

# Smart Metering Implementation Programme: Multiple Perspectives

## Workshop Synopsis

Engage Consulting was excited by the opportunity to host one of the workshops at February's New Energy Economy conference. Our subject: "Smart Metering Implementation Programme ("SMIP"): Multiple Perspectives" set out to offer a wide variety of views on the state and status of smart metering, from an equally wide variety of interested participants.

Speakers included those with an eye on the global trends in energy supply and smart metering; to those with an eye on the real operational challenges of implementing smart meters – whether planning for large roll-outs or having experienced them first hand; to business process change specialists. The topics covered were:

- Business Process Impacts of Smart Metering
- Smart Grid Data Analytics
- Case Study: ESB – Ireland Smart Metering Pilot
- Case Study: Pacific Gas & Electric – California's Large Scale Implementation
- Roll-Out Options: Meter Service Provider Perspective
- Small Supplier: Market Entry Barriers & Opportunities
- IHD; Consumer Applications; and Smart Homes
- Pathways: Meter to Grid and Meter to M2M

The audience came with a breadth of interests including: energy suppliers both small and large; consultants; communications providers; academics; central market bodies; and government. The resulting debate was lively and passionate.

Overall, whilst significant issues remain and there was certainly nothing approaching consensus of opinion on many subjects, the views expressed were heartfelt. The direction in which the GB market and the implementation programme are developing was broadly viewed as positive. Whilst there are challenges still to be faced and addressed, what is clear is that the GB market is at the start of turning smart meter theory into smart meter reality.

This paper summarises themes of discussion at the workshop, both around presentation material and in response to a question set that was posed to the audience and debated.

## Summary Conclusions

The theme of the debate was intended to draw out the real complexity inherent in undertaking the ambitious national programme of works that is GB's SMIP and to elicit the best way to address multiple priorities from a variety of stakeholders that will need to be carefully balanced if "success" is to be achieved.

Planning now for a broadly understood end-state: whether in terms of carbon reduction targets; the need to ensure the benefits case is achieved; delivery of the benefits themselves to consumers, networks or suppliers; or preparing to ensure that roll-out targets are achieved will be critical to facilitating that success.

Discussion drew out some important observations:

- We are making the right steps nationally, but there is a lot we can learn and pitfalls we can avoid by paying attention to lessons from elsewhere, and from early deployments. The high levels of interest

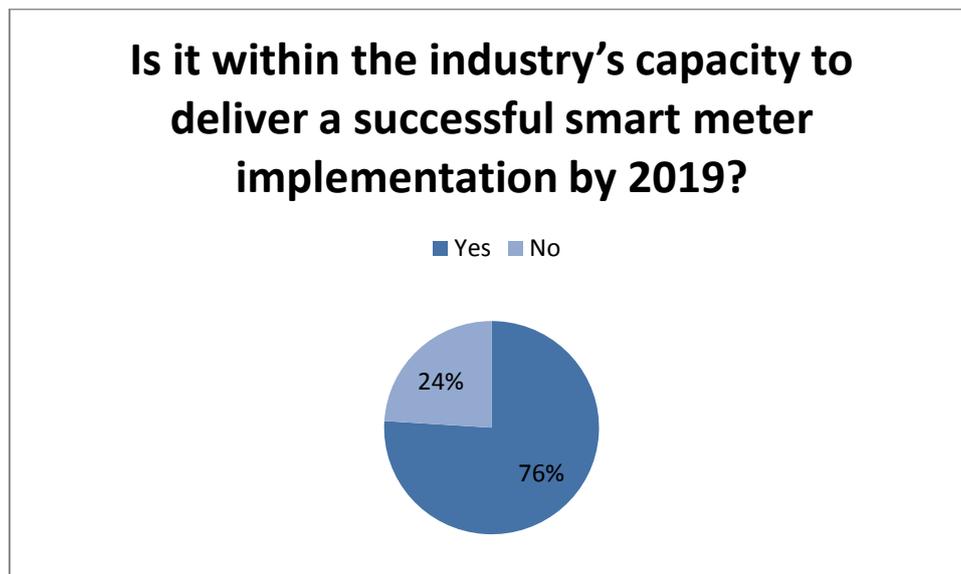
we saw in the workshop in learning from trials and from real deployments is a reassuring sign that we are trying to anticipate tomorrow's unfamiliar challenges.

- SMIP is complex, particular given the unique features of the GB supply chain. Those features put emphasis on the need to deal with competing priorities and multiple perspectives. But complexity is manageable, and the ability to simplify and distil challenges in order to move forward is an important factor that will underpin and act as an accelerant to change.
- Consensus across a wide stakeholder community is unlikely and a goal that cannot afford to take precedence over other needs – such as the need to commence roll-out and start learning from the process. The key to success will be in sensitive management of the tensions between stakeholder interests that are not always entirely aligned rather than attempting to resolve those tensions.
- Consumer engagement, communication and acceptance of smart meters will be a critical element of the perceived and actual success of the SMIP;
- It was recognised by participants that the commercial benefits of the smart world are dispersed throughout the value chain. However quantifying these benefits can be problematic making decision-making challenging; and misjudging this business value can have significant financial ramifications.

## Themes

### Execution - can we do it?

Participants confirmed that there is a strong will for SMIP to succeed and a belief that industry can deliver. However, waiting for a clean starting point where all uncertainty has been mitigated or a fully coherent route-map that sets out a fully articulated end state would be an unrealistic expectation.



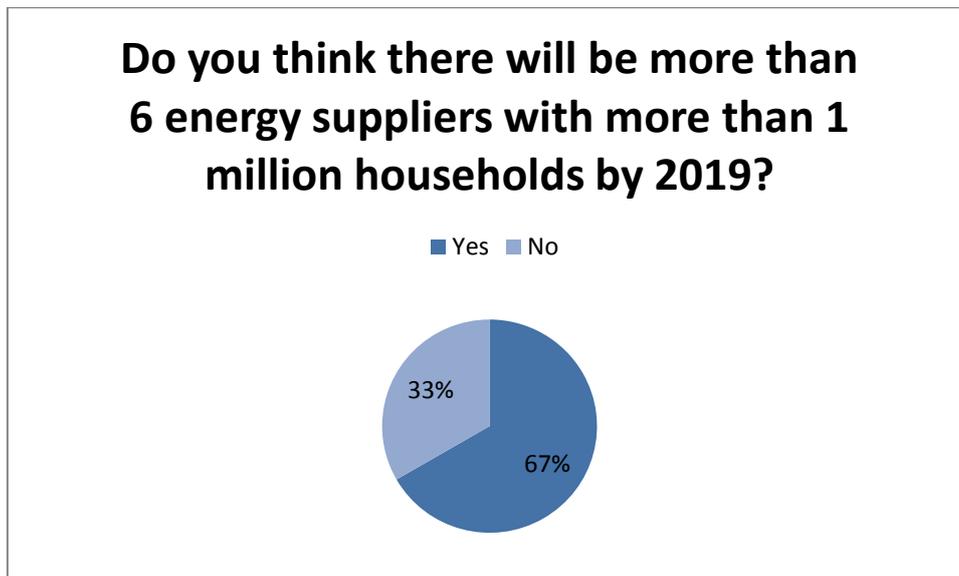
Views from the floor:

***"Do we have the capacity? Yes. Do we have a coherent plan?  
No. Lack of specificity is a problem."***

***"We're doing the right things. DECC is hammering through milestones. SMETS will be an inflection point ... then we'll really start."***

## **Increasingly favourable regulatory environment: the changing face of competition**

Smart metering changes the landscape of the utility sector, including changing the competitive aspect, particularly where supported by regulatory and retail market reform. Broadly, participants expect to see increased retail competition enabled by a new and more supportive regulatory framework but participants suggested that the pace of growth needs to be considered.



Views from the floor:

***"The Smarter Energy Markets direction will make a difference; it will be a supportive base"***

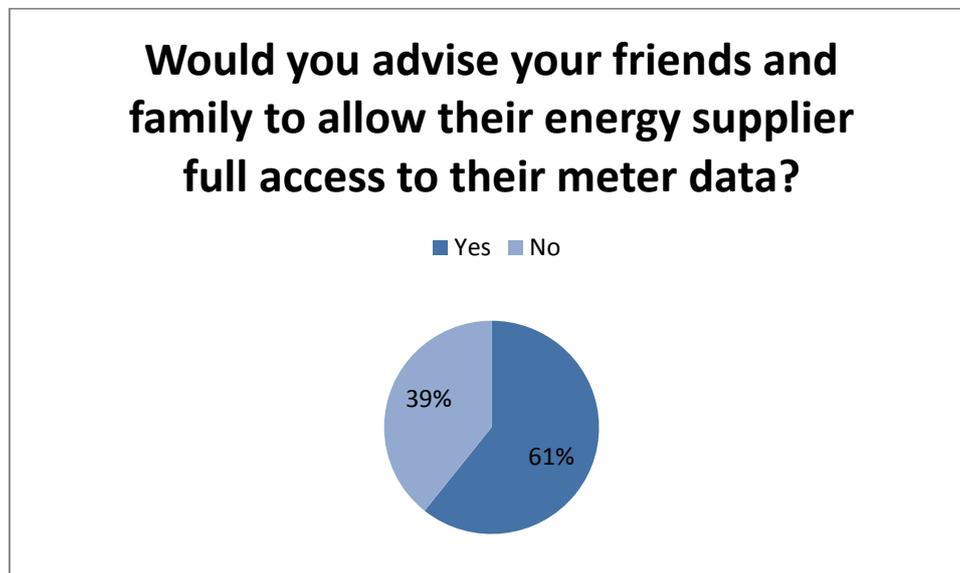
***"No-one (new entrants) has made it yet (to a customer base of 1million, outside of the major suppliers) and a few have gone to the wall along the way. We have 28,000 customers, but you start with one."***

The competitive landscape will be fundamentally changed by the developing regulatory environment, which is likely to undergo significant change through the same timeframe as SMIP. Those changes create the need for traditional players to defend their position, and also create opportunities for new disruptive players. In addition to the traditional competitive threat of small new entrant energy suppliers, new competitive threats shouldn't be underestimated.

*"Where will new entrants come from? It could be many areas: based on brand, based on trust, based on retail scale. Threats to existing utilities aren't just from new suppliers, but TelCo's, media companies, high street retailers and pseudo suppliers ... there's a model where traditional suppliers may not have relationships with consumers in the future – they might get disaggregated, and energy services intermediaries who offer fast supplier switching could take their place."*

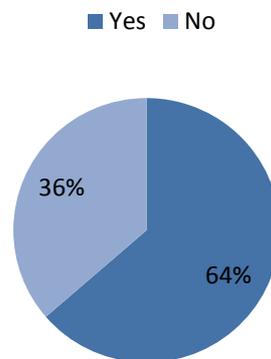
## **"Consumer" is an important part of the phrase "Consumer Engagement"**

As consumers, we're used to being buyers and traders of valued commodities – including our personal information. The question of privacy around the use of smart metering data was a prominent concern, but for the majority of workshop participants it was seen less of a barrier to sharing their data than "getting something in return".



Of those who answered "no" to the original question, we asked if their opinion changed if a reward, commensurate with the level of reward offered by schemes such as supermarket loyalty cards would change their mind. Almost two-thirds changed their advice based on reward alone:

## Would your advice be the same if the supplier gave some form of reward?



Delegates were hugely vocal on the point of personal control of data, and the power dynamic between consumer and energy supplier bought about by consumers having something of value to “trade” was a prominent theme:

*"It (data access) is about permission and how you ask the question: no-one asks if there's a need to share personal data associated with banking. It's accepted that data sharing is needed to make the system run."*

*"Would I give my supplier access to my smart metering data? If there's nothing in it for me, then certainly not."*

*"If my friends and family asked if they should give access to their data, I'd say 'don't give them access, sell them access'"*

Beyond simple points of principle – “to grant access, or not to grant access” delegates offered a variety of views on *why* individuals potentially would, and importantly, why they wouldn't choose to say yes:

*"The real questions about data access are 'why' and 'for what purpose'. It's not about what information per se, but it has to be a fair trade, and I have to feel there's something in it for me."*

*"Reluctance to share is about trust in the supplier to do the right thing, and confidence in the technology [particularly security and data privacy protections]."*

## It's time to talk benefits

Continuing the commercial theme, the need to evaluate, allocate, and prove who benefits from SMIP, and by how much was a prominent concern.

Delegates agreed that hard focus on the benefits case and benefits realisation for multiple potential beneficiaries is an area of SMIP that has to be carefully considered. The definition, extent and timing of

benefit realisation will inform the approach taken both by retailers and other participants in executing roll-out, and in the calls they make for adjustment to SMIP's approach.

The very particular features of the GB market, particularly distribution and retail separation, bring added complexity to both the calculation and the distribution of benefits.

Views from the floor:

***"Network benefits have to be passed through; system benefits have to be passed through."***

***"In our case, 90% of the benefits were operational and the equivalent to your DNO ...Only a relatively small take up on Critical Peak Pricing incentives – around 10-15% - was required to deal with our critical peak demands." (Jim Meadows, Pacific Gas & Electric, USA)***

***"The government will continue to mandate or encourage CHPS; EVs; microgen and the like, making volatility on the network more and more pronounced. But the smallest benefit in the SMIP impact assessment accrues to the DNOs. We're not planning for the future if we ignore the network companies and should be aware of the risk that without them, SMIP could become little more than a meter-to-cash deployment."***

## **We're on the cusp of the START...**

2012 is widely acknowledged as a critical year for GB in our journey to achieving full smart metering coverage across the nation. The speed of the GB roll-out is ambitious, the value of the preparation the sector has undertaken both centrally through the SMIP, and independently over the more dispersed and market-led approaches will be demonstrated in the coming years.

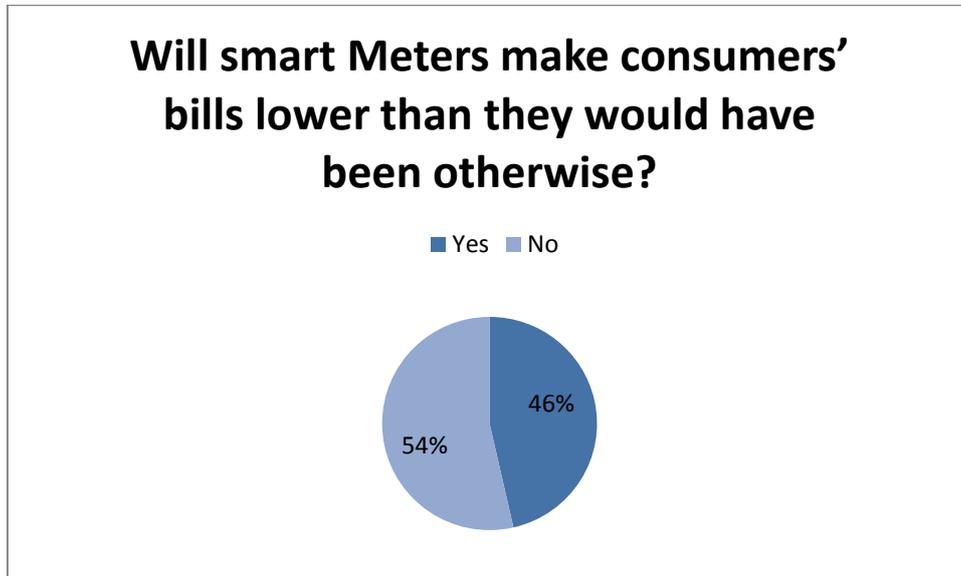
Workshop participants heard about both a broad pilot scheme that took place in Ireland – taking in consumer participation, technology trials, and pricing signals in its scope; and from large scale, largely complete, implementation in the USA.

2005 was Californian smart metering's equivalent of our 2012. The journey to their 9 million meters is impressive. Key lessons shared by Jim Meadows of PG&E, and Michael McKay of ESBI could help smooth the way in our own implementation:

- Do not underspecify, it could be a false economy. Under estimation of some functionality that was subsequently required in the US lead to re-budgeting and removal of some meters deployed in the early phase;
- Do not expect a single silver bullet from communications technologies but a combination of options, the experience in Ireland suggests shortcomings in a number of the options trialled;
- Do not underestimate the impact on back office systems and process. Having robust systems and processes that are "ready to receive" as meters are implemented is crucial to avoid drowning in a data tsunami.
- Be ready but don't expect perfection. Refinement will be required.
- Preparation is everything.

We are on the cusp of the start of a significant industry change, but smart meters are just one element. Beginning roll-out is an important milestone to pass, but views from participants in the workshop were conscious of smart meters being an enabler and a building block – and a gateway to benefits. They are the start of broader change, but as an end in themselves not necessarily sufficient to deliver benefit.

We asked, are smart meters alone enough to reduce, or offset increases in customer bills? Views were split, but the majority thought not:



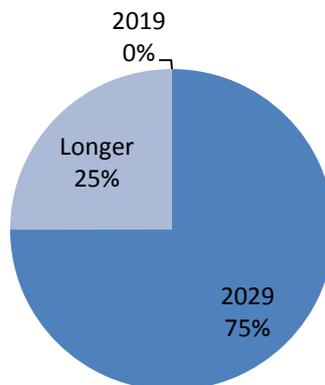
*"Only if the system is holistic enough: it has to include home automation and management."*

*"The smart meter is the enabler, it's just a hygiene factor. It won't change anything in its own right."*

**... but the end of the beginning and the beginning of the end won't be cleanly divided.**

The traditional representation of the smart metering roll-out is of an orderly, managed, transition from today's "dumb" metering estate to Smart, facilitated by ambitious roll-out targets, and building on fully implemented, available and operational communications and data processing services. Much emphasis has been given to the transition to Smart, but less attention has been paid to the systems, and processes that will be left behind; the importance of orderly close-down, and the financial impact on suppliers and others of running parallel systems, and projects.

## How long will “dumb” need to co-exist in the Smart World?



The resounding view from delegates was that when looking at business systems and processes particularly, the deployment of smart meters won't offer a clean break with the past. No participant in the workshop thought that we would be “fully” Smart by the end of the GB smart meter roll-out in 2019. We should expect co-existence of today's processes and systems for the best part of 2 decades, by which time, the next wave of changes will be underway. The certainty of the need to deal with subsequent and accelerating waves of change means focus on some key capabilities will become more prominent. Many examples were offered:

***“Strong Programme Management that looks to the end state of a project is essential and will be a Critical Success Factor. Planning is everything.”***

Looking to the end of the programme, and looking to leave the old world behind as early as economically and operationally practical was an uncontroversial view expressed by delegates. How that point is reached and the mechanisms that are most effective in getting there was the subject of a wider variety of opinions from allowing a natural slow transition, to more aggressive interventionist approaches:

***“The industry has a long history of leaving [centralised] legacy systems in place... it might need a legislative drive to mandate turn off.”***

***“Consumer rejection of [the installation of a] smart meter might occur to some extent, but flipping from financial incentives to financial disincentives [of continuing with dumb meters] might need to be considered.”***

***“Smearing the cost of continuing dumb operations across the population will eventually become disproportionate and unpalatable.”***

***“The recertification cycle is very likely to drive swap out ... unless there's objection from the customer ... but that's a long cycle.”***

## About Engage Consulting Limited

Engage is an expert, people-driven organisation valued for its delivery track record, integrity and independence. We only operate in the utilities industries and are a successful and highly respected specialist consultancy that has grown continually as a result of the quality of work delivered by high-calibre staff.

Engage has extensive utilities experience in market definition and regulation, strategy and planning, programme and project management, market advice and guidance, requirements definition, business assurance and implementation into complex environments.

We are subject matter experts with experience of building policy options as well as turning Government policy and legal codes into the practicality of operation via business process analysis, requirements analysis and subsequent systems and service delivery.

Engage consultants have been involved throughout the development and set-up of the GB electricity market, supporting both first and second generational change in operational utility markets. We have been involved from wholesale market opening, through non-domestic, domestic and metering competition. We also have extensive knowledge and experience of the GB gas market and its operation.

## Engage in Smart Metering & Smart Grids

Engage has played a key role within GB's smart initiatives since 2005 and continues to be heavily involved in Smart Metering and Smart Grids.

We have built an unrivalled expertise in smart metering to complement our wider energy market knowledge through our work across the supply chain. This has included work for the Energy Retail Association, the Energy Networks Association, the European Smart Metering Industry Group, the major Suppliers, metering manufacturers, telecommunications companies, system integrators and technology providers as well as providing advice on, and to, international markets.

We established an early operational framework for GB smart metering as part of our thought-leading work for the Energy Retail Association. Engage delivered smart grid network requirements for smart metering for representatives of the network companies delivering Smart Metering System Requirements and Use Case definitions with respect to the functionality required; Data Traffic Analysis; Security and Privacy requirements; and cost benefit analysis.

For more information about Engage Consulting visit: [www.engage-consulting.co.uk](http://www.engage-consulting.co.uk) or contact:

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