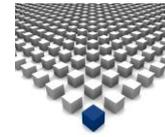


# Engage's Smart Metering Credentials



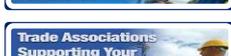
## Our Smart Background

Engage are established expert advisors. Our clients trust us to advise them on strategic, operational, project and programme roles focusing on general market operations, settlement arrangements, revenue and margin assurance, industry design, regulation, smart metering and smart grids.

We have played a key role within Great Britain's (GB's) smart initiatives since 2005. We have built an unrivalled proficient expertise in the smart energy market to complement our wider energy market knowledge through our work across the supply chain. This has included work for trade associations, energy suppliers, network companies, central market organisations, regulators, government, agents, meter manufacturers and smart technology and service providers. Engage also has global experience in smart metering and smart grids, with clients from other parts of Europe, North America, Asia and Australia.

Our industry leading smart metering and smart grids expertise allows us to assist clients in achieving business readiness for the smart world, delivering confidence in the solution along with value for money. We are at the heart of national developments and have an in-depth understanding of global smart developments, standards, technology and commercial opportunities. We consistently deliver robust and perceptive business knowledge and insight to our clients enabling them to develop business cases, strategies and operational processes to support market penetration, market growth and differentiation in the smart energy world.

## Summary of our Smart Metering Work

-  **Trade Associations Supporting Your Profession** We work with a trade association, on the Supplier Requirements for Smart Metering (SRSM) Project, in readiness for the roll out of smart meters in GB.
-  We are supporting the Government in preparing technical documentation to support the Smart Meters Equipment Technical Specifications.
-  We are providing smart meter engineering expertise to the Government on technical solutions, smart meter devices & analysing HAN options using 868 RF.
-  We are providing smart metering asset technical support to a major supplier's Smart Metering Programme.
-  Advising a major supplier on strategic reforms that will impact it until 2020 (Foundation meters, SMIP mass rollout and Ofgem Smarter Markets Reforms).
-  Managed development of interim operating model for Foundation stage for the Government's Smart Meters for Foundation, Planning & Readiness programme.
-  Engage led the Foundation testing team in the development of the Government's Smart Metering Programme's test strategy.
-  Evaluated WAN & HAN technology options for a Networks Company; Assessed smart metering technologies (WAN, HAN, meters, IHDs) for an Energy Supplier.
-  **Trade Associations Supporting Your Profession** We delivered the smart grid project for a trade association, capturing their smart grid network requirements and Use Cases for smart metering.
-  **Trade Associations Supporting Your Profession** Developed 'Metering Standards Resource' for a trade association, used to support the development of Mandate M/441 from the European Commission.

## Smart Metering Credentials

### Supplier Requirements, Industry Developments and Thought Leadership

Engage has been managing the industry GB smart metering programme on behalf of a trade association for the last 5 years, focussing on meter specifications, interoperability, consumer behaviour, roll out options, in-home displays, communications, and interaction with in-home devices. Engage also represents the trade association and its members on the Electricity Networks Strategy Group (ENSG). Engage has facilitated joint workshops between suppliers and network operators on demand response and demand side management, both key elements to the smart grid of the future. Some of the projects delivered in these areas include:

- Design of options for new market functions to support smart metering, and ensuring consistent and compatible documentation of a range of governance and commercial elements to support smart metering in GB.
- Formulation of policy on the [operational framework](#) for smart metering as well as the provision of policy responses to Government consultations.
- Provided leading role in the [Supplier Requirements for Smart Metering](#) (SRSM) project which has been at the heart of smart metering developments within GB.
- Analysis of how micro-generation may be facilitated with smart metering, whilst enabling the full claim of Renewable Obligations Certificates.
- Development work for smart metering WAN/local communication/HAN options.
- Definition and production of Use Cases, their methodology and development work to support smart metering.

### GB Government's Smart Metering Implementation Programme

- **Smart Meter Engineering:** Engage is currently providing smart meter engineering support to the Government, to ensure that the smart metering equipment specifications are developed and notified to the EU; to develop the Companion Specification; and to support the development of the assurance and certification regime and the testing and trialling as appropriate. The work also involves working closely with key energy industry stakeholders to consult on technical solutions, providing subject matter expertise on Smart Meter devices, analysing options for HAN using 868 radio frequency and setting out options and proposals for 868 development.
- **Smart Meters Equipment Technical Specifications (SMETS):** Engage is currently providing support to the Government, as part of the wider team preparing technical documentation to support the Smart Meters Equipment Technical Specifications.
- **Smart Meters for Foundation, Planning and Readiness:** Engage has provided support to the Government's Smart Meters for Foundation, Planning and Readiness programme, managing the development of the interim operating model for Foundation stage (FIOM) of the Smart Metering Programme. Engage developed the process model, the set of business processes and industry system changes required to support Ofgem's Effective Switching Licence obligations on suppliers prior to mass rollout of smart meters in 2014.
- **Smart Meters for Foundation, Testing and Trialling:** Engage has provided support to the Government's Smart Meters for Foundation, Testing and Trialling Programme leading the Foundation testing team in the development of the Smart Metering

Programme's test strategy. The strategy covered: the individual testing of the Communication Service Providers, Data Service Provider and DCC Licensee; integration testing of the full DCC Service; proving of the end to end smart market arrangements; proving the ability of market participants to successfully operate the smart arrangements and with the DCC service.

- **Programme management office (PMO) of Smart Metering Implementation Programme:** Engage has provided PMO support to the Government's Smart Metering Roll-out Programme. The PMO support covered 13 design groups as follows: Extended Statement of Design Requirements, In-home Displays, Application Layer, Pre-Payment Meters, Gas Meter Variant, Gas Meter Battery, Difficult Meter Positions, Tariffs, Use Cases, Architecture, Home Area Network, Installation & Maintenance and Micro-generation. The work also included the management of the review/proofing process of documentation, issue management and resolution in addition to progress reporting covering all design groups.

### Ireland's Smart Metering Programme

- **Smart Metering Technical Support:** Engage supported a Network Operator's strategic development and involvement in the Ireland Smart Metering Programme, and delivered a detailed technical report on the capabilities of Power Line Carrier (PLC) technology to deliver a wide area network (WAN) for the provision of smart metering to gas consumers in Ireland; and the radio technology used to link gas meters with electricity smart meters used as data hubs at the gas consumers' site. In order to determine the technology options for both WAN and HAN, Engage prepared and held a requirements gathering workshop with the Network Operator, where the output from the workshop identified the extended requirements which underpin this report.
- **Smart Metering Technology Assessment:** Engage provided an assessment of all relevant smart metering technologies for GB and Irish markets (including WAN, HAN, meters and IHDs) for an energy company. This covered key factors and standards for technology selection in GB.
- **Smart Meter Roll-out Evaluation:** Engage delivered a workshop and report that evaluated areas for smart metering roll-out (including analysis of the various options) for an energy company.
- **Customer Behaviour:** Engage was commissioned by an organisation in Ireland to produce a research paper into the behavioural impacts of demand-side stimuli during international smart meter trials, particularly where these stimuli were used in combination with time-varying tariffs. The report collated, benchmarked and published the conclusions of the various methodologies and technologies that were used in international smart metering trials to measure customer behaviour impact. The stimuli covered included: IHDs; Customer consumption information and profiles, both web-based and printed reports; Plug-in displays on individual appliances; Critical Peak Pricing Alerts; and Pre-Payment metering. The report assisted the client in the design of their smart meter trials/pilots and ensured robust design and the identification of the most effective ways to influence customer response.

### GB Suppliers Smart Metering Programmes

- Engage is currently providing smart meter technical expertise for a major supplier, as a smart metering asset technical lead in their Smart Metering Programme.

- We are providing advice and guidance on all the strategic reforms that will impact a major supplier between now and 2020, including Foundation meters, SMIP mass rollout and Ofgem Smarter Markets Reforms.

## European Standards Development

Engage has carried out projects for a European Trade Organisation, which includes:

- Developing a 'Metering Standards Resource' used to progress the development of EU standards in the area of smart metering. This involved producing a country profile for 30 European countries that covered electricity, gas, water and heat metering, with details of smart metering developments for each sector and country and compiling a comprehensive database of all existing standards that could be relevant for smart meters on an international, European and national level for electricity, gas, water and heat.
- Used the 'Metering Standards Resource' (above) to undertake further work to support the development of [Mandate M/441](#), including support to the Additional Functionality Group undertaking this work for the ESOs.
- Providing support to the [Smart Metering Coordination Group](#) in developing the work programme to address Mandate M/441.
- Provided support to [Expert Group 2](#) that included considering Regulatory recommendations for data safety, data handling and data protection for the [Smart Grids Task Force](#). We also supported the development of the draft mandate to be issued by the European Commission to the ESOs to develop relevant smart grid standards.

Engage has, through our work for a trade association, been monitoring and participating in the M/441 process. This includes membership of the relevant British Standards Institution (BSI) committees mirroring the European Standards Bodies committees and forming part of the British delegation to full plenary and working group sessions of the European Gas, Electricity and Communications technical committees (CENELEC TC13, CEN TC237 and CEN TC294). On a wider perspective, Engage has supported new interoperability standards initiatives and since 2009 we have represented a trade association as a stakeholder in the standards based Open Meter project. Our personnel have also represented BSI at European Standards Groups sessions on smart grids standards activities.

## Network Requirements and Smart Grids

We recently delivered a [smart grid project for a trade association](#), capturing their smart grid network requirements and Use Cases for smart metering. We ensured that the trade association's specific business needs and concerns were addressed and positioned them to influence government and Ofgem developments. We managed the multi-stakeholder work-streams to deliver: Smart Metering System Requirements and Use Case definitions specifically with respect to the functionality required; Data Traffic Analysis; Security and Privacy requirements; and corresponding cost benefit analysis. Recently, we have supported the trade association in delivering a privacy impact assessment in relation to their data requirements from smart meters.

## Business Case & Cost Benefit Analysis, Strategic Advice, Research & Analysis

- **Electricity Company:** development of a robust business case and cost benefit analysis for the roll-out of smart metering on an island.

- **GB metering service companies:** undertook opportunity analysis evaluation for a number of parties which defined the potential market models for smart metering and their implications for these parties and recommended specific areas of opportunity that each party could consider pursuing in the new smart metering world in the UK.
- **Communications companies and major system integrators:** provided strategy and advice for companies interested in the proposed GB smart metering market.
- **Major Energy Supplier:** provided strategic advice into energy smart metering programme in relation to smart metering and smart grid roll-out. This involved delivering several workshops for staff to establish strategy going forwards and help form its responses to Ofgem.
- **Major European utility:** we were commissioned to deliver a pan-European smart metering best practice reference document. It focused on “what is good for the customer”, drawing on pan-European experiences. With the appropriate multi-stakeholder involvement, gravitas and impetus this consolidation of good practice is targeted to be a reference document for use across Europe.
- **Leading communications and security solutions company:** supported their smart metering GB Prospectus response (including analysis) and delivered impact analysis of their short/long term business plan risks. The work also included a service review of expenditure, creation of a costs and income model for the Data Communications Company requirements in addition to support in response to smart metering trials tenders.
- **Global Technology Company:** Completed research on several technology areas in the UK, France, Germany and Italy. This included Solar PV, Storage batteries, Electric Vehicles, Demand Response, Home Energy Management Systems, Time of Use Tariffs and Virtual Power Plants. The research covered market size, future growth, opportunities, government backed schemes, risks and issues and pilot projects.
- **Global Technology and Communication Solutions Company:** Produced a report that provided an overview of the role of the DCC and the companies that are currently showing an interest in bidding for communications contracts within the UK.
- **Global Construction Group:** Provided support to a joint venture tender response to provide smart metering services on behalf of Onstream. This included overview of the smart metering programme; overview of trials and findings; Guaranteed Standards of Service; Smart Metering Installation Code of Practice; Customer Profiling insight and potential volumes; Supplier expectations during an installation visit and Customer Journey.
- **Global Technology Companies:** Provided market intelligence reports to companies new to the GB market. These reports included: an overview of the GB market landscape; the identification of market participants; the identification of opportunities, risks and potential partners; and a technical description of the GB market.
- **Metering technology provider:** support of smart metering standards activities in relation to the company’s business model in addition to engagement with various stakeholders at UK and European level.
- **Major Energy Supplier:** support in interpretation of GB smart metering proposals including high level “game plan” illustrations and knowledge transfer to staff.

- **Financing Company:** Provided support in preparing their business case to finance the UK smart metering market.
- **Major Japanese Technology Provider:** provided strategic advice.
- **Asian utility:** undertook research into smart metering strategy of European utilities.
- **Leading UK smart metering organisation:** developed and delivered an independent smart metering market penetration research survey in relation to data services and communications.
- **An Asian finance provider and investment management company:** delivery of an introductory smart metering report.
- **A major UK telecommunications infrastructure provider:** undertaken Use Case analysis, requirements mapping and scenario planning.
- **Major Technology and Services Company:** Delivered a Smart Metering workshop to help assess the potential for the company's suite of products and services.
- **Data Management and Governance company:** Delivered a workshop to establish approach to the UK Smart Metering arrangements.

Our global detailed knowledge and expertise in smart metering has been used to implement and maintain the [International Google Smart Metering Map](#).

## Water

Our energy smart metering expertise has allowed us to transfer some of these skills into the water sector. Our work has included:

- **The Authority:** providing technical advice in support of aligning energy and water smart metering opportunities (including data traffic analysis and high level costs assessment for the water industry).
- **Intelligent Metering Initiative for the UK Water Industry – UK Agency:** Investigated and reviewing the opportunities, the benefits and the logistics of how the Energy and Water sector developments could align.
- **UK Water Industry Research Organisation:** delivered a cost benefit analysis of potential development scenarios for intelligent metering.