A lasting fix for industrial energy: why solar and storage must replace gas

Words: Sarah Spencer, Origination Manager at Balance Power

The UK's industrial energy crisis cannot be solved with short-term measures like green levy cuts. With gas prices driving up costs and exposing the sector to global volatility, only a long-term shift to renewables offers real relief. Solar power, paired with battery energy storage systems, provides a scalable, decentralised and cost-effective solution that puts control back in the hands of British industry.

The cost of industrial energy in the UK is among the highest in the world. This isn't just a line from a market memo, or a fiscal review, it's a pressing issue with far-reaching implications for British industry, competitiveness and national security.

Businesses operating in this country pay a heavy premium to do so. Energy costs in the UK are 46% higher than the average across the 32 nations in the International Energy Agency, and more than four times higher than in the US. These are costs that squeeze margins, deter investment and weaken our industrial base, all before any other economic pressure even comes into play.

Whilst the UK has recently achieved many significant milestones in forming a cheaper, cleaner energy network, 2024 was the first year where renewable sources generated more energy than fossil fuels, and the grid reached the milestone of 19 GW of solar capacity earlier this summer, not enough has been done to reduce industrial energy costs.

The government has rightly identified this as a key issue to be addressed, and put forward a series of measures in its recent Industrial Strategy, aiming to cut the bills of electricity-intensive industry by up to 25% from 2027.

Among these measures was the reduction of green levies, a form of taxation paid by energy-intensive manufacturers designed to encourage and fund renewable generation, for thousands of UK businesses.

This measure, whilst claiming to promise short-term relief for manufacturers, misses the fundamental aims and needs of the sector and could fail them in years to come. Instead, the government must focus on long-term reforms that put businesses in the driving seat of their own energy use and costs.

Green levy cuts

Manufacturers have long advocated for the cutting of these levies. Last month the industry body Make UK publicly called for such measures to be scrapped, arguing that they contributed to a low-growth economy at risk of further de-industrialisation. Hinting towards the increasing prevalence of global trade coercion, the body stated that current industrial energy costs 'risked the security of our country'.

The sentiments behind this argument are easy to sympathise with. The UK's industrial energy costs need to be lowered, and current levels fundamentally risk both an anaemic manufacturing sector and a weaker economy generally. But the question remains: is cutting green levies the way to achieve progress?

The removal of these levies may reduce energy costs in the short term, especially when partnered with a reported parallel policy increasing the discount on the fees that energy-intensive firms pay to connect to the grid to 90% up from 60%. Yet the effects of this on each sector will be relatively small. For example, industry sources suggest that the steel sector may only save about £15m a year, a relatively tiny sum.

How this saving will be paid for is also unclear. The government stated that this move would not cost the taxpayer at all, as the windfall would be funded through reforms to the energy system.

This attribution is vague at best. Whilst this government has made many welcome moves so far to reform the energy grid and connections system, progress will likely continue to be slow, with savings difficult to accurately estimate.

Aside from these practical concerns, short-term policies such as these levy cuts risk missing the fundamental causes of the industrial energy price problem.

The real causes of skyrocketing industrial energy prices

The defining factor in the UK's industrial energy prices is the market's large exposure to wholesale gas markets. The UK's grid is underpinned by gas, filling in the majority of gaps in the renewable and nuclear supply. Critically, it also sets the price for the electricity market, even when it is not the primary source of energy, via a 'marginal pricing system'.

In this system, the price for a package of energy is set by the last and therefore most expensive unit of power required to match demand at any period. So, whilst cheaper renewable and nuclear energy supply most of our power, it's these final gas units that set the overall price, significantly driving up costs. As a result of this, wholesale gas costs are responsible for around 39% of the average UK industrial energy bill, significantly higher than the next two factors, network costs (23%) and VAT (20%).

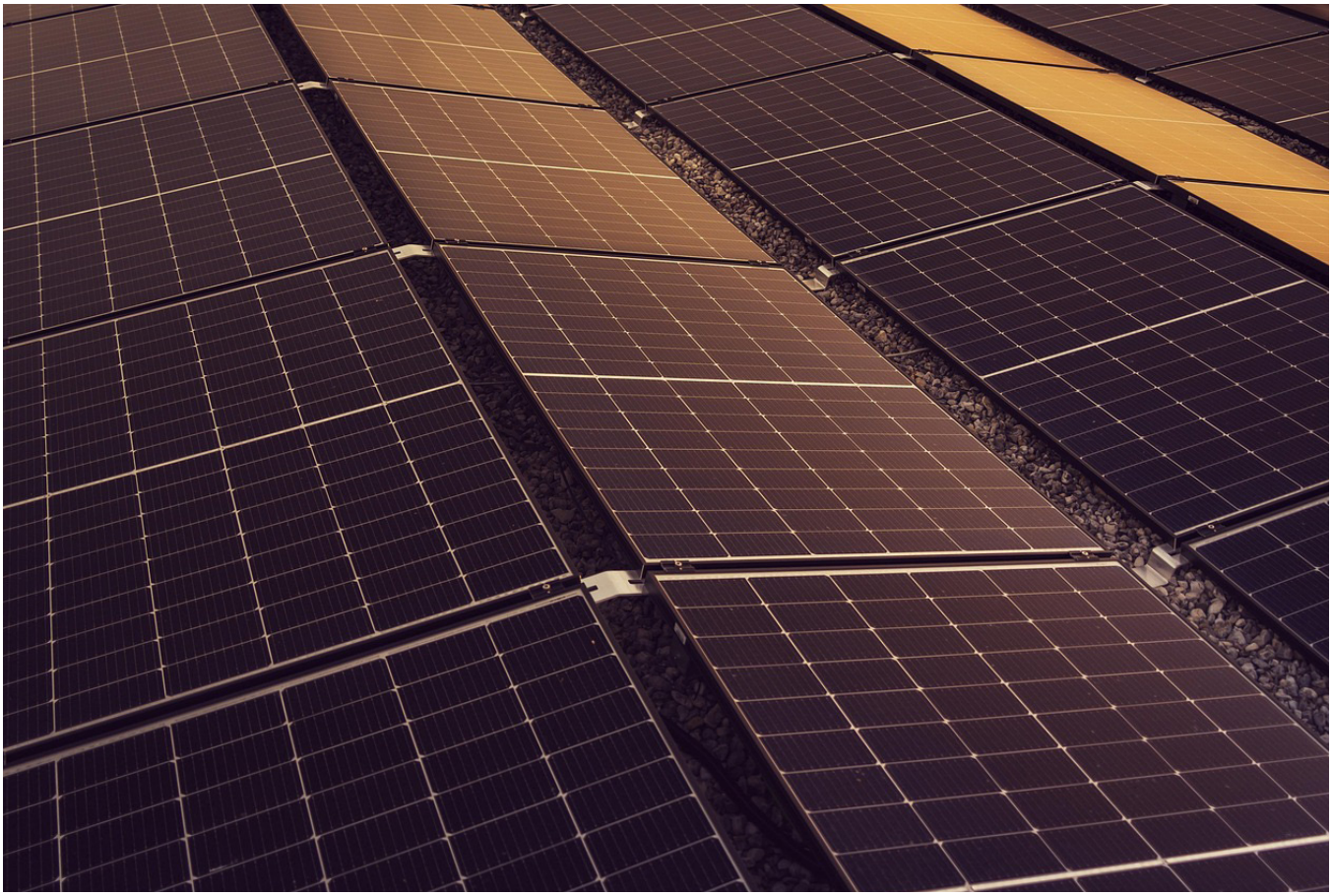
The effect of this has been multiplied in recent years due to the impact of the Ukraine war, which has caused a spike in European gas prices.

This pricing system isn't unique to Britain; it's used across most of Europe. What is largely unique to Britain is its reliance on & exposure to natural gas markets. For example, gas sets the price of French energy less than 10% of the time, as its national supply is largely underpinned by nuclear energy.

Though other contributing factors deserve attention, the solution is clear. The UK needs to end its reliance on natural gas for good, and opt for a renewables-first national grid, the exact system that green levies are designed to fund and support.

Solar and BESS: a true green solution

The solution lies in creating a robust, renewables-first energy system. Solar, paired with battery energy storage systems (BESS), should be at its core. Solar is cheap, scalable and increasingly easy to deploy. When combined with BESS, excess energy can be stored and deployed at times of peak demand, boosting efficiency and reliability.



Crucially, these solutions can provide decentralised generation directly to businesses, reducing dependence on the grid and the wholesale electricity market altogether. Behind-the-meter (BTM) systems involve businesses installing solar arrays and batteries on-site, allowing them to generate, store, and use their own clean power, bypassing the grid entirely. The implications are significant: reduced exposure to volatile gas prices, avoided network charges and the ability to take control of energy costs.

Moreover, solar projects are faster to deliver than many other forms of infrastructure. Large-scale rooftop installations can be completed in months rather than years, offering near-term relief as well as long-term transformation. BESS projects add another layer of resilience, enabling businesses to stabilise their own supply and contribute to wider system flexibility.

By contrast, fossil fuel dependency exposes the UK to volatile global commodity markets, geopolitical risks and long-term infrastructure costs that offer diminishing returns.

The government has already acknowledged the importance of solar and BESS through its plans to reform the grid connection process. This is a welcome development, but it must go further. The solar industry is poised for growth, with rapidly falling costs and rising investor interest. What's needed now is targeted support to unlock its potential for UK industry.

While BTM solar may never provide more than 20% of total generation nationally, its benefits are not limited to those who install it. Every business that adopts BTM generation reduces pressure on the grid, shortens the queue for new connections and improves overall resilience. It also creates a more favourable investment environment for renewable developers, who can count on a more stable policy landscape and faster returns.

What the government should do

Instead of offering short-term relief through green levy cuts, the government should take a strategic, long-term approach that prioritises solar and BESS as foundational solutions. That means: providing financial support or tax incentives for behind-the-meter solar and battery installations, reforming the grid connections process to fast-track solar and storage projects, and considering protecting and enhancing green levies to continue funding the transition away from gas.

A vision for the future

We stand at a crossroads. One path offers the illusion of quick savings but leaves us locked into a costly, polluting system. The other charts a bolder course; a modern, renewable-powered industrial base driven by British solar and battery innovation.

By embracing the joint power of solar and BESS, we can build an energy system that is cleaner, cheaper, and built to last. British industry deserves no less.

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About the author

Sarah Spencer is Origination Manager at Balance Power, leading land acquisition and strategic energy partnerships.

She works with landowners and commercial teams to secure prime sites for UK energy projects, and partners with high-energy users to deliver tailored clean energy and PPA solutions that align with sustainability and cost goals, helping them navigate the complexities of on-site generation and long-term energy cost certainty.