing Contract QSEC capacity)
 - These quarterly [monthly] values are copied across into the 'Entry FCC Summary' tab under Future Sold.

Tab: 5. PARCA:

- This tab is used to capture the Phase 2 PARCA details for Entry Points where the PARCA has progressed to Stage 2 for the relevant year Y.
 - Column C captures the kWh/d value under the relevant PARCA
 - Column D captures the capacity start date under the PARCA
 - Column F calculates the number of days within Gas Year Y that capacity will be allocated.
 - Column G calculates the average daily profile of capacity for the site across the Gas Year, based on the capacity / number of days it will be active (kWh/d).
 - This is then reflected into columns H-K [G-R] dependent upon how many days in each quarter [month] the PARCA would be effective.
 - The values for each quarter [month] are copied across for each Entry Point to the 'Entry FCC Summary' under PARCA.

Tab: Entry FCC Summary:

- This tab captures all the outputs from the previous 5 tabs and calculates the FCC for each Entry Point.
- All values are in kWh/d.
 - Historic Flows:
 - Columns C - F [C - N] captures the 5 Year average of Historic Flows per Entry Point for each quarter [month].
 - Forecast Normalisation:
 - Columns G - N [O - AL] apply the Normalisation Factor calculated for each Entry Point for each quarter [month] and multiplies the Historic Flow value for Entry Point for that quarter [month] by the quarterly [monthly] Normalisation Factor to calculate the Forecast Normalised Flow by Entry Point by quarter [month].
 - Utilisation:
 - Columns O - V [AM - BJ] apply the utilisation factor calculated for each Entry Point Type / Sector to the Forecast Normalised quarterly [monthly] Flows for each Entry Point to calculate the Forecast Capacity per quarter [month] per Entry Point.
 - Future Sold inc EC
 - Columns W - Z [BK - BV] captures the Future Sold capacity value for each quarter [month] for year Y, by Entry Point.
 - PARCA

- Columns AA - AD [BW – CH] captures the PARCA values applicable for each quarter [month] for year Y.
- Applicable Value
 - Column AL calculates the applicable FCC for each Entry Point, based on:
 - The Maximum value for each quarter from:
 - Forecast Capacity per Entry Point per Quarter (Columns P, R, T and V) [month (AN, AP, AR, AT, AV, AX, AZ, BB, BD, BF, BH and BJ)]
 - Future Sold Capacity including EC per Quarter (Columns W-Z) [month (BK – BV)]
 - PARCA per Quarter (Columns AA-AD) [month (BW – CH)]
 - Columns AE – AH [CI – CT] capture the highest value for each quarter [month] for each Entry Point.
 - Column AI [CU] multiplies the kWh/d values from columns AE-AH [CI – CT] by the number of days in each quarter [month] and divides the total by 365 to calculate a daily kWh/d value for each Entry Point across the Gas Year.
 - Zero Forecast Flow
 - Column AJ identifies where any site with an 'Applicable Value' calculated (based on historic flows) is forecasted to no longer be operational for year Y, these Entry Points have their 'Historic Flows' values in the 'Entry Historic Flows' tab overwritten with a 0, to reflect the site will not be operational, and to ensure the forecast normalisation is reflected into only active Entry Points Points.
 - FCC
 - This captures the FCC for year Y for each Entry Point.
 - These are summed up by Entry Point Type / Sector, and by the Total for all Entry Points in rows 237 – 243.