

The queue for the grid: why behind-the-meter is becoming strategic

12 June 2026, 13:29

Pieter Jan Jordaens
Paul Peeters

Grid connection takes 5 to 7 years. Microgrids and behind-the-meter are no longer a stopgap solution.

You apply for a grid connection for your new production site or data centre. The waiting time? Five to seven years at best. Transformers have been sold out until 2030. Gas turbines have a lead time of five years or more. Meanwhile, your project has ground to a halt. Waiting for the grid wastes your time; circumventing it gives you an edge. Behind-the-meter systems and microgrids are evolving from a stopgap solution into a strategic choice for companies looking to invest in renewable energy.

An infrastructure problem that won’t sort itself out

The AI boom created a demand for energy that grid infrastructure has not kept pace with. Software and chips are advancing at an exponential rate, but grid infrastructure is not. The result is a queue that is getting longer every year. The problem also lies in the system. Grid connections currently

operate on a first-come, first-served basis. Speculative projects are tying up capacity, while mature investment projects with planning permission and funding are left waiting. Elia estimates that Belgian electricity consumption will rise by 20 to 30 per cent over the next ten years, with 5 to 7 terawatt-hours attributable specifically to data centres.



Behind-the-meter: less dependence, more control

‘Behind-the-meter’ means generating, storing and managing energy on your side of the meter without feeding it into the public grid. This means you avoid network charges, levies and certificate costs. More importantly, you avoid the queue. In practice, a behind-the-meter setup combines:

- Solar and wind energy as primary sources
- Battery storage for temporary buffering
- An energy management system (EMS) that balances supply and demand in real time
- Emergency power supply in the event of a power cut, using UPS systems, fuel cells or emergency generators

The EMS is key here. It combines weather forecasts, price signals and load profiles to make the best decision at any given moment: whether to use the energy yourself, store it or feed it back into the grid.

Microgrids: local grids as strategic infrastructure

A microgrid goes one step further: it’s a local energy grid that combines generation, storage and consumption in a single management system and can operate independently of the public grid. An example is an industrial site with its own solar power, battery storage and emergency generator that continues to operate autonomously during a power outage. This makes it an attractive option for sites with high availability requirements, such as data centres or manufacturing companies with critical processes.

Companies such as GE and Bloom Energy are investing heavily in this sector. The reasoning is simple: managing your own energy makes you less vulnerable to grid problems, price spikes and supply disruptions. For businesses investing now, a microgrid also offers a pathway to AI Greenferencing by connecting energy-intensive processes to their own renewable energy source without relying on the grid.



PPAs and value stacking: the business case

A behind-the-meter setup doesn’t generate a return based on a single revenue stream. Value stacking is the key: combining multiple revenue streams from the same installation. This can be achieved through optimal self-consumption, participation in the day-ahead market, intraday trading and ancillary services such as reserve capacity (aFRR, FCR). Without this combination, the business case is often too weak. A corporate power purchase agreement (PPA) makes it possible

to secure a supply of renewable energy through a contractual agreement, regardless of market prices. This provides long-term price certainty and makes the transition to 100 per cent renewable energy a concrete and plannable process.

Technology alone is not enough

The challenges surrounding grid congestion are not merely technical. Government authorities, grid operators, industry and data centres must work together to find solutions. The energy transition trilemma (security of supply, affordability and sustainability) cannot be tackled without bringing all parties to the table.

In a later article, we will take a closer look at the role of data centres as flexible assets on the grid and how they are evolving from passive consumers into active players in the energy system.

Ready to rethink your energy strategy?

Sirris supports industrial companies with the transition to smarter energy systems, from feasibility studies to the implementation of behind-the-meter solutions, microgrids and flexible assets.

Get advice from our experts

Discover the other parts of AI 4 ENERGY.

Part 1: The queue for the grid: why behind-the-meter is becoming strategic **?**
Part 2: From energy consumer to flexible asset: the new role of data centres

Authors



Pieter Jan Jordaens



Paul Peeters