Information and Incentives Project

Review of Proposals for Rebasing of Targets – LPN

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Issue and Revision Record

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1 Summary

Ofgem has appointed the Consortium of Mott MacDonald and British Power International to provide an audit opinion on the re-basing of IIP targets for those electricity distribution companies that have a re-opener clause in their licences.

LPN is one such electricity distribution company and the present report provides a final audit opinion on the submission that LPN has lodged with Ofgem in support of its claim for the re-basing of its IIP targets.

The Consortium is of the opinion that LPN has, in conjunction with its service provider 24seven, adopted a sound approach to the comparison of incidents between the old and new measurement systems.

The Consortium is also of the opinion that LPN's submission is an accurate representation of the step changes in reported performance that it has experienced as a result of introducing its IIP-compliant measurement systems.

The Consortium therefore concludes that Ofgem can have confidence in using these figures as the basis for calculating the re-basing of LPN's IIP targets.

2 Introduction

As part of the final proposals for the IIP incentive scheme, Ofgem made a number of revisions to companies' 2004/5 targets for the number and duration of interruptions to supply to take into account the effects of:

- changes to definitions that were introduced in February 2001 to improve the consistency of reporting; and
- changes in measurement systems that companies had made, or were introducing, to improve the accuracy of their reporting.

Ofgem has advised the Consortium of Mott MacDonald and British Power International that there is still uncertainty over the impact of the changes that have been made to the measurement systems of several companies. Ofgem has appointed the Consortium to assess this aspect of these changes within specified companies. The distribution licences of these companies provide for each of the companies re-opening discussions with Ofgem if it considers that the introduction of its new measurement systems means that its existing targets are inappropriate. LPN, the company that holds the electricity distribution licence for operating the distribution network in the 'London' area, is one of the companies with this re-opener clause in its licence.

LPN and EPN are both owned by the LE Group and operate with a combined management structure operating across the two companies. Whilst both companies have lodged submissions with Ofgem under the re-opener clauses of their licences, the audit work on the re-basing of their IIP targets will be dealt with on a company specific basis.

LPN has contracted with 24seven to carry out services including the operation and maintenance of its network. Consequently, 24seven is responsible for providing the information to LPN that, in turn, LPN reports to Ofgem under IIP.

This report provides areview of the submission that LPN has made to Ofgem in support of its request for the re-basing of its IIP targets.

3 Audit Process

This section illustrates the audit process.

3.1 Resources

The Consortium was present at a meeting held on 05 July 2002 when a joint LPN/EPN/24seven team presented its initial submissions to Ofgem. At that meeting, the companies emphasised that their new IIP-compliant connectivity models had only been introduced during March 2002. Thus the evidence they were able to present at that time was only an initial indication of the changes being experienced in their reported performances.

The significant changes that the companies have experienced concern the number of customers affected by an incident and they have concluded that the changes are due to the consistent application of the newly introduced measurement systems.

At the request of LPN/EPN, it was agreed that they would be able to gain more experience with their new measurement systems before finalising their submissions to Ofgem. It was also agreed that a meeting would be held at the offices of 24seven, the LPN/EPN service provider, to explore and audit the methodology used by the companies to gather the evidence that was contained in their initial submission.

This meeting was held at 24seven's offices in Ipswich on 22 August 2002.

The visiting auditors were:

- Geoff Stott of British Power International
- Blair Walter of Mott MacDonald.

Chris Watts, Ofgem's senior manager for IIP and Quality of Supply was present throughout the visit.

Following LPN's further experience with its IIP-compliant measurement systems and a final submission to Ofgem dated 17 January 2002, a follow-up meeting was held at 24seven's offices in Ipswich on 21 January 2003.

The visiting auditors were:

- Geoff Stott of British Power International
- Blair Walter of Mott MacDonald.

The people from LPN / 24seven were:

Chris Watts and James Hope from Ofgem's Quality of Supply Team were present throughout this follow-up meeting.

3.2 Induction

By way of induction for the visiting auditors at the meeting on 22 August 2002, the LPN/24seven team used an opening presentation to illustrate how the new measurement systems operate and how these

relate to the IIP reporting requirements. This included a real-time demonstration of the newly introduced connectivity model.

A comprehensive introduction to the company systems had already been given to the joint British Power International / Mott Macdonald team during the visit to audit the sample of incidents as part of the wider IIP audit work being undertaken during 2002. Those findings will not be reproduced here.

3.3 Evidence submitted by LPN

3.3.1 General

At the time of the initial meeting in July 2002, LPN had insufficient data on which to base a robust submission. The company used the indicative output from the first three months of these studies in support of its initial submission to Ofgem under the re-opener clause in its distribution licence.

3.3.2 Counting of customers affected by incidents on LPN's systems

(i) Measurement systems - historical methods

Historically, the number of customers affected by incidents on the LPN distribution system was determined by the simple averaging ratio of:

$$\frac{\text{the total number of customers connected to its system}}{\text{the number of Transformer Chambers on its system.}}$$

This equated to 156 customers per Transformer Chamber[1].

(ii) Measurement systems - connectivity model – incidents at LV and at HV

LPN's distribution system includes two areas that operate in an interconnected mode, whereby a single fault on either the LV network or the 11kV network would not normally result in the loss of supply to customers. Whilst resulting in relatively few incident reports, these interconnected areas have a high density of Transformer Chambers and consequently would attract high customer numbers under the averaging rule of 156 customers per Transformer Chamber.

LPN's new connectivity model, giving connectivity down to the LV feeder level, was introduced in March 2002. With the introduction of the new connectivity model, it is apparent that considerably more customers are connected to the non-interconnected areas of LPN's distribution system than was historically thought, with a consequential decrease in the numbers notionally connected to the interconnected areas. The company has therefore experienced an increase in the reported number of customers affected by incidents on its non-interconnected areas of LV and HV networks, which is where most reportable incidents occur.

[1] Where the expression "Transformer Chamber" is the equivalent to a "Distribution Transformer" on other distribution systems.

In support of the interim submission to Ofgem, LPN/24seven used the initial findings from comparisons of incidents measured by the "156 customers per Transformer Chamber" rule against the new connectivity model. The results of this comparison indicated that a small change to CI and CML targets was required.

LPN's new connectivity model was audited in July 2002 as part of the wider IIP audit work undertaken during 2002. At that time it was concluded that: "The connectivity model provides a more accurate number of CI and CML than the averaging method".

3.3.3 Effects of incidents on LPN's EHV and 132kV networks

At the meeting on 22 August 2002, LPN/24seven tabled information that highlighted their concerns over the effects that incidents on LPN's EHV and 132kV networks were having on the company's reported performance. By way of example, the contribution to CI from incidents at EHV and 132kV in the first four months of the current reporting period was twice the average value over the last 10 years.

LPN/24seven wished to recast the analysis for re-basing of targets using a five- or six-year average value for CI from EHV and 132kV incidents. It was agreed that LPN should provide evidence of the five-year reported performance of these networks on which the Consortium could base a robust audit opinion.

The further evidence was submitted under cover of LPN's email of 22 October 2002. The visiting auditors carried out dip-stick tests on the evidence during the follow-up visit on 21 January 2003.

4 Summary of Findings

4.1 Measurement systems - historical methods

The visiting auditors verified the company statement that an historic averaging system had been used to estimate the numbers of customers connected to a Transformer Chamber. They agreed that the reported numbers of customers using this historic method would produce results that were less accurate than the new systems.

4.2 Comparison of measurement systems - company methodology

LPN/24seven outlined the methodology that they used to determine the comparative data for submitting to Ofgem in support of LPN's more robust submission. The visiting auditors are of the opinion that LPN/24seven have adopted a sound approach to the comparison of incidents between the old and new measurement systems and that this provides the basis on which to rebase the LPN targets.

4.3 Effects of incidents on the EHV and 132kV networks

A sample of the company's incidents at the EHV and 132kV level was audited for approach, methodology and accuracy. Incidents were chosen at random from across the reporting years and the various voltages so as to investigate the possibility of any bias having been introduced during the five-year period.

One incident was of a complex nature and could not be verified using the network diagram alone. This incident necessitated the running of an enquiry on the LPN connectivity model to determine the number of customers affected by the interruption.

In all cases, the visiting auditors were able to verify that the data contained in the LPN submission is accurate.

4.4 Conclusions

The Consortium is of the opinion that LPN/24seven have adopted a sound approach to the comparison of incidents between the old and new measurement systems for both CI and CML.

The Consortium is of the opinion that LPN/24seven have properly identified the causes of inaccuracy in the historically reported CI and CML figures. This gives further confidence that the tabulation contained within LPN's submission represent a reasonable analysis of the variation between incidents reported on the company's pre- and post- IIP-compliant measurement systems.

The Consortium is of the opinion that LPN's submission is an accurate representation of the step changes in reported performance that it has experienced as a result of introducing its IIP-compliant measurement systems.

The Consortium therefore concludes that Ofgem can have confidence in using these figures as the basis for calculating the re-basing of LPN's IIP targets.