# Analysis of the impact of DCP 270

1. 31 August 2016, Reckon LLP
   1. This document presents the results of our analysis of the impact of a modelling change to implement a specification issued by the DCP 270 working group in July 2016.
   2. The reference version is the CDCM April 2017 pre-release model published on the DCUSA website in November 2015 that includes DCP 227.

## Input data and assumptions

* 1. The CDCM input data for this impact assessment are based on data drawn from companies published 2017/2018 charging models.
  2. We were asked to assess the impact of removing three CDCM tariffs (LV Medium, LV Sub Medium and HV Medium) as part of DCP 270. If this change were to be implemented, customers who are currently on these tariffs may be migrated to half hourly settled tariffs. We have assumed that:
     1. Customers on the LV Medium tariff would be moved either to the LV Non-Domestic Non-CT tariff or the LV HH Metered tariff.
     2. Customers on the LV Sub Medium tariff would be moved to the LV Sub HH Metered tariff.
     3. Customers on the HV Medium tariff would be moved to the HV HH Metered tariff.
  3. The removal of the three NHH tariffs and the migration of customers to HH tariffs is likely to have a consequential impact on a number of CDCM input data items, which in turn could affect the surviving tariffs. As part of this impact assessment, we have tried to take account of these second order impacts by estimating how these input data items would change. Our source data for these estimates come from published DNO models for 2017/2018.
  4. Table 1053 of the CDCM contains forecasts of consumption volumes, capacities and reactive power aggregated for each tariff.
     1. We have assumed that the active power volumes for the LV Medium, LV Sub Medium and HV Medium tariffs would be moved to the relevant HH settled tariffs (as set out above). We have apportioned single and two-rate units to the red, amber and green time bands using the proportions set out in tables 1061 and 1062. We have split the volumes for the LV Medium customers between LV Non-Domestic Non-CT and LV HH Metered customers using the DNO estimates presented as part the DCP 179 Change Report.
     2. We have estimated the impact of the migration on forecast capacity using the ratio of aggregate maximum demand to aggregate capacity. For instance, we have estimated the aggregate capacity associated with HV Medium customers by assuming that these customers would have the same ratio of aggregate maximum demand to aggregate capacity as the existing HV HH metered customers. We have added this estimated capacity to the existing aggregate capacity of the HV HH tariff customers.
     3. We have estimated the impact of this migration on reactive power volumes in a similar manner. For instance, we have assumed that the ratio of active power to reactive power for the HV Medium customers would be the same as that for HV HH metered customers.
  5. We have estimated new coincidence factors and load factors (table 1041) for the four HH settled tariffs into which customers are likely to be migrated to. Our estimates were derived from existing load factor and coincidence factor data in published DNO models for 2017/2018. There is some uncertainty in these estimates, mainly due to difficulties in estimating the impact of the migration on maximum demand of the surviving tariffs. To resolve this, we produced two estimates for the maximum demand, representing an upper and lower bound. Our subsequent analysis revealed that the difference in the tariff impact between the upper or lower bound is insignificant.

## Approach to the impact assessment

* 1. Our impact assessment considers the impact of DCP 270 along two dimensions.
     1. We look at the impact *on each tariff* of the removal of the three NHH tariffs and the migration of the relevant volumes to HH tariffs.
     2. We then considered the potential impact of the change *on customers that may be migrated from NHH tariffs to HH tariffs* as a consequence of this change. To help us do this, we constructed seven illustrative customers with particular consumption patterns.
  2. The impact of the change on surviving tariffs small.
  3. The impact of moving from a NHH settled tariff to a HH settled tariff on individual customers can be case-specific and depends on their consumption patterns. We have tried to illustrate this impact by defining customers that cover a range of maximum demand and consumption patterns and calculating the impact of moving each of these from an NHH tariff to a HH settled one. We should point out that these illustrative customers are not necessarily representative of actual customers who may be affected.
  4. Table 1 sets out the assumed characteristics of the illustrative customers used in our analysis. Please see Appendix 1 for the further details about these illustrative customers.

Table 1 Illustrative customers used in our analysis

|  | **Consumption pattern (UK clock time)** | **Capacity** |
| --- | --- | --- |
| Illustrative customer 1 | Continuous load of 48kW at all times | 60kVA |
| Illustrative customer 2 | Continuous load of 48kW between 08:00-23:00 weekdays and weekends  Continuous load of 12kW at all other times | 60kVA |
| Illustrative customer 3 | Continuous load of 24kW at all times | 60kVA |
| Illustrative customer 4 | Continuous load of 48kW between 08:00-18:00 weekdays only  Continuous load of 12kW at all other times | 60kVA |
| Illustrative customer 5 | Continuous load of 48kW between 00:00-07:00 weekdays and weekends  Continuous load of 12kW at all other times | 60kVA |
| Illustrative customer 6 | Continuous load of 6kW between 08:00-20:00 weekdays and weekends  Continuous load of 3kW at all other times | 9kVA |
| Illustrative customer 7 | Continuous load of 6kW between 09:00-18:00 weekdays  No consumption at other times | 9kVA |

## Results of our analysis

* 1. We present the results of our analysis in two ways:
     1. The files in Appendix 2 sets out the impact of DCP 270 on individual tariffs. This covers the impact on tariff components (unit rates, fixed charges, capacity charges etc).
     2. The files in Appendix 3 sets out the impact of DCP 270 on illustrative customers. This is presented as a set of charts and tables, and shows the impact of moving these illustrative customers from a NHH settled tariff to a HH settled tariff.
  2. The impact of DCP 270 on individual tariff elements is small. There is no change in tariffs in a number of DNO areas, and a small (less than 1 per cent) change in others. Further details are available in Appendix 2.
  3. The impact on the illustrative customers of migrating to HH tariffs is large. Although these illustrative customers are not designed to be representative, our analysis points to a risk that in practice, some customers could see a significant increase to their charges as a result of the removal of the three NHH settled tariffs. Whilst significant increases are observed in all DNO areas, the largest increases are in the three UKPN areas (LPN in particular), WPD East Midlands and West Midlands, and SPEN SPD.