
ELODIE

Europe's energy shift to dynamic tariffs

As fixed-rate contracts fade, dynamic tariffs are transforming how businesses manage energy costs. With prices shifting in real time, automation, AI and storage solutions are becoming essential tools for navigating volatility and maximising savings.

Across Europe, the energy landscape is seeing a big transformation. Fixed-rate energy contracts are moving aside and giving way to dynamic tariffs, where prices change in real-time based on supply and demand. It's a shift that is redefining how businesses and homeowners engage with their energy usage, one that presents both opportunities and challenges for those looking at optimising their energy consumption in an ever-growing and uncertain market.

The surge in renewables and the implications

At the heart of this transformation is the expansion of renewable energy sources. Solar and wind power contribute significantly to the electricity supply throughout Europe; in 2024 just under half of the energy produced came from renewables. This comes at the cost of greater volatility in energy pricing. On exceptionally sunny and windy days, wholesale electricity prices plummet, occasionally turning negative, as observed in countries like Germany and the Netherlands.

On the flip side to that, during periods of high demand coupled with low renewable output, prices surge dramatically; a variability that proves the necessity for dynamic pricing models that allow businesses as heavy energy users to more strategically control their energy usage.

Dynamic tariffs and the future of energy pricing

The topic of dynamic tariffs is a key discussion point in the energy sector and even more so following the energy crisis in 2021/22, which resulted in extreme price volatility across Europe. In the commercial sector, dynamic tariffs are being touted as a method for balancing energy consumption with production, reducing peak demand and pressure on old and capacity laden grid networks, as well as maximising the efficiency of renewables. These tariffs, which typically work on an hourly basis, reflect real-time wholesale prices, allowing energy consumers to adjust their usage patterns as needed.

While such tariffs have already been embraced in markets such as the Nordic countries, mainly due to high usage of EVs and heat pumps, adoption in Southern and Eastern Europe trails behind. A big reason for this is that businesses in regions like Southern and Eastern Europe worry about unpredictable price swings, especially in places where high energy costs are already a strain.

More and more companies are turning to automation and AI-powered energy management tools to take the guesswork out of energy pricing. Instead of manually tracking fluctuations, businesses can let smart technology handle it, making sure they're using or storing power at exactly the right time.

Poland's embrace of dynamic tariffs

Poland is a country making serious moves in the space. Aligning with EU decarbonisation goals, its government is heavily embracing renewables, prompting businesses to explore dynamic pricing structures. The C&I sector, which is responsible for a large portion of the country's energy demand, is particularly impacted by the shift toward this pricing structure. With grid costs rising and uncertain, businesses are looking for solutions that make it easier to purchase energy when prices are low and either store or sell it back to the grid during peak periods. Companies that can shift their consumption during low-price periods will benefit most from dynamic tariffs.

The role of hybrid energy storage systems

For businesses, energy storage systems provide a convincing argument. Combining solar installations with intelligent battery storage means businesses can store surplus

energy that's generated during low-price periods and deploy it when the demand and costs are higher. Not only does this provide cost savings, but in some instances, it can offer a potential revenue stream through energy arbitrage.

In 11 Eastern European markets, wind and solar power are expanding so rapidly that they will soon surpass peak electricity demand. This shift makes energy storage more crucial than ever. Lithuania is a prime example. By 2030, its renewable energy capacity is expected to represent 317% of its peak demand, meaning storage will be essential to draw and manage that excess power.

In Romania, funds have already been provided for 2 GWh of storage projects, according to the Ministry of Energy, which aims to install 5 GW by 2026, not part of the National Energy and Climate Plan goals.

Storage is also key to dealing with one of the biggest challenges of dynamic energy tariffs: unpredictability. While businesses can benefit from lower electricity prices at certain times, sudden price spikes can pose a serious risk, especially if energy usage isn't being carefully managed. By integrating energy storage with smart, automated monitoring, companies can safeguard themselves against these fluctuations, ensuring they have a backup supply of cheaper electricity ready for when prices suddenly soar.

A perspective from the industry

Sandy Woodward, General Manager for Solis Europe, shares his thoughts on the importance of adopting hybrid energy storage.

'For businesses looking to stay competitive and control overheads, the ability to adapt to market fluctuations when it comes to energy pricing is becoming essential. By adopting intelligent energy storage capabilities, companies, or even residential customers, can better manage volatility of electricity prices, while reducing their carbon footprint. It's a win-win for any forward-thinking business or homeowner.'

He emphasises the role of dynamic tariffs in Europe's evolving energy landscape, saying: 'As the continent moves towards a more flexible, decentralised system, dynamic tariffs will shape future energy use. The biggest advantages will go to those who act early. Those that adopt these solutions now won't just cut costs; they'll build greater resilience in a market where the future is growing more unpredictable by the day.'

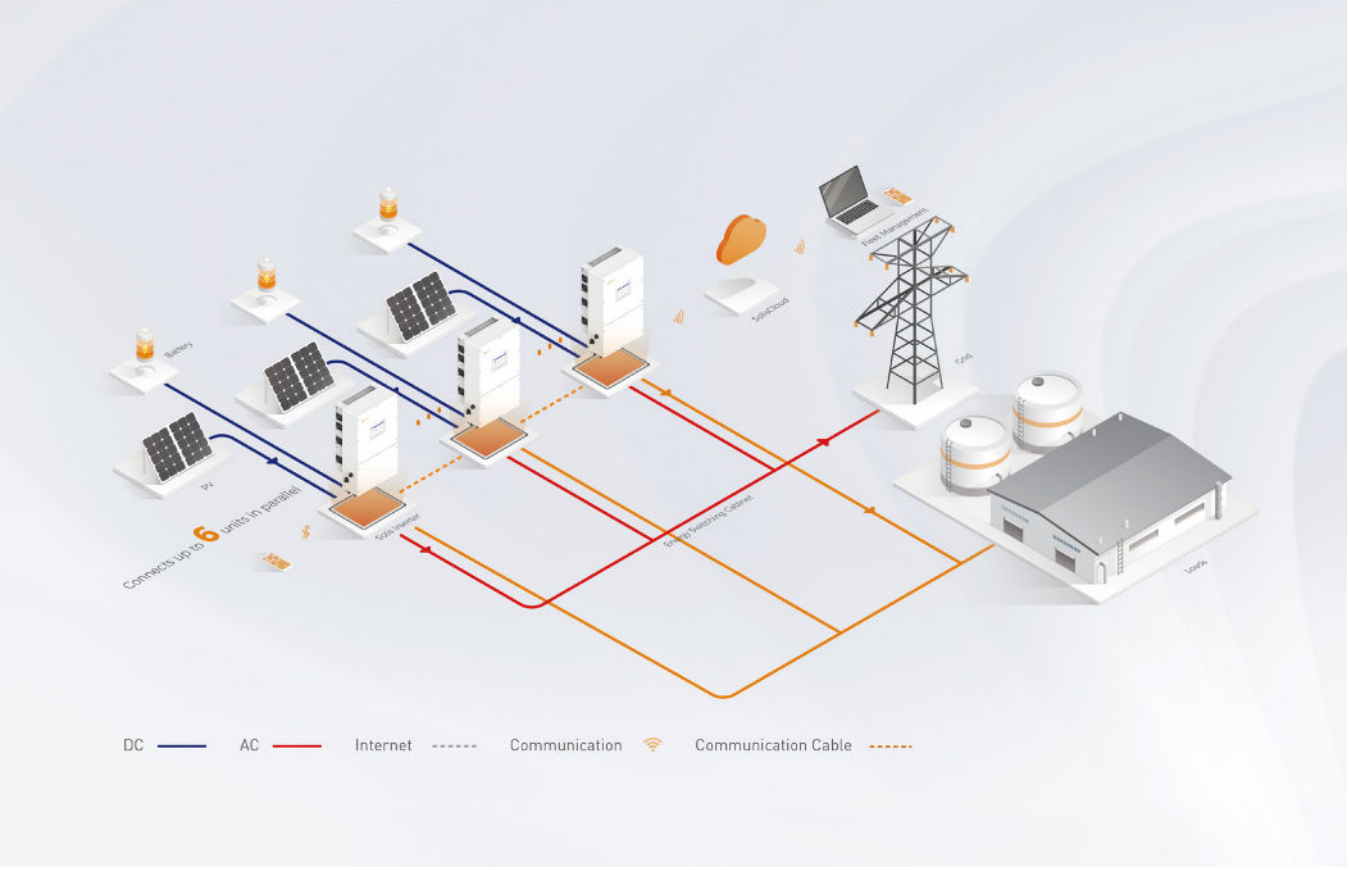
How Solis's hybrid inverters will help businesses stay ahead

Solis's three-phase hybrid inverters are built for businesses navigating fast-changing energy markets. These inverters enable companies to store inexpensive electricity and use it when prices peak, significantly reducing

Sandy Woodward

energy costs. When electricity prices spike, the inverters respond quickly by switching to stored energy, ensuring operations continue without the added expense.

Its 50 kW hybrid inverters offer scalability up to 300 kW by connecting up to six units in parallel, making them suitable for businesses of all sizes, including those planning to expand their solar systems or add more storage in the future. They are compatible with a variety of battery brands, providing flexibility in system design. With built-in safety features such as surge protection, support for unbalanced



loads and robust grid support, Solis C&I hybrid inverters deliver reliability in demanding commercial environments.

Smarter energy management

The smartest businesses aren't just installing storage, they're controlling it. SolisCloud integrates with real-time electricity pricing data, such as Nordpool, so businesses can take full advantage of fluctuating tariffs. With the introduction of AI-driven automation imminent, customers will be able to buy low and sell high, without lifting a finger.

The introduction of AI will bring powerful enhancements to energy management. Predictive analytics will forecast price trends, enabling businesses to make smarter energy decisions. Time-of-use optimisation will automatically shift energy consumption to periods when electricity is cheapest, maximising cost savings. Automated energy trading will allow businesses to sell stored energy back to the grid when prices peak, creating an additional revenue stream.

Businesses should act now

The future of energy pricing is dynamic and businesses that adapt now will be the ones that thrive. At least €1.4 billion from European funds will be designated to storage procurement schemes in five countries: Bulgaria, Cyprus, Hungary, Lithuania and Romania. Although their auctions are in different stages of development, all of them have been progressing toward effectively awarding funds. In Romania, new solar PV projects over 10.8 kW are even required to include storage, proving that the shift toward smarter energy solutions is already happening.

By combining AI-powered management, scalable storage and predictive analytics, businesses can turn energy price volatility into a strategic advantage. The move to dynamic tariffs isn't a question of if, it's a matter of when. Those who make the shift early will be the ones who benefit the most.

www.solisinverters.com

References:

[1,2] S&P Global Commodity Insights