Comparing Quality of Supply Performance Working Group

Meeting 1 – Summary

The purpose of this group is to look at developing a normalisation model to enable more robust comparisons to be made of quality of supply performance. The group will also need to consider the most appropriate way of setting quality of supply targets for the next distribution price control period. The main reason the group has been set up is so ideas can be shared between Ofgem and the DNOs in an open and transparent forum. Ofgem does not have a monopoly on good ideas and would welcome and value as much input as possible from the companies.

Scope

1. Looking back to previous price control (DPCR3)

2. Discussion of Ofgems Consultation paper.

3. Related issues for Transco's network

4. Approach developed by DNOs

Quality of Supply Targets at DPCR3

The group briefly looked back at DPCR3, and in particularly the weaknesses associated with comparing quality of supply performance at that review. The main drawback was the straightforward benchmarking approach used – comparing absolute performance and percentage improvement in performance across companies without taking into account any other factors. This was hampered by the fact some companies had fairly robust measurement systems in place for the number and duration of interruptions while others were less robust. Moreover, the definitions of interruptions were not fully standardised across companies. Another suggested weakness of DPCR3 was an underlying assumption that quality of supply improved with time - this may not be the case.

Company Feedback on Ofgem Consultation Paper

For the past 18 months the companies (10 of 12 DNOs) have been taken forward work on developing a normalisation model based on HV circuits. The companies had the following feedback on Ofgem's September paper on Comparing Quality of Supply Performance.

General Overview – There was general support for Ofgem addressing differences in performance and their drivers, as well as support for the principals of normalisation. The companies welcomed Ofgem's acknowledgement that characteristics such as voltage, length of circuits and customer density affected performance, and that it would be costly or take a long time to change some of these characteristics.

The companies considered that the disaggregation and subsequent normalisation of data should be aimed at:

- improving customer understanding;
- identifying differences in performance;
- identifying underlying causes of poor performance;
- and developing opportunities for gap closure

The balance between average performance and worst served customers should also be considered.

Issues / Concerns – The companies were concerned that there were different expectations of normalisation. They suggested that normalisation only identified differences in performance, but to improve quality of service it was also necessary to consider causes of the differences in performance and possible means of closing these (i.e. gap closure.)

The companies considered that further work was needed to develop the methodology for normalisation as the complexity of the framework was not fully understood. The methodology adopted should be used to inform target setting but not applied mechanistically.

They noted that in setting targets it was important to take account of links between performance and assessment of other factors such as the costs of achieving service improvements and customer's willingness to pay.

There were concerns that only using one year's disaggregated data would lead to instability in results due to variations in average weather. Moreover, they noted that there were still issues regarding quality of data extraction.

The companies were concerned that the customer density approach developed by EA Technology may result in unlike circuits to be grouped together.

Process – The companies noted and Ofgem agreed that it was important for there to be an 'End to End' Process. The companies suggested that this should include:

- disaggregation of performance data;
- normalisation which identifies companies current positions;
- identification of key drivers of variance in performance; and
- identification of possible actions for closure of differences in performance(gap closure actions).

There is a desire that the disaggregation process should be simple and accompanied by stable band definitions. It was suggested that severe weather events should be excluded from the data to be normalised. The companies also believe the exceptional event definition should be related to performance improvement targets e.g. 20% of 10 CML – equating circa 5 days of average performance.

Expectations – The companies were seeking acknowledgement that cause identification and gap closure are essential. Ofgem accepted that it was important to identify key performance drivers and options for reducing differences in performance, but noted that it was important to consider the associated costs and customers' willingness to pay.

The companies were are also looking for recognition that inherited and inherent characteristics were inextricably linked, and should be based upon circuit length and number of customers in combination rather than separating them and using some form of weighting.

Both Ofgem and the companies were looking for the working group to develop a practical and useful methodology for normalisation.

DPCR3 and Transco PCR

Ofgem were keen to involve Transco in the process, as they too will be subjected to an incentive scheme on the number and duration of interruptions. It was quickly agreed that the methodology used for normalisation in electricity would differ significantly from that applied to gas. Transco are in a different position to the DNOs for a number of reasons.

Firstly, there is not the same history of reporting interruptions in Gas as there is in Electricity. Interruptions are less frequent, but it generally takes longer to restore supply because of safety considerations. The majority of interruptions on Transco's network are planned, whereas for the DNOs the majority are unplanned. Third-party damage is a significant source of interruptions on their network. Gas leaks on main do not necessarily lead to an interruption; they may only cause a reduction in pressure.

Safety, although an important issue for DNOs, is more prevalent in the case of gas. Before a customer's supply can be restored the gas pipes in their premises need to be purged of air. This can cause huge problems for Transco when a block of flats goes off supply as the gas needs to be purged from the pipes in each flat before supply can be restored.

Explanation of approach to disaggregation

A useful starting point is to expand the number of Customer Interruptions and number of Customer Minutes Lost Per Customer as follows:

$$\frac{\text{Network length}}{\text{Number of customers}} \times \underbrace{\frac{\text{Number of incidents}}{\text{Network length}} \times \frac{\text{Total customers interruptions}}{\text{Number of incidents}}}_{= \text{CIs}} \times \underbrace{\frac{\text{Total customer minutes lost}}{\text{Total customer interruptions}}}_{= \text{CMLs}}$$

Network length per customer can be further expanded to:

$$\underbrace{\frac{\text{Network length}}{\text{Number of circuits}}}_{= \text{Average network length}} \times \underbrace{\frac{\text{Number of circuits}}{\text{Number of connected customers}}}_{= \text{Inverse of customer density}}$$

Customer 'sparsity' as opposed to customer 'density' is viewed as a key factor in determining performance. The network length per customer is driven by customer sparsity, as are the fault rate (number of customers per kilometre), the number of customers interrupted per incident and the duration of customer interruptions.

A good proxy for sparsity is overhead lines. On this basis the companies classified HV circuits and associated performance on the basis of 3 physical parameters:

- the percentage of overhead line;
- circuit length; and
- customers per circuit

Considerable time has been spent determining the circuit grouping so that like circuits are grouped together. The companies emphasised that the work on disaggregation and normalisation is likely to disinform if unlike circuits are grouped together.

Once the circuit data has been grouped it can then be compared across companies or normalised for factors such as network length.

Ongoing Work

By the first week in November the companies plan to have collated and cut the data from 2001-2002 that is required to populate the model. (This data is still pre-RIG so it will have to be re-run when we have all data for 2002-03). They then intend to complete analysis of the data by the end of December.

Ofgem will issue a data request in January of 2003 to all 14 DNOs. This will be after we have seen the results of the above model. It will be important for this information request to be sufficiently flexible to allow different approaches to disaggregation and normalisation to be used.

At the next Ofgem working group the companies will go through the above model and their methods of data collation and cutting in greater detail. They will also give a progress report on the results obtained to data from analysing/normalising the group data.

The discussion will also have to be widened to include issues for normalisation on EHV and LV. HV has been the sole focus to date. The treatment of planned interruptions will also be a topic for discussion.

Agenda for next meeting – 27th November

- Brief overview of last meeting
- Detailed explanation/discussion of progress in collecting the data, disaggregating into circuit groups and analysing the group data
- Discussion of disaggregating/normalisation at other voltage levels (HV, 132 kV)
- Discussion of planned interruptions
- Update on timetable for work

Next Meetings – 27th November and 18th December