Smart Meter Data
Where’s the value?

Summary
Big Data is all around us, it’s the current hot topic, impacting all areas of business. However, the concept of big data is not new to the essential industries – water, energy, and transport – which have been collecting, managing and acting on vast quantities of data for decades. To these industries, an already vast data set has been steadily increasing with the introduction of technologies such as smart metering, smart grids, and mobile devices.

Linking this data together and deriving meaning from the information is a key step to achieving business benefits. The more connected it is, the more related it gets, the more value can be derived.

This paper highlights how energy suppliers can begin to create real value from the increased data streams that will be available.
Smart meter data – where’s the value?

With the mandated rollout of smart metering in the UK, energy suppliers have been presented with a huge programme of work that presents a number of key challenges. Not only do energy suppliers need to procure and rollout approximately 53 million smart meters and supporting devices (involving visits to over 30 million households and businesses), but they also need to carry out a business and systems change programme that touches, and potentially changes, nearly every part of their existing business.

The introduction of smart metering will not only change the technical nature of the traditional meter that sits in our homes, but it will also change the way we as customers behave, and also the way in which the energy supplier can respond to that customer behaviour.

The main reason behind this potential change in our behaviour is down to the information that will be at our fingertips and the frequency with which we will receive the information. It is information in our day to day lives that empowers us to make decisions and change our behaviours.

We need to remember that the information we use daily is created from raw data. It’s only when we transform this data into information that it really becomes of use. Think about a typical day to day example such as watching the weather forecast. What we see is a summary view of a variety of streams of data that is derived from many variables and captured in many devices (atmospheric pressure, temperature, wind speed captured from satellite photographs, weather balloons, computer modelling, etc.)

We can use this comparison to think about smart metering. A typical smart meter can produce many streams of data including: Active Power, Reactive Power, Meter Event Flags and Power Quality to name a few. Whilst all this data may be of use to one party in the value chain at some point in time, it certainly is not required for everyone. In fact, it may not become useful until energy suppliers and other parties have the required business processes and systems in place that can process the vast volumes and turn this data into useful information. But which data do we focus on first?

Energy suppliers, Distribution Network Operators and other parties need to really look at where the value is in this new data along with their ability to process this data and create information from it. The scope of this thinking should include:

- How to validate the data to ensure it is fit for purpose?
- When and how to estimate for data that fails validation (using algorithms to update the faulty data for further use in the value chain)?
- How to enrich the data with other information that is available to maximise its usefulness?
- When to ignore data when there is no point in processing data of no value or to react when it is duplicated?
- What ability to react to issues on the network is required (power outages, meter tampering, asset faults)?
How should this data be integrated with other back office systems (Asset Management, SCADA, GIS)?

Business and system change programmes take time to deliver, and even when transformation occurs, further phases are typically required to learn lessons and change habits. Long term plans are needed.

The smart metering data model needs to be assessed, and the value of these new streams of data should be calculated and fed into smart metering strategies. This model may look very different in the early stages of implementation than it does in later stages as companies become better at dealing with the volume and complexity of the data and as the organisation, its people and its systems evolve.

By really understanding the value and potential in the new data for your business, you will be in the best position to realise the benefits of smart metering.