

## Some technical details about <http://dcmf.co.uk/models>

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1. This paper provides a basic introduction to some internal elements of the model generation system. This is useful for troubleshooting, and for people who want to do more complicated things than what is offered by the basic user interface at <http://dcmf.co.uk/models>.
2. As things stand, doing these more complicated things requires using the source code (published at [github.com/f20/power-models](https://github.com/f20/power-models)). A more advanced user interface may appear on [dcmf.co.uk](http://dcmf.co.uk) at some point to give access to these features without needing computer programming knowledge.
3. The contents of a workbook generated by the system depends on three things:
  - (a) The “rules”. These are the options specified at the time of model generation, for example which tariffs should be included in the model, or how replacement costs should be treated.
  - (b) The pre-populated data, i.e. the initial values inserted by the model generation system into the unlocked input data cells of the workbook.
  - (c) The computer code on the [dcmf.co.uk](http://dcmf.co.uk) server. For example, if I change this code to fix a bug or add a feature, then the workbooks that it produces may change.
4. Towards the bottom of the “Overview” or “Index” sheet of the generated workbook, there is an area containing information about each of these three things. It appears under a heading like “Model identification and configuration”, and starts with a line containing three hyphens (“---”).
5. The rows from “---” (inclusive) until “~codeValidation!” (exclusive) are the rules, stated in full in the YAML format, which is mostly human readable. Table 1 has an example in the left column with commentary in the right column.

**Table 1** Commentary on a sample set of rules

<i>Rules</i>	<i>Commentary</i>
---	Separator line at the beginning of the rules.
PerlModule: CDCM	Which section of code to use, e.g. CDCM, EDCM, Method M, etc. In this case make a CDCM tariff model.
coincidenceAdj: groupums	The CDCM rule about coincidence adjustment factors required for DCP 130.
drm: top500gsp	A CDCM rule about how to specify the 500 MW model.
extraLevels: 1	A CDCM rule to include 132kV/HV transformation.

**Table 1** Commentary on a sample set of rules

<i>Rules</i>	<i>Commentary</i>
<code>inputData: dataSheet</code>	A rule to collect input data on the Input sheet.
<code>matrices: big</code>	A CDCM rule to include detailed tariff matrices.
<code>noReplacement: blanket</code>	A CDCM rule to exclude all contributions towards the replacement of deemed contributed assets.
<code>pcd: 1</code>	A CDCM rule to use Method M discounts as the basis of LDNO tariffs.
<code>portfolio: 1</code>	A CDCM rule to include LDNO portfolio tariffs.
<code>protect: 1</code>	A rule to enable worksheet protection.
<code>scaler: levelledpickexitnogenminzero</code>	A CDCM rule that specifies the revenue matching method to be what was approved as part of the CDCM in 2009.
<code>standing: sub132</code>	A CDCM rule about which standing charge factors to use.
<code>summary: consultation</code>	A CDCM rule to include summaries and CTables.
<code>targetRevenue: dcp132</code>	A CDCM rule to use my version of the DCP 132 format to enter target revenue data (instead of table 1076).
<code>tariffs: commongensubdcp130dcp137dcp163</code>	A CDCM rule about which tariffs to include.
<code>template: '%-feb2013demo'</code>	A rule that specifies the name of the workbook file.
<code>timeOfDay: timeOfDaySpecial</code>	A CDCM rule that specifies the use of black, yellow and green distribution time bands.
<code>validation: lenientnomsg</code>	A rule that specifies how Excel's data validation features are used for input data cells.

6. The rows from “~codeValidation!” (inclusive) until a line starting with “~dataset” (exclusive) provide a cryptographic signature of the source code that was running on the computer or server that generated the workbook (using the SHA1 algorithm). This information can be useful to a developer investigating problems with the model.
7. The remaining rows (up to and excluding the model generation date) provide information about the dataset that was used to populate the input data in the workbook, including a SHA1 cryptographic signature of any data file used. Again this is mostly useful for debugging.