



Model documentation: Provide a new  
Illustrative Forecast Model for DCP  
325 (Request A13-7)

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DCUSA/ElectraLink

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## 1. INTRODUCTION

This document describes a draft Illustrative Forecast Model (IFM) developed for the DCP 325 Working Group. The following sections set out:

- specifications for the new file, including the identity of reference files and the new file name;
- how the new file differs from the Annual Review Pack (ARP) model; and
- issues that may arise as a result of the changes.

## 2. SPECIFICATION

The model and supporting documentation described herein were developed in response to a request received on 20/03/19. The modelling team was requested to produce an IFM to be used by the DCP 325 Working Group as a draft for discussion. The model specification described criteria that the IFM should meet but did not prescribe a modelling approach or provide draft DCUSA text. The specification required that the draft IFM should implement DCUSA text version 10.5 (released on 1st November 2018) – except where criteria described in the specification would require an alternative approach.

The model specification required that the IFM should:

- not lose any detail or functionality currently available in either the ARP model or Table 3 of Schedule 15;
- implement requirements of current Schedule 20, but for three forecast years (after the latest charging year for which charges have already been published); and
- replicate the structure of inputs used in the CDCM.

### 2.1. REFERENCE FILES

The following table sets out the reference versions of charging models used as the starting point for the revisions described in this document. The modelling team chose to build the draft IFM over the latest published version of the ARP model.

Table 2.1: Reference files

Model	Model file name	Date sent
ARP	ARP_v3_20181016.xlsx	16/10/2018

### 2.2. NEW FILES

The following table sets out versions of the charging models provided to the DCP 325 Working Group in response to the request described above.

Table 2.2: New files

Model	Model file name	Date sent
IFM	IFM_v3_20190423.xlsx	23/04/2019

The modelling team proposes to retain the version notation used in the ARP unless directed otherwise.

### 2.3. NEW MODELLING SPECIFICATION ASSUMPTIONS

- The Working Group has requested that the IFM should include Table 3 as referred to in Schedule 15, clause 35A.4, but not Tables 1 or 2. The modelling team received a response to its comments on the model specification cover sheet on 21/03/2019 clarifying that this initial iteration should not include Tables 1 or 2, but that this may be requested as a further iteration if needed.
- The modelling team has assumed that the IFM does not have to follow the exact layout of Table 3 as currently described in Schedule 15, clause 35A. That is, it should not be necessary to report company name, date, title, year, disclaimer and commentary next to each table of illustrative tariffs, nor to report profile classes for each tariff name.

## 3. MODEL REVISIONS

This section describes how the draft IFM differs from the ARP model.

### 3.1. STRUCTURAL CHANGES

- Inputs and outputs have been removed for the charging year in which the IFM is published ( $t+0$ ) and the following year for which charges have already been published ( $t+1$ ).
- Inputs to the IFM are arranged in the same format as in the CDCM, so that each year of inputs is entered on three separate sheets (e.g. 'Inputs by customer type\_ $t+2$ ', 'Inputs by network level\_ $t+2$ ', 'General inputs\_ $t+2$ ', etc.). In the ARP model multiple years of inputs are entered in different columns of the same sheet.
- The "Y" terminology previously used in the ARP model to reference charging years has been replaced by "t". The interpretation of "Y" and "t" are different. "Y" refers to the charging year for which charges are being published – which will start 15 months after the ARP is released. "t" refers to the charging year in which the IFM is published. So "t" could either be one or two years behind "Y", depending on when the IFM is published during the charging year.

### 3.2. ADDITIONAL OR MODIFIED INFORMATION SECTIONS

- **'Cover'**. Title and subtitle updated.
- **'Version control'**. Version log reset; issues log revised for new input sheet structure.
- **'Model map'**. Updated for new sheets and sheet names.
- **'Index'**. Updated for revised section structure.
- **'Named ranges'**. Updated for revised section structure; unused ranges deleted; output range titles changed to reflect " $t+2$ " terminology (e.g. *results\_6\_bills* → *results\_2\_bills*).
- **'DNO commentary'**. Description updated; "ARP\_" removed from sheet name.
- **'CDCM time bands'**. Description updated; "ARP\_" removed from sheet name.
- **'Load characteristics'**. Description updated; "Y" terminology changed to "t" terminology; "ARP\_" removed from sheet name.
- **'Peaking probabilities'**. Description updated; "Y" terminology changed to "t" terminology; "ARP\_" removed from sheet name.

### 3.3. ADDITIONAL OR MODIFIED INPUT SECTIONS

- **‘IFM\_User control’.** Description updated; “ARP\_” replaced by “IFM\_” in sheet name; “year selection” drop-down options restricted to t+2, t+3 and t+4; column H deleted from “List of years” table as outputs no longer needed to distinguish between “current” and “forecast” years, and year names changed to “t+/-” terminology; macro updated to account for change in sheet name, and removal of output ranges for t+0 and t+1 by changing “For counter = 0 to 4” to “For counter = 2 to 4” and removing the “+4” from the definition of “active\_year\_bills” and “active\_year\_tariffs” to align with new named range titles (e.g. “results\_2\_bills” is the destination range for typical bills in charging year + 2).
- **Input sheets.** Input sheets broken out by year as per CDCM structure; descriptions updated; protection between input cells removed to allow users to paste multiple input tables together – except on ‘General inputs’ sheets.
- **‘General inputs’.** Revised annotation for ‘Input 503-C: CDCM target revenue’ (now ‘Section 503-C’) clarifying that “Latest forecast of CDCM Revenue” is the only row used as an input to the model itself; revised checks based on ‘days\_in\_year’ to refer to the input year rather than the selected year.
- **‘Fixed inputs’.** Description updated to read “constant across DNOs and years”.

### 3.4. ADDITIONAL OR MODIFIED CALCULATION SECTIONS

- **Calculation / input sheets.** Descriptions updated, and revised to include selected year in description rather than as an ‘input from other sheet’; “historic / current / forecast” cell removed – as all years would now be “forecast”; values for selected year imported as blocks of formulae rather than cell-by-cell (i.e. greyed out cells contain a formula linking to the corresponding blank cell on the selected input sheet) which should reduce the risk of incorrect formulae.
- **‘General inputs’.** Revised annotation for ‘Input 503-C: CDCM target revenue’ (now ‘Inputs 507-C, 508-C and 509-C’) clarifying that “Latest forecast of CDCM Revenue” is the only row used as an input to the model itself.
- **‘Service model assets’.** Added missing units (£) to ‘Section 510-A: Service model notional asset values’ - Total service model notional asset value table.

### 3.5. ADDITIONAL OR MODIFIED OUTPUT SECTIONS

- **‘Tariff summary’.** Description updated; t+0 and t+1 tables removed; “Output 501-A: ‘Live year’ tariff results” table formatted as input from other sheet to distinguish ranges being populated by macro; table names updated.
- **‘Typical bills’.** Description updated; t+0 and t+1 columns removed; ‘live year’ column formatted as input from other sheet to distinguish ranges being populated by macro.

## 4. ISSUES

This section notes some issues which the Working Group may wish to consider as it decides how to take the IFM forward.

- The intent of DCP 325 is to “combine, review, and if appropriate amend the requirements of Section 35A, Section 35B, Schedule 15 and Schedule 20 to improve transparency and efficiency in the data

*published by DNOs*". The draft IFM solution does not remove the need to publish two sets of models at different times of year. DNOs would still publish Tables 1 and 2 of Schedule 15 separately unless those requirements are dropped or merged with the IFM.

- The IFM may be less useful as a scenario tool than the ARP model. Aligning the IFM's input structure with the CDCM input sheets has meant moving inputs onto a different sheet for each year. They may be less onerous for DNOs to populate than in the ARP model, but are also harder to edit when suppliers wish to apply their own forecast trajectories. For instance, rather than dragging a formula across a row on a single sheet, a supplier would instead enter formulae on three separate sheets.
- Schedule 20 paragraphs 2.1 (e) and (g) require DNOs to publish three years of historic data used to calculate peaking probabilities and load characteristics (load factor, coincidence factor and split of units by distribution timeband). DNOs publish the ARP model alongside other charging models by 1<sup>st</sup> January (i.e. 15 months ahead of the applicable charging year) – meaning that they have up to nine months to collect the most recent year of historic data. If the IFM is published quarterly alongside Cost Tables, then DNOs will only have up to two months to collect the most recent year's historic data in time to publish in May. If this is not possible, the IFM could either drop the requirement to present historic data or allow DNOs to choose the years for which historic data is available.
- The model specification defines  $t$  as "the current charging year" and  $t+1$  as the year for which "*charges have been published with the requisite fifteen months' notice*". In the ARP model the "*charging year*" is set by convention to the year for which charges are being published. If the IFM is published alongside charging models there could be confusion around definition of " $t$ " relative to the "*charging year*" used in other models.
- The modelling team received no draft DCUSA text for the IFM (because the Working Group wished to review a worked-up solution first). If DCP 325 is approved, references to Sections 35A and 35B, or Schedules 15 and 20 in the draft IFM will likely need to be revised.



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