

COULD ENERGY STORAGE BE THE SOLUTION TO INFLATION?

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The Bank of England recently announced its largest interest rate increase in 27 years to combat inflation, primarily driven by increases in the cost of energy and the consequential increase in the cost of most other consumable goods.

Instability in global energy markets is the fundamental driver of the current inflationary cycle affecting the UK and many other countries. To control inflation in the long term, the government needs to address the underlying vulnerabilities of an economy reliant upon fossil fuels by transitioning to renewable energy and re-establishing supply chains disrupted by the pandemic and Russia's invasion of Ukraine.

Other nations have reacted to the recent volatility of wholesale energy prices by acting resolutely to reduce the cost of energy and with it the factors driving inflation. For example, the U.S. Government recently enacted the Inflation Reduction Act, a historic down payment on deficit reduction which will fight inflation while investing in domestic renewable energy production and reducing carbon emissions by roughly 40 percent by 2030.

The Act's overall aim is to incentivize individuals and industry to move away from fossil fuels, with the biggest share of the funding going to tax credits and rebates for a host of renewable technologies. A secondary, longer term impact will be the mitigation of future inflation thanks to the investments in clean energy and electrification and associated reduction in fossil fuel use, energy costs can be expected to stabilize.

The UK can and should pursue a similar approach to counter inflationary pressures while reducing carbon emissions and dependence on unstable fossil-fuel producing countries. According

to energy research think-tank Ember, expanding Europe's electricity system by quadrupling renewable energy generation and building out electrical infrastructure could save the EU upwards of \$1 trillion by 2035, while delivering energy security and cleaner air.

THE BENEFITS OF RENEWABLES

Crucially, rapidly moving away from gas and oil will result in lower consumer energy bills. Between 2000 and 2020, the costs of renewable power have fallen sharply, driven by steadily improving technologies; it was recently reported that UK offshore wind farm operators will sell power for £37.35 per megawatt hour (MWh), while electricity produced using a large (600MW 500 hr) open cycle gas turbine is £222 per MWh according to The Department for Business, Energy & Industrial Strategy based on today's wholesale gas prices.

With a six-fold difference in costs between wind and fossil fuel energy, renewables have the potential to save money and address a key driver of inflation in the UK, while cutting carbon emissions and ensuring we are less reliant on imported gas and oil. At a time when the UK may be facing energy blackouts across industry and households this winter due to shortages, the promise of affordable and abundant renewable energy is most welcome.

HARNESSING THE POWER OF RENEWABLES

Despite the positives of clean energy, the intermittency of wind and solar generation still poses challenges. Put simply, if the wind does not blow and the sun does not shine, then energy is not generated.



Fortunately, solutions exist to ensure that an energy grid reliant upon wind and solar generation can deliver reliable power. Long duration energy storage (LDES) technologies store excess renewable energy to power the grid with affordable, reliable, renewable energy 24/7. For example, iron-flow batteries, such as those manufactured by ESS Inc., are a commercially available LDES technology that delivers 4+ hours of energy storage. Iron flow batteries offer a number of advantages over lithium-ion, currently the dominant storage technology. While lithium-ion is well suited to short duration storage, typically 4 hours or less, it does not provide adequate capacity to deliver baseload renewable energy and fully replace fossil fuel generators. In addition to enabling 24/7 renewable energy, iron flow batteries are cost effective, with a leveled cost of storage which falls as storage durations increase due to the cost-effective iron-based electrolyte. And, they deliver these benefits using safe and non-toxic materials and no critical minerals.

Renewable energy and LDES technologies are commercially available today and are the key to creating an inflation-resilient energy future. The UK needs to invest in the continued deployment of renewable energy while expanding the deployment of energy storage in order to create an economically resilient, decarbonized energy system. <https://essinc.com/>