

Chairman's Column

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The technologies that can enable the smarter utilisation of energy within homes and buildings has been around for a long time. AlertMe (now Hive) started life in 2006 and its biggest competitor Nest was launched in 2011. The Internet of Things has also been developing rapidly throughout this decade, largely due to the convergence of multiple technologies, including ubiquitous wireless communication, real-time analytics, AI/machine learning, and embedded systems.

Despite these significant technical advances, Smart Energy Technologies have yet to benefit from mass market adoption.

It is my belief that a perfect storm of change drivers will come together in the UK this year and that as a result, the **Internet of Energy** will truly come of age. Many people have suggested definitions for **IoE**, but my favourite is the one offered by IDC⁽¹⁾ and Geo:

"The Internet of Energy (IoE) is a specialist subset of the Internet of Things. The IoE is composed of installed energy devices or appliances (typically supplied and installed by specialists) such as smart meters, solar installations, energy storage systems, and residential PEV charging infrastructure. Other IoE objects include high consumption appliances such as heating and cooling, hot water heating, and fixtures and fittings that come with a house. IoE devices or appliances will often have several users or owners during their life".

2018 –
The year that
the **Internet of
Energy** comes
of age?

Many change drivers will affect the pace at which the **Internet of Energy** matures; however, I believe that there are four areas which will significantly accelerate the development of an **IoE** within the UK, namely:

The market penetration of voice-controlled digital assistants

The volume roll-out of "Full-Fat" Smart Metering Rapidly maturing core Energy Technologies

Government and Energy Regulator Initiatives that will drive investment and innovation in Smart Energy Technologies

Voice-controlled digital assistants became mainstream in 2017 and will provide consumers with a customer friendly gateway to "Connected Homes" in 2018.

• voice-controlled digital assistants flew off the shelves over Christmas and according to data from independent technology analysis company Canalis, they are now the best-selling consumer gadget. 35 million were shipped in 2017 and that number is expected to top 56 million this year. Amazon Echo is the dominant market leader with a 70% market share, followed by Google Home with 24% and Apple, Samsung and others trying hard to catch-up.

• Recent research in North America indicates that consumers in smart speaker households are 3.3

times as likely to use home automation hubs and 2.2 times more likely to use smart thermostats.

Full-Fat Smart Metering (i.e. DCC connected SMETS 2 Metering Infrastructure) roll-out will accelerate throughout 2018 and is expected to be proceeding at the rate of a million meter installs a month by the end of the year. This will provide the foundations for Smart Homes.

- The DCC will provide two-way communications to each home
- In Home Displays (IHDs) will provide visible energy consumption information/signals to householders
- Consumer Access Devices (CADs) can connect to the Home Area Networks (HANs) which are being installed to support the operation of Smart Meters and will enable access to near real time energy consumption data.

Energy Technologies will continue to mature at pace and their price will drop further during 2018. Key technologies include:

- Residential Battery Storage
- Residential Solar PV
- Residential Windmills
- LED/Wireless Lighting
- Home Energy Management Systems (HEMS)
- Hybrid Heating Systems

• Electric Vehicles (EVs) and Vehicle to Grid (V2G)

The Government and the Energy Regulator have launched major initiatives which will start to have significant impacts on this sector during 2018.

• The BEIS Industrial Strategy moves in to Implementation in 2018 and includes four 'Grand Challenges' that business, academia, civil society and the Government will work together on under the leadership of 'Business Champions'. Two of these 'Grand Challenges' are likely to accelerate the development of Smart Technologies:

- Growing the AI & Data-Driven Economy
- Clean Growth (which includes the Smart Systems & Flexibility Plan)

• Ofgem will introduce Half Hourly Settlement for Residential & SME customers. This will facilitate the introduction of Time of Use Tariffs and other innovative energy products that will lead to the development of new and disruptive business models

I am convinced that the synergy generated by the interaction of the four-change drivers described above will result in the **Internet of Energy** coming of age and starting to provide the vendors of smart energy technologies with sustainable profit streams.

(1) IDC and GEO White Paper The Internet of Energy: Enabling Residential Demand Management