

Analysis of the impact of DCP 266

17 January 2018, Reckon LLP

1. This document along with appendices presents the results of our analysis of the impact of a modelling change to implement a specification issued by the DCP 266 working group.
2. The reference model template is the CDCM and EDCM April 2018/19 pre-release models published on the DCUSA website in November 2016.

Input data and assumptions

3. The reference input data for this impact assessment are drawn from the CDCM and Method M models for the charging year 2018/2019 published on DNOs' websites, except for SP Energy Networks DNO areas where Method M models were provided to us (these are not published).
4. The scenario input data were provided by DNOs in response to an information request. The only adjustments that we made was to correct a manifest error of a factor of a million in some models (all three UKPN areas).

Presentation of the results

5. Our analysis compared LDNO discount percentages before and after DCP 266. We also looked at the impact of changing LDNO discounts on end user tariffs.
6. We present the full results of our analysis in the following sets of documents:
 - (a) The file labelled Appendix 1 sets out the impact of DCP 266 on LDNO discount percentages for all combinations of boundary and end user tariffs. This includes both CDCM (method M) and EDCM (extended method M) discounts.
 - (b) The file labelled Appendix 2 sets out the impact on LDNO discount percentages in a map form, showing differences in the impact between DNO areas.
 - (c) The folder labelled Appendix 3 contains three spreadsheets setting out the impact of DCP 266 on CDCM tariffs. This covers the impact on tariff components (unit rates, fixed charges, capacity charges etc), the impact on aggregate revenue by tariff and the impact on average revenue per tariff expressed in p/kWh.

Analysis of the results

7. DCP 266 changes the way in which LDNOs are charged for serving CDCM end users.
8. Under the current methodology, LDNOs' charges are determined on a portfolio basis by applying a single discount percentage for each boundary-end user voltage level combination to all end user tariff components (i.e. fixed charges, unit charges, capacity charges). The discount percentages are calculated using a price control disaggregation model (also known as the method M model), which allocates the DNO's price control

revenue to different parts of the distribution network. The results of this allocation are a set of LDNO discounts expressed in percentages.

9. Under DCP 266, the results of the price control disaggregation model would not be expressed in percentages, but rather in p/kWh. For CDCM LDNOs, four values of p/kWh discounts would be calculated:
 - (a) LV boundary and LV end user.
 - (b) HV boundary and LV end user.
 - (c) HV boundary and LV Sub end user.
 - (d) HV boundary and HV end user.
10. For EDCM LDNOs, 19 values of p/kWh discounts would be calculated. These reflect every combination of LDNO boundary (0000, 132kV, 132kV/EHV, EHV and HVplus) and end user (LV demand, LV Sub demand or LV generation, HV demand or LV Sub generation and HV generation), with the exception of HVplus boundary and HV generation.
11. The p/kWh discounts are then converted into discount percentages by dividing them by the appropriate CDCM end user tariff. For instance, to calculate the discount percentage for a HV boundary LDNO with a LV HH metered end user, the discount in p/kWh from (b) above would be divided by the average “all the way” LV HH metered CDCM tariff expressed in p/kWh. In the case of EDCM LDNOs, discounts for CDCM end user generation tariffs are calculated by dividing the p/kWh discounts by the absolute value of the appropriate end user tariff.
12. Under the DCP 266 approach, the p/kWh margins calculated under the method M approach could be higher than the corresponding average CDCM end user tariff (in the case of generation end user tariffs, the absolute value of the end user tariff), which in turn could lead to discount percentages greater than 100 per cent. In such cases, the discount percentages are capped at 100 per cent.
13. The DCP 266 approach does not allow the calculation of discount percentages in cases where forecast volumes for the corresponding all the way tariff in CDCM table 1053 are zero. In such cases, the model defaults to a discount percentage of 100 per cent.
14. The following tables sets out summary descriptions of the impact of DCP 266 on LDNO discount percentages for each CDCM end user tariff.

Table 1 Summary of the impact of DCP 266 for demand tariffs

CDCM end user tariff	Summary of impact on LDNO discount percentages*
Domestic Unrestricted	Lower discount percentages in all DNO areas.
Domestic Two Rate	Higher discount percentages in most DNO areas. Discounts are lower in UKPN EPN and SPN areas.

CDCM end user tariff	Summary of impact on LDNO discount percentages*
Domestic Off Peak (related MPAN)	Higher discount percentages in most DNO areas. Discounts are lower in UKPN EPN and SPN areas.
Small Non Domestic Unrestricted	Higher discount percentages in all DNO areas except SPEN SPD and SPM, and a few cases in NPG Yorkshire.
Small Non Domestic Two Rate	Higher discount percentages in all DNO areas except SPEN SPM in one case.
Small Non Domestic Off Peak (related MPAN)	Higher discount percentages in all DNO areas except SPEN SPM in one case.
LV Medium Non-Domestic	Higher discount percentages in all DNO areas except SPEN SPM.
LV Sub Medium Non-Domestic	Higher discount percentages in all DNO areas except SPEN SPM.
HV Medium Non-Domestic	Higher discount percentages in all DNO areas except SPEN SPM.
LV Network Domestic	<p>Mixed picture across DNO areas.</p> <p>For CDCM LDNOs there are higher discount percentages in SPEN SPD and SPM, NPG Yorkshire and Northeast, WPD East Midlands and West Midlands.</p> <p>Lower discount percentages in all other DNO areas. The reduction is relatively large in the UKPN SPN and WPD South West areas.</p>
LV Network Non-Domestic Non-CT	<p>Higher discount percentages in all areas except SPEN SPM, NPG Northeast and Yorkshire.</p> <p>The increases are particularly large in UKPN LPN and SPN.</p>
LV HH Metered	<p>Lower discount percentages in ENWL, SPEN SPM, SSEN SHEPD, UKPN EPN and LPN, and WPD South Wales.</p> <p>Higher discount percentages in SSEN SEPD, SPEN SPD, NPG Yorkshire and Northeast, UKPN SPN and all other WPD areas.</p>
LV Sub HH Metered	Higher discount percentages in all areas except SPEN SPM and SPD, and WPD East Midlands.
HV HH Metered	Higher discount percentages in all DNO areas except SSEN SHEPD.
NHH UMS category A	<p>Lower discount percentages in ENWL, SSEN SHEPD, UKPN LPN and SPN, and WPD South Wales and South West.</p> <p>Higher discount percentages in all other areas.</p>

CDCM end user tariff	Summary of impact on LDNO discount percentages*
NHH UMS category B	Lower discount percentages in ENWL, SPEN SPM, UKPN EPN and SPN, all four WPD areas. Higher discount percentages in all other areas (with one exception in UKPN LPN).
NHH UMS category C	Lower discount percentages in all DNO areas.
NHH UMS category D	Lower discount percentages in ENWL, SSEN SHEPD and UKPN LPN. Higher in all other areas.
LV UMS (Pseudo HH Metered)	Lower discount percentages in ENWL, SPEN SPM, UKPN EPN and SPN, and the four WPD areas. Higher discount percentages in all other areas.

*Post-DCP 266 discount percentages default to 100 per cent where volume forecasts are zero

Table 2 Summary of the impact of DCP 266 for generation tariffs (EDCM LDNOs only)

CDCM end user tariff	Summary of impact on LDNO discount percentages
LV Generation NHH or Aggregate HH	Higher discount percentages in all areas.
LV Sub Generation NHH	Higher discount percentages in all areas.
LV Generation Intermittent	Higher discount percentages in all areas.
LV Generation Non-Intermittent	Higher discount percentages in all areas except UKPN EPN.
LV Sub Generation Intermittent	Higher discount percentages in all areas.
LV Sub Generation Non-Intermittent	Higher discount percentages in all areas except UKPN EPN and SPN.
HV Generation Intermittent	Higher discount percentages in all areas.
HV Generation Non-Intermittent	Higher discount percentages in all areas.