

# Global Smart Grid

## Development Issues Report

### Ed 1, 2011

#### Market Intelligence

In recent years the smart grid has gained a lot of column inches as the panacea for problems with the current electric grid system. A grid system designed for the one-way flow of information and electricity from power plants to consumers. Where consumers are billed for electricity usage based on estimates of consumption regardless that actual usage and according to time of day.

This grid is not designed for the integration of large scale intermittent renewable capacity, or for small-scale distributed renewable capacity such as rooftop solar panels and small scale wind turbines. It also does not penalise electricity usage at peak demand times, which would reduce the need for new build 'peaking' power plants. Therefore there is a demand for a new grid system to meet the demands of the 21<sup>st</sup> century.

Smart grid deployment has focused on the use of smart meters and associated communications network in most countries with the notable exception of China. Leading players such as Landis+Gyr (now owned by Toshiba) , Elster and Sensus have formed strategic agreements with other players in the smart grid, and to some extent, almost all of the major players are connected through strategic agreements. Furthermore many of these leading smart meter manufacturers produce smart meters for water and gas or other smart products as well as smart electric meters. Demand for smart water meters is expected to be high in countries and regions experiencing water stress such as parts of the Middle East, California etc.

Large companies such as GE and Cisco have entered the space, but no company to date has a fully integrated product. In the US no one player appears to have an early dominance on the local market. This is less of the case overseas, for example in China where GE and IBM are earlier runners in the game. But, as with the renewable sector, China is likely to favour local suppliers and manufacturers working in collaboration with local counterparts. Moreover, like with the renewable sector, Korean and Japanese manufacturers are developing local and overseas projects to gain a foothold on the smart grid market, with is estimated to be worth more than USD100 billion by 2020.

## Highlights

A major under looked barrier to smart grid deployment is smart grid security. Studies on the smart meters deployed have found that few have encryption software and can easily be corrupted. Creating a large market for companies involved in the cybersecurity business, notably companies involved in security for the defence sector such as Lockheed Martin and Boeing.

Despite this and other barriers to deployment the installation of smart grids is likely. Not only for the reasons above, but also for the rapid identification of faults in the grid system and rapid repair through the two-way flow of information. Currently power cuts in the grid system take time to repair and are extremely costly for businesses. Therefore, the large costs of implementation of such a system would be outweighed by the long-term cost savings.

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