



The future

# NIA Progress Report

NIA\_ENWL010  
Value of Lost Load to Customers

22 July 2016



## VERSION HISTORY

Version	Date	Author	Status	Comments
v.1.0	20/07/2016	K Quigley Project Manager	Final	Final version following internal review and comment

## REVIEW

Name	Role	Date
A Howard	Programme Manager	21/07/2016
D Randles	Network Performance and Innovation Manager	21/07/2016
P Turner	Future Networks Delivery Manager	21/07/2016

## APPROVAL

Name	Role	Date
Steve Cox	Head of Network Engineering	22/07/2016

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## 1 PROJECT BASICS

Project Title	Value of Lost Load to Customers (VoLL)
Project Reference	NIA_ENWL0010
Funding Licensee(s)	Electricity North West Limited
Project Start Date	October 2015
Project Duration	15 months
Nominated Project Contact(s)	Kate Quigley (kate.quigley@enwl.co.uk)

## 2 SCOPE

Customer engagement research across the full range of DNO customers:

- Domestic customers (qualitative ECP and quantitative research): General, worst served customers, vulnerable customers, fuel poverty, adopters of LCT, heavy users (targeted by tariff type) SMEs: (qualitative ECP and quantitative research) \* Targeted at industries with heavy reliance on electricity
- Stakeholder engagement (qualitative depths): Ofgem, DECC, Citizens Advice Bureau, Local government (resilience forums), charities (such as British Red Cross), police, fire brigade, housing associations, Emergency services, hospitals, care homes, airports and other transport hubs.

*\* Large I&C customers are not a primary focus of this survey as they are likely to have provisions in place for dealing with lost load (such as generators)*

## 3 OBJECTIVES

This research aims to quantify the value of dead load/loss of supply to customers. This will be achieved by answering the following research objectives:

- What is the impact on customers of lost load?
- What is the value of this impact – financial and social costs to customers in £ per kw?
- How does this vary by customer type? Currently all customer types are treated uniformly
- How can Electricity North West and key stakeholders mitigate the costs of lost load to customers?
- How will this vary with LCT adoption?

## 4 SUCCESS CRITERIA

The project success criteria are:

- An understanding of customer impact, how value is defined and how this might be influenced, eg better communications
- A credible segmentation and future VoLL model by key customer groups (curves) to guide investment decisions
- A demonstration of how these values would help Electricity North West to better plan their network investment strategy
- Guidance on customer compensation strategies.

## 5 PERFORMANCE COMPARED TO THE ORIGINAL PROJECT AIMS, OBJECTIVES AND SUCCESS CRITERIA

The project is meeting its original project aims, objectives and criteria, however, as the project has developed, a number of improvements and enhancements have been suggested which are likely to have a timescale and a potential cost impact described below.

### 5.1 Phase one: Understanding the problem

#### *Desk research*

A comprehensive literature review has been completed and a methodology statement developed.

#### *Peer review of methodology*

A peer review of the proposed VoLL methodology was undertaken on 9 February 2016 by Professor Ken Willis, who is Emeritus Professor of Environmental Economics at Newcastle University.

#### *Interviews with key stakeholders*

Depth interviews have been held with representatives from DECC and Citizens Advice.

The research approach was refined as a direct result of the peer review and interviews with key stakeholders and a revised methodology statement has been published.

#### *Customer engagement plan and data privacy statement*

CEP and DPS documents were submitted to Ofgem for approval on 9 February 2016. Confirmation of approval was received on 14 April 2016.

The documents produced in phase one are published on our webpage at [www.enwl.co.uk/voll](http://www.enwl.co.uk/voll).

### 5.2 Phase two: Refining the approach – depth interviews and engaged customer panels (ECPs)

Phase two of the research comprised focus groups and depth interviews with a cross-section of customers, and with stakeholders likely to be in contact with customers during a supply interruption. Attempts were made to include customers who have experienced low probability, high impact events in this phase.

### *Engaged customer panels*

The ECPs were comprised of four focus groups (domestic urban, domestic rural, worst-served and small to medium enterprises) of 8-10 individuals representing each customer segment. Each group met twice before the start of the quantitative research. ECP materials have been published on the project webpage.

The ECPs successfully met the following research objectives:

- To establish customer perception and the impact of VoLL on their household/business
- To evaluate the suitability of different elements of impact, response and support that are appropriate to measure VoLL and form the basis of the survey instrument; specifically, the attributes and levels to be used in the choice based conjoint, with regards to effectiveness and accuracy of data collection.

### *Depth interviews*

In addition to the ECPs, depth interviews will be conducted with difficult-to-reach customers and stakeholders who represent organisations likely to be in contact with customers during a power cut. This activity is currently ongoing and is anticipated to be completed in July 2016.

### *Stakeholder update*

The first in a series of quarterly update reports was sent to industry stakeholders and Electricity North West's executive leadership team (ELT).

## **6 REQUIRED MODIFICATIONS TO THE PLANNED APPROACH DURING THE COURSE OF THE PROJECT**

### **6.1 Phase one: Understanding the problem**

#### *Peer review*

The peer review process refined the proposed approach in a number of areas, including:

- Increase the literature review used for the project
- The method was updated to better reflect risks associated with scaling of the willingness to pay (WTP) or willingness to avoid (WTA) findings with the inputs being used
- Clarification was added regarding the focus of the study responding to the future needs of customers
- The logit model used in the method was updated to allow direct comparison of the results with the London Economics study, even though this approach is more econometrically restrictive
- The peer review identified a potential weakness on how the adoption of low carbon technologies (LCT), both current and in the future, could be appropriately captured. Changes to the survey are being considered to allow differentiation between various LCT scenarios and the impact on VoLL. These changes are likely to increase the volume of surveys required and will have an impact on project timeframes and costs. When understood and if required, any change will be formally communicated.

### *Interviews with key stakeholders*

The project hoped to undertake a key stakeholder interview with Ofgem in addition to DECC and Citizens Advice. This has not been possible to date, so previous consultation work has been used as mitigation. Future input to the project from Ofgem is still welcomed.

Stakeholder input has helped clarify the scope and definition of the project and its elements in a number of areas including the role of the ECP and the treatment of short duration interruptions (SDIs).

## **6.2 Phases two and three: Refining the approach and measuring VoLL**

Phase one has taken longer to complete than originally anticipated, partially due to the quality of the interaction and the range of suggestions and enhancements brought to the project. Phases two and three of the project are therefore delayed which places at risk the scheduling of surveys that were intended for summer and winter. An assessment is being made on whether the summer surveys will now have to occur in 2017. If appropriate, a formal change will be communicated with a revised schedule.

No further changes were required to the planned approach.

# **7 LESSONS LEARNT FOR FUTURE PROJECTS**

## **7.1 Phase one: Understanding the problem**

### *Interviews with key stakeholders*

The stakeholder engagement exercise was extremely valuable and has helped improve the quality of the project.

### *Peer review*

The peer review provided valuable feedback to the planned approach and will contribute to maintaining standards of quality, improving performance and providing credibility to the project.

## **7.2 Phase two: Refining the approach**

### *Engaged customer panels*

#### **The relationship between DNO and supplier is still confusing for customers**

When introducing research and development projects to customers, it is imperative that the relationship between the DNO and electricity suppliers is explained and understood. This should be reinforced with an explanation that the DNO is responsible for a regionally based infrastructure; does not have any involvement in the calculation or production of customers' bills; and that customers are unable to change their DNO, whereas they can change their supplier.

#### **Customers find it extremely difficult to imagine, or are unwilling to accept, the extent of future electricity demand**

Customers need to be educated about the low carbon agenda and the anticipated increase in future demand for electricity before they are able to understand the challenges facing the energy sector. Customers also appear to find it extremely difficult to imagine, or are unwilling to accept, the extent of future demand and consequently, increased dependence on a reliable electricity supply. Early adopters of LCTs, particularly those who have experienced power cuts, are more able to visualise increased reliance on electricity in the future. However, both early adopters and non-LCT users perceive that new technologies and innovations in electricity storage will allow the energy sector to manage increased demand without any significant customer impact. As such, customers find it difficult to link the impact

of supply interruptions in a future scenario with their personal reliance on electricity for heat and transportation.

**Any activities that might be interpreted by customers as involving a direct financial cost need to be carefully introduced and thoroughly explained**

The survey methodology and tools need to be very carefully designed and explained to ensure customers do not misinterpret their intention, especially where financial costs or hypothetical payments are used. The ECP has proved valuable in this area and a number of enhancements to supporting documentation are in progress.

## **8 THE OUTCOMES OF THE PROJECT**

Not applicable.

## **9 PLANNED IMPLEMENTATION**

Not applicable.

## **10 OTHER COMMENTS**

Not applicable.