

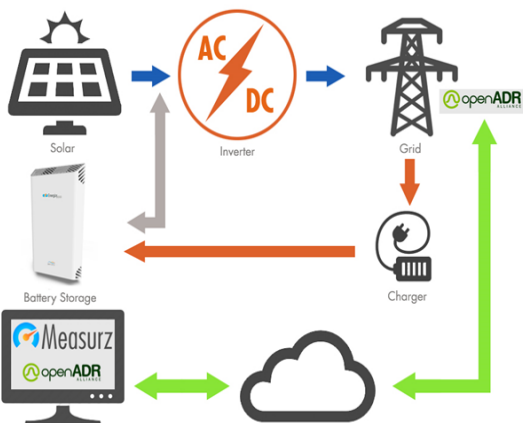
Letter from America: Who will capture value behind the meter?

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In early September, Energy Post published an extensive interview with Jan Vrins, Managing Director at energy consultancy Navigant, who explained the gaining momentum of behind-the-meter applications.

Vrins believes that: “Over the next 10 years, distributed energy resources will grow eight times faster than net central station generation globally.” He described the rapid changes taking place in the energy market, focusing on the “Energy Cloud” – a “network of networks” which connects everything to everything else (see Figure 1).

Figure 1: The energy cloud model



Source: JLM Energy

According to Vrins, the Energy Cloud “will change our entire energy system, how it’s operated, who produces, and who consumes”. He estimates that it will create an additional \$1.1tn (£84bn) in value by 2030 globally.

As the global electricity system is becoming more decentralised and more renewable, Vrins worries, however, that, “there seems insufficient awareness of how the system will change in its totality. Renewable energy is partly centralised generation. But the system will move to decentralisation: distribution-level generation and a whole range of products and services behind-the-meter. The value will move downstream.”

In the case of electric vehicles (EVs), Vrins points out, “If all cars in the UK were EVs, together they will have enough capacity to supply the UK, France and Germany with electricity. It’s an enormous capacity for storage and even for generation. If I drive home from work with my EV, my battery may

still be 90% full. Most EV owners will only need to charge once a week.”

He is, of course, not the first to have discovered the enormous potential and perils of millions of EVs that are likely to be added to the distribution networks around the world over the next decade or two. Vrins sees opportunities for what he calls vehicle-to-home integration: “And this becomes even more interesting when you combine it with home energy management systems, including rooftop solar with storage, and demand response systems.”

Vrins, like everyone else looking at behind-the-meter space, is keen on the potential role of intermediaries, aggregators and enablers – he calls them “orchestrators” – and says this will be “the fastest growing and most profitable business model category across the utility value chain.”

As is generally agreed, Vrins notes that there will still be a role for centralised assets; the key is to integrate the centralised with decentralised assets in such a way that leads to optimal outcomes. This is particularly true in the developed economies where the existing centralised infrastructure, the grid, is functioning well and has already been paid for.

Vrins believes that the orchestrator role can be best performed by vertically-integrated utility companies in the US, although in Europe this role could be played by distribution system operators (DSOs), who would also have to be allowed to be active in generation and storage.

Vrins says that, “[competition] would take place in the products and services offered on the platforms”, adding, “You would get a different kind of unbundling: horizontal instead of vertical.” The strict unbundling rules in the EU, however, could hamper the development of an efficient “Energy Cloud” system in Europe, according to Vrins.

Vrins observes that, over time, “distributed energy resources are becoming baseload and central generation is becoming backup” but says that is not how many are looking at it, nor do many “recognize and capture the value of ‘non-wire’ solutions – local flexibility solutions.”

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