



**Smart-metering rollout scenarios & CBA**  
***BGN Response to CER/10/197 Consultation***



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# 1. Introduction

Bord Gáis Networks (BGN) welcomes the opportunity to respond to the second consultation on “Possible National Rollout Scenarios for the Smart Metering Cost Benefit Analysis”, published by the Commission for Energy Regulation (CER) on 11<sup>th</sup> November 2010.

The European “Third Package” legislation and “Energy End-use Efficiency and Energy Services” Directive (2006/32/EC), stipulate that customers are entitled to receive all their energy consumption data in an easily understandable and harmonised format, and at a sufficient frequency to enable them to adequately regulate their own energy consumption.

The European Commission highlighted in their Interpretative Note<sup>1</sup> the requirement for “intelligent” or smart metering systems, to help consumers better understand and regulate their energy consumption (including the cost of their energy consumption).

BGN believes that smart-metering is essential to meet the above legal objectives. It will also deliver significant economic and environmental benefits to the Irish economy and consumer, in terms of increased energy competition, reduced energy consumption, more accurate billing, facilitating renewable technologies and improved services for pre-pay and vulnerable customers.

BGN is already deploying smart-ready meters as part of its domestic Meter Replacement Programme (MRP). These meters have the potential to be upgraded to a smart-meter at a later stage, by developing and attaching an appropriate communication module to the meter. This approach has a number of advantages:

- It provides a low-risk and economical pathway for upgrading to full smart-metering at a future date, as a communication module can be developed and attached to the meter at a relatively low-cost:
  - There is no inconvenience to the customer, as there is no need to take the meter out of service during the up-grade process; *and*
  - It will be possible to attach the communication module to the meter using low-cost labour such as meter-readers etc;
- It provides the flexibility to switch an existing meter from the credit to the Pre-Pay Meter (PPM) mode, without the need to physically exchange the meter (by fitting a PPM module to the meter); *and*
- It also helps to future-proof any smart-metering solution, as future technology upgrades can be accommodated by changing the communication module, and leaving the existing meter in place.

The second consultation paper will provide another important step in identifying the optimum road-map for a national smart-metering rollout, particularly in terms of the required functionality, service-levels and technology solutions.

## 2. Objectives

BGN agrees with the proposed objectives of the national smart-metering programme, and welcomes the CER intention to continue to review the potential synergies between energy and water smart-metering with the Department of the Environment, Heritage and Local Government.

## 3. Ownership, display and provision of data

### 3.1 Gas data granularity

BGN broadly agrees with the proposals for the ownership, display and provision of information in Section No.3, but would like to comment on some aspects such as the proposed granularity for the gas smart-metering data, provision of data to suppliers, billing frequency and potential application to PPM metering.

The consultation paper correctly identifies the necessity to strike a balance between the gas data granularity, and maximising the battery-life of the smart-meter. The CER suggests that further analysis is required in the Cost Benefit Analysis (CBA) study, but notes that the minimum requirement may be daily granularity:

- One consequence of daily granularity, however, is that it will not be possible to provide gas consumption in “real-time” to the In Home Device (IHD); *and*
- The lack of real-time gas consumption may restrict the ability to capture other expected benefits of smart-metering, such as increased energy efficiency and supporting the deployment of renewable technologies and micro-generation.

Although the gas smart-meter will be able to record and store Half-Hourly (HH) consumption interval-data, it will not be available to the IHD until the Gas Meter communication module “wakes-up”. The Gas Meter communication module will then broadcast the HH interval data to the IHD and the Wide Area Network (WAN). However, this data will be “historical” rather than real-time HH consumption data.

### 3.2 Provision of data for suppliers


BGN supports the proposal to make data available to both suppliers and customers through a central data-portal. BGN has already trialled a web-based data-portal in its Small Medium Enterprise (SME) smart-metering trial, and believes that there may be scope for extending this to domestic smart-metering as well.

While BGN supports the concept of a common data-portal for gas and electricity customers, it may be necessary to separately process the gas and electricity smart-metering data, due to the different market-rules and licence obligations for each industry.

The data-portal should, however, provide a “seamless” single-point of service for all gas and electricity customers, shippers and suppliers. This could easily be achieved through the use of common data-protocols and agreed file-formats for the gas and electricity data.

### 3.3 Billing content and frequency

BGN believes that gas and electricity customers will need to have their consumption data provided on a more frequent basis, if they are to fully realise the expected benefits of smart-metering (in terms of reducing and managing their energy consumption).



BGN notes that the European Commission Interpretative Note recommends that customers should at least receive their consumption information on a monthly basis<sup>2</sup> (in order to be able to properly regulate their energy consumption).

BGN would also support monthly billing, as it would help customers to better manage their energy consumption and maximise the potential for energy efficiency savings. More frequent billing information would also assist people experiencing financial difficulties in the current economic climate, to better manage their energy payments and utility bills.

The information provided to the customer should ideally be in a user-friendly format, and include for example a graphical representation of their daily energy usage and its corresponding monetary value, together with their carbon or CO<sub>2</sub> usage.

### **3.4 PPM metering**

A major advantage of smart-metering is the ability to remotely switch a meter from the credit to PPM mode (and vice-versa), without having to physically change the meter. This will allow shippers to offer their customers PPM and Pay As You Go (PAYG) tariff options, without having to exchange the meter. This is an important consideration in the current economic times.

## **4. Smart-metering system functionality**


### **4.1 Gas smart-meter functionality**

BGN broadly supports the proposed functionality for gas smart-meters, as it provides a comprehensive list of all the potential requirements that have been proposed in other countries. Some of this functionality may not be necessary (e.g. functions such as temperature-corrected volume readings), however, and BGN would propose that the final functionality is agreed during the detailed design phase.

### **4.2 WAN Technological solutions**

BGN notes that there are a number of potential technology options available for the Wide Area Network (WAN) solution, and that there may need to be different technological solutions for urban and rural customers. BGN believes that the final technological solution(s) for the WAN should be driven by both economic considerations and business requirements:

- The final technological solution should provide the least whole-life cost for the WAN infrastructure over the anticipated life of a smart-meter, and deliver the required level of service in terms of:
  - The overall reliability and availability of the WAN infrastructure;
  - Percentage targets for daily collection of interval and meter-register consumption data;
  - Adequate bandwidth and contention rate for data transmission, auto-deployment, remote firmware upgrades and future service expansion;
  - Adequate level of data-security to ensure that customer and supplier data cannot be compromised;
  - Requirements for notification of events and alarms; *and*
  - Response time to rectify communication outages etc.

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- The minimum service levels should be agreed between all the relevant parties and recorded in a formal Service Level Agreement (SLA); *and*
  - The SLA should also clearly identify how issues relating to technology upgrades etc are dealt with, including any requirements for backward-compatibility with the existing smart-metering infrastructure.

### **4.3 Ownership options for the WAN**

BGN agrees that it is probably more cost-effective, to provide a single WAN infrastructure for gas and electricity smart-metering. The ownership and management of the WAN network is likely to be determined by the technological solution (e.g. a wireless solution may be owned by a third-party), and there may be more than one technological solution for urban and rural customers.

It will be important to define in advance how costs of a shared WAN infrastructure will be allocated between gas and electricity customers, given the different total number of customers and the urban/rural split for each group. It would be useful if the CER could provide greater clarity on this issue in future consultations.

As noted previously it will also be important to have agreed and defined SLAs in place between all the relevant parties, to ensure that the minimum-levels are achieved. There would also need to be an agreed regulatory framework in place for a shared WAN infrastructure, to deal with the resolution of disputes etc.

There may be an economic case for a separate WAN communication network for gas Industrial/Commercial (I/C) smart-metering, due to the higher meter-reading costs for I/C gas meters, the different technological-options available for this sector and the location of the meter in an I/C site.

### **4.4 IT Systems and Functionality**

BGN notes that the comments made in relation to the role of the Meter Data Management System (MDMS) for electricity smart-metering data, are also relevant for gas smart-metering data. The solution for gas will obviously have some differences and additional complexity:

- Different market arrangements, market systems and Code of Operations for the gas industry, compared to the electricity industry; *and*
- There is the additional complexity in the case of gas metering data, of converting the meter readings from volume to energy at standard reference conditions.

There will obviously be a number of potential solutions to the gas MDMS requirements, and BGN looks forward to working with the CER and other interested industry parties in identifying and developing the optimum solution for the customer.

## **5. The Home Area Network (HAN) technology**

The consultation paper outlines a number of potential technological options in relation to the HAN solution, namely implementing a utility HAN or a separate non-utility HAN solution. Again BGN believes that the final technological solution should be determined, by which option provides the necessary functionality at the least whole-life cost.

The utility HAN approach has the advantage that it would probably be easier to implement in the short-term for both gas and electricity customers, given the current immaturity of the non-utility HAN options. It may also be easier to ensure data security on a utility HAN solution, an important consideration for generating public confidence in a national smart-metering programme.



## 6. References

[1] Section 4.7 “Implementation of Intelligent Metering Systems”, of the European Commission Staff Working Paper “Interpretative Note on European Directive 2009/72/EC Concerning Common Rules for the Internal Market in Electricity and Directive 2009/73/EC” Concerning Common Rules for the Internal Market in Natural Gas” (published Brussels, 22<sup>nd</sup> January 2010).

[2] Section 4.7 of the above Interpretative Note states that “with regard to the frequency of meter reading, it should be noted that consumers must be properly informed of actual energy consumption and costs frequently enough to enable them to regulate their own consumption (Annex I (1) (i) of the Electricity and Gas Directives). *The Commission’s Services consider that receiving information on a monthly basis would be sufficient to allow a consumer to regulate his consumption*”.