

Smart Meters

Up-to-date information about energy and water usage can be used to cut waste and improve efficiency. Households and businesses can use connected energy and water meters to better manage their usage, while helping utilities to balance supply and demand, and identify leaks and faults.

Although energy meters are generally connected to the grid, smart water meters tend to be battery-operated, so they need to be power efficient. Moreover, in many countries, water meters are located outside and/or underground, so they cannot use a building's Wi-Fi network for connectivity. Low power wide area cellular technologies can overcome these challenges to deliver smart metering.

Why do we need smart meters?



Source: Sierra Wireless

The Challenge

The pandemic and energy crisis have hastened the need to automate information gathering and business operations to ensure efficiency and continuity of services. Connected meters are essential to give consumers peace of mind and to enable utilities to deliver services and handle billing without the need for on-site visits.

The Solution

Globally, there are now almost 300 cellular low power wide area networks (LPWAN) offering a less expensive and a less complex means of connecting smart meters than earlier technologies. By extending the battery life of meters, LPWA can enable a utility to increase the time between servicing from 2-3 years to 10-15 years, dramatically improving the return on investment. As smart meters tend to communicate comparatively small (100s of bytes, at maximum) payloads of metering data, power-efficient, low bandwidth network technologies are particularly well suited to this application.

Features and benefits

Cellular LWPAN technologies (LTE-M & NB-IoT) offer:

- > Better connectivity and coverage especially in hard-to-reach places in buildings
- > Battery powered with up to 10 years lifetime (usage dependent)
- > Ideal for small data messages and fully scalable
- > Reliable and secure networks operating in licenced spectrum
- > Nationwide service from established blue-chip companies
- > International standards-based solution available in 200+ countries
- > Future-proof for the lifetime of the meter - part of the 5G evolution
- > Ability to change service provider as required, unlike proprietary solutions
- > Over the air (OTA) provisioning available

Examples

Telia

To enable the electrical grid to adapt better to sustainable energy sources, EON selected Telia's NB-IoT network to connect smart meters in one million homes in Sweden. Telia has also signed an agreement with ONE Nordic and Ellevio to connect close to one million of their customers with the same technology.

Bharti Airtel

Has teamed up with Secure Meters to deploy 1.3 million smart meters in the Indian state of Bihar. The smart meters will use Airtel's NB-IoT services.

Telstra

Has announced a AUS\$100 million deal with utility services provider Intellihub to provide up to 4.1 million cellular IoT SIMs for smart energy meters in Australia over the next 10 years. The meters will be connected to Telstra's NB-IoT network.

Sony Altair says

Smart gas meters in Japan's major cities are utilising its CAT-1 chipset, while its dual-mode CAT-M & NB-IoT chipset will provide connectivity for the next-generation of liquified petroleum (LP) gas meters being deployed outside of major cities.