

# Smart Metering



## The Case for Mobile Data (GPRS) as the Primary Communication Method

### What Smart Metering means for India?

Smart Metering represents an enormous opportunity to transform how India uses, consumes and thinks about energy – creating choices and creating better value, while also informing consumers about their use of energy and its impact on the environment.

Today, India has one of the highest transmission & distribution (T&D) losses in the world – to the tune of 27% and for some states it goes even beyond 50% (Source: CEA, November 2012). One of the primary reasons for such high T&D losses is lack of proper accounting of electricity consumption at various stages till it reaches end consumers.

With Smart Metering some of the private distribution companies in the country already have managed to bring down T&D losses under 10% in their respective regions of

operations. Also, many of the state utilities have started implementing smart metering under R-APDRP program for bringing down T&D losses under 15%.

### Smart Metering Communication Requirements

The communication requirements for the wide area smart metering networking technology include the following:

- High-availability two-way external communications
- Resilient and resistant to external interference
- No significant interference with other devices in home, or exceed electro-sensitivity standards
- Security of all communications between a Metering System and Authorised Party

- Supported for life of meter
- Low average power consumption
- 'Future proofed' communications that have a clear potential upgrade path
- Sufficient response times for meter reading, events and control requirements

### Why GPRS provides the best choice for smart metering communication connectivity?

GPRS provides a number of key advantages when compared to other communications technologies such as satellite, radio and power line communications, making it the best choice for smart metering technology. In fact, one of the leading Indian private sector utilities achieves 99%+ successful meter readings every month using Vodafone's communication services.

The advantages of GPRS include:

#### 1. Proven networking technology

GPRS is the most widely utilised, established and available M2M networking technology. For example, already multi-million end connections use M2M services over Vodafone's GPRS network across the world.

- Proven reliability and high service levels have already been demonstrated by Vodafone in large-scale roll-outs in India, Europe, Africa and New Zealand
- Vodafone provides 24x7x365 optimal support for GPRS
- Current available reach and coverage is unmatched by other technologies
- GPRS technology is provided by multiple cellular operators. Utilising GPRS promotes a competitive reason for suppliers to maintain and potentially improve the service offered

#### 2. Low cost solution

The high adoption rate of GPRS technologies using open, non-proprietary technical standards has led to increased competition and economies of scale. This naturally leads to competitive M2M service tariffs and M2M module cost.

#### 3. Fit-for-purpose infrastructure

GPRS is a completely secure end-to-end WAN connection which is already used in critical, emergency services and banking related applications. For example, Vodafone provides private APN solution with MPLS connectivity for securely transmitting data from remote devices such as electricity meters to customer data centers.

- Competing M2M networking technologies such as UHF and BPL will not only have to be built, but will need to be dimensioned and balanced to handle these demands.
- The Vodafone GPRS network already has the capacity to handle the anticipated volume and resource demands of smart metering.
- GPRS is encrypted at a network layer with SIM-based authentication. It also has a proven track record of security with deployment of tens of millions of terminals/handsets.

#### 4. Future proof roadmap

- GPRS delivers the bandwidth required for smart metering with a clear upgrade path for higher bandwidth applications.
- Vodafone has dedicated focus on M2M and is fully committed to the provision of smart metering services.



### Concluding Remarks

In order to achieve smart metering goals, while also ensuring that overall investments do not become prohibitive, it is vital that the communications component of the smart metering programme not only operates reliably and efficiently, but also offers a low cost management and roll-out option that will not detract from future profit margins. Vodafone provides best-in-class communication services across the world including that for Smart Metering. Being a leader in M2M arena, Vodafone strongly believes that GPRS deployed in conjunction with complementary infill solutions already in the market is the only truly viable and credible communications solution available for Smart Metering.