



Response to the Department for the Economy's Consultation on the Design Plan for the Roll-out of Smart Electricity Meters in Northern Ireland.

The European Utilities Telecoms Council (EUTC), representing European electricity and gas generation, transmission and distribution companies welcomes the opportunity to respond to the Department for the Economy's Consultation on the Design Plan for the Roll-out of Smart Electricity Meters in Northern Ireland.

Overview

EUTC welcomes the opportunity to respond, especially as many EUTC members are participants in the UK energy sector. Mitigating climate change and reducing atmospheric carbon dioxide are global imperatives within which utilities, especially the electricity sector, play a vital role, whilst still ensuring a secure electricity network delivering affordable energy to consumers and businesses. The UK has committed itself to challenging legally binding obligations which it must plan to deliver. Utility operational telecommunications are an essential enabler of the digital transition which facilitates these changes.

EUTC represents the views of the telecommunications professionals within a number of major licensed European Utility transmission and distribution network operators together with their related industrial vendors. As such, our comments are restricted to the telecommunications aspects of the Design Plan.

The associated LCP Delta Report makes many references to the GB Smart Meter roll out, and more recently the critical BBC Panorama Programme on the GB Smart Meter system has been observed throughout Europe.

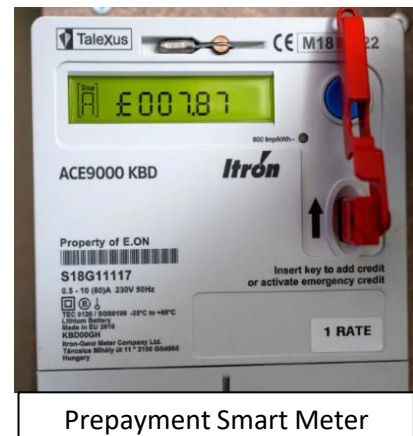
In our view, experience in other countries has shown that integration of smart meters into the DNO network allows their data to be used far more effectively in managing electricity networks than if the data is routed through intermediaries. Smart meter data can then be used more effectively to understand distribution network power quality and stability issues and potentially prevent/predict problems before they arise and impact the consumers. We understand that 'yet to be published' data from the USA will demonstrate how Distribution Network Operators (DNOs) use of smart meter data in the distribution network can identify faults such as high resistance connections before they cause disruption to the power supply, or help to mitigate issues arising from distributed energy generation. These new capabilities are achieved by embracing distributed edge intelligence at meter level and taking advantage of innovative capabilities in the (radio) communications network.

We believe that data in the LCP Delta report, especially from Italy and France, support the view that smart meter roll out managed by electricity distribution companies is superior to other approaches. DNOs are well placed to resolve communications issues as in many cases, such as Northern Ireland Electricity Networks, they are already experienced in managing highly resilient, secure and reliable telecommunications networks.

Electricity Meters under DNO control also facilitate the balancing of consumer's demands to access electricity when the price is lowest with the need to ensure the physical network remains within safe operating parameters.

Northern Ireland is in the enviable position of being able to learn from others' experiences to deliver a cost effective and rapidly deployed smart meters program for the benefit of businesses and consumers. The LCP Delta report appears to capture many of these learnings.

There is one area however where we think the LCP Delta report underestimates the difference between the Northern Ireland situation and other European markets: this is the high proportion of prepayment customers, believed to be in the region of 40%. The LCP Delta report refers in section 4.2.1 to the issues which have arisen in the GB market relating to prepayment mode. If prepayment customers in Northern Ireland suffer in any way from the roll out of smart meters, it would undermine public confidence that 'Consumers will be at the heart of smart metering' (Section 2.3 of Consultation). Our answer to Question 16 relates to this issue.



Prepayment Smart Meter

Answers to specific questions

12. Do you have any comments on our overall approach to data privacy and consumer consent?

The section on cybersecurity is contained within this question. We note that in general, Private Utility Telecommunications Networks are considered more secure than public networks as the attack surface is more limited and access to the networks is easier to control. Private Networks, by their nature, are simpler in their construction and operation so that if an attacker successfully compromises the network, detection and recovery can be achieved more quickly than in complex public mobile operator networks.

16. Can you suggest any improvements to the current payment system for both credit and prepayment meters that should be requirements for the procurement process?

The correct operation of credit and prepayment smart meters is crucially dependent on a resilient, reliable and continuously available connection to the smart meter communications network. This raises questions relating to the appropriate telecoms network, including:

- Coverage of smart meters from commercial mobile networks is incidental to their main service requirement, and changes from time to time, especially when base station sites or technical parameters change due to operational circumstances for the operators. This can mean that even where coverage and acceptable signal quality is available when the meter is installed, it cannot be guaranteed over the 20 year lifetime of the meter.
- The LCP Delta report postulates that smart meter telecoms could be linked with the extensive roll-out of fibre connectivity in Northern Ireland. Superficially, this is highly

attractive, but if used for prepayment or credit meters, the situation has to be considered where the electricity credit is exhausted and the meter disconnects the electricity supply until additional funds are credited. However, unless special measures are taken, it is likely that the power to the data modem or router will have been lost, so there will be no telecoms connection for the meter to be re-enabled.

- Licensed radio services, most commonly now the 3GPP technology LTE for smart meters, is part of a purpose-built network, hence coverage can be designed and maintained for all the required smart meter connectivity; and if it fails for any reason once in service, the radio network operator has the ability to remedy the situation.

17. Commercial mobile networks, private radio frequency, power line communication and Broadband will be explored as potential communications methods to transfer smart meter data. Do you agree these are the main methods and are you aware of any other ways this can be done? Yes/No- please give further detail.

It is unlikely that one single technical solution will provide cost effective two-way connectivity to every single meter (see answer to Question 18 below), so a range of technical solutions should be considered to meet a 100% coverage requirement. Current market trends are tending towards combining Private Radio based solutions, using 3GPP standardized technology with other (non 3GPP) radio technologies, which enable efficient data aggregation and local meter to meter communications.



Utility radio tower

We observe that whilst ‘commercial mobile networks’ and ‘power line communications’ are relatively homogeneous options, ‘private radio frequency’ networks covers a vast range of network configurations, technologies and standards with varying coverage, performance, costs etc. These private radio networks also in many cases require access to licensed radio spectrum to ensure interference free operation.

We assume that a ‘Private Radio’ network might also include a satellite segment in addition to terrestrial components. Although in general, satellite communications are too costly to be considered for mass market roll-outs, they can be ideal supplements for remote ‘hard-to-reach’ areas.

In the light of the unfavourable, critical commentary on a radio (wireless) based solution in the BBC Panorama Programme¹, we note that the particular telecommunications solution subject to hostile comments was of a proprietary nature with a specialist architecture, not representative of the predominant deployments of radio-based solutions in other markets.



¹ <https://www.bbc.co.uk/news/articles/cq52382zd1no>

**18. Do you agree with the strategic goal that all consumers should have smart meters?
Yes/No – please give reasons.**

Whether or not a consumer wishes to take advantage of the features provided by a smart meter, the functionality and information provided by the meter to the electricity distribution network operator is valuable in providing a reliable service to consumers together with identifying and rectifying faults.

The European Utilities Telecom Council (EUTC)

The European Utilities Telecom Council (EUTC) is the leading European Utilities trade association dedicated to informing its members and influencing policies on how telecommunication solutions and associated challenges can support the future smart infrastructures and the related policy objectives through the use of innovative technologies, processes, business insights and professional people.

This is combined with sharing best practices and learning from across the EUTC and the UTC global organization of telecommunication professionals within the field of utilities and other critical infrastructure environments and associated stakeholders.

EUTC includes a number of UK utilities and industrial partners operating in the UK.



Typical utility distribution control room

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