



# IN FOCUS

RISK MANAGEMENT  
IN AN ERA OF POWER  
PRICE VOLATILITY

**October 2024**

Centrus

# Power pricing – how hedging can manage risk and optimise performance

## Introduction

Power prices have been increasingly volatile in recent years, and we have all felt it in one way or another, from increases in home electricity bills (always a lot quicker to go up than to come back down), to a more volatile cost base in our businesses (energy costs, inflation/indexation impact on contracts). Although the journey has been somewhat smoother for those who have managed to hedge ahead of the volatility.

Some may feel that having had hedging in place over this period they have ‘missed out’ on the highs (generators) or lows (consumers) of the pricing. The reality is that unless you work on a proprietary trading floor or are an active trading fund seeking to ‘beat the market’ – it’s unlikely a key objective from a board or treasury perspective to outperform. It is much more likely that the desired approach will be to manage risks, create certainty and support a relatively predictable cost and revenue profile.



The good news is that there are more routes than ever to prudent risk management in this space, coupled with routes to securing sustainably sourced/renewable energy, including:

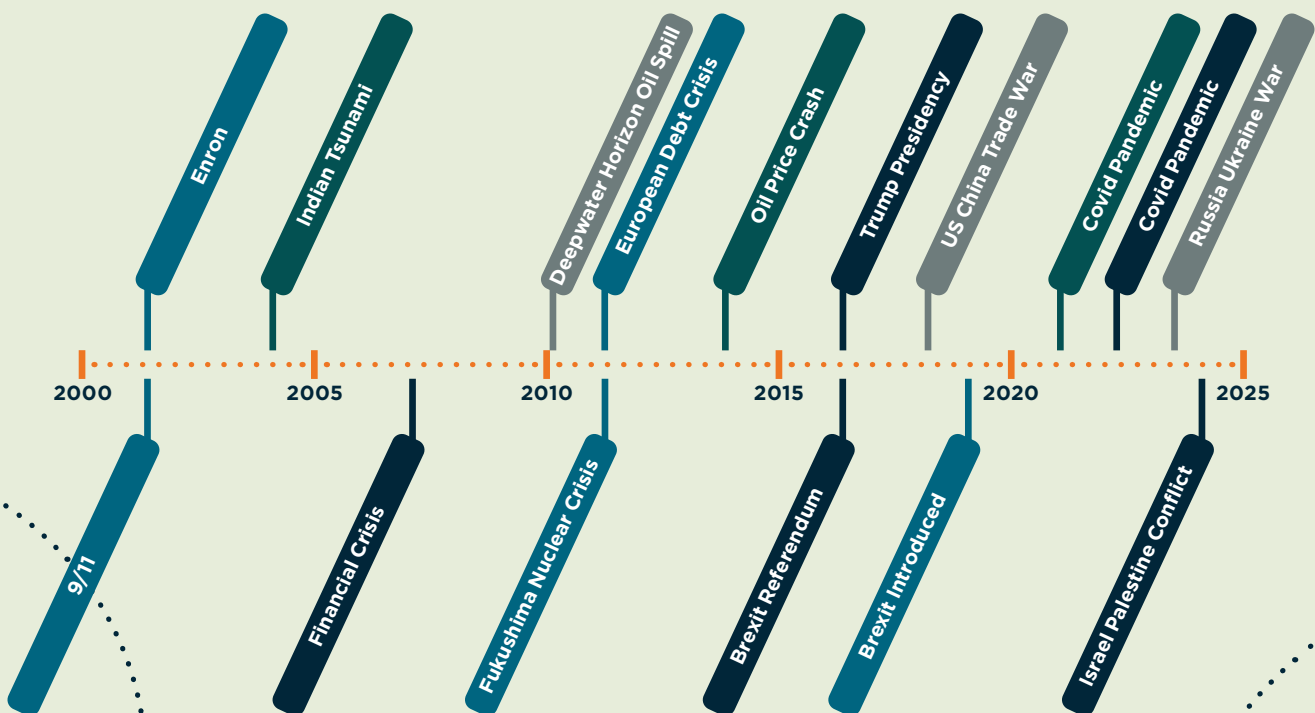
- Supply Agreements
- Power Purchase Agreements (virtual or physical)
- Contracts for Difference (CfDs)
- Fixed Volume Swaps or Pay as Produced Swaps
- Carbon Credits
- EU Allowances and UK Allowances (carbon emissions)

The routes are many, and each approach has its own pros, cons and suitability, depending on your business and risk profile. But, before we go too deep into that, let's take a look at what has been driving the volatility in energy prices and whether it is here to stay.

One of the biggest drivers of large price movements is unanticipated market shocks, often referred to as 'black swan' events. Despite a perception that such events are rare phenomena, recent history tells us that they are anything but; and they are only increasing in frequency. For instance, 2000-2009 saw events such as 9/11, the tsunamis, the Enron accounting scandal and the global financial crisis – all of which had significant global implications and impacts on businesses. Between 2010 and 2019 this number doubled. And the growth seems exponential: 2020 to 2024 has been one of the most tumultuous periods in modern history.

## Black swan event timeline

In the last ten years we have seen these events take place year after year. With political volatility translating directly into market fluctuations, the future seems even more unpredictable. If we look to the year ahead, the result of the American presidential election remains uncertain and could add to the already volatile landscape and subsequently destabilise the markets.



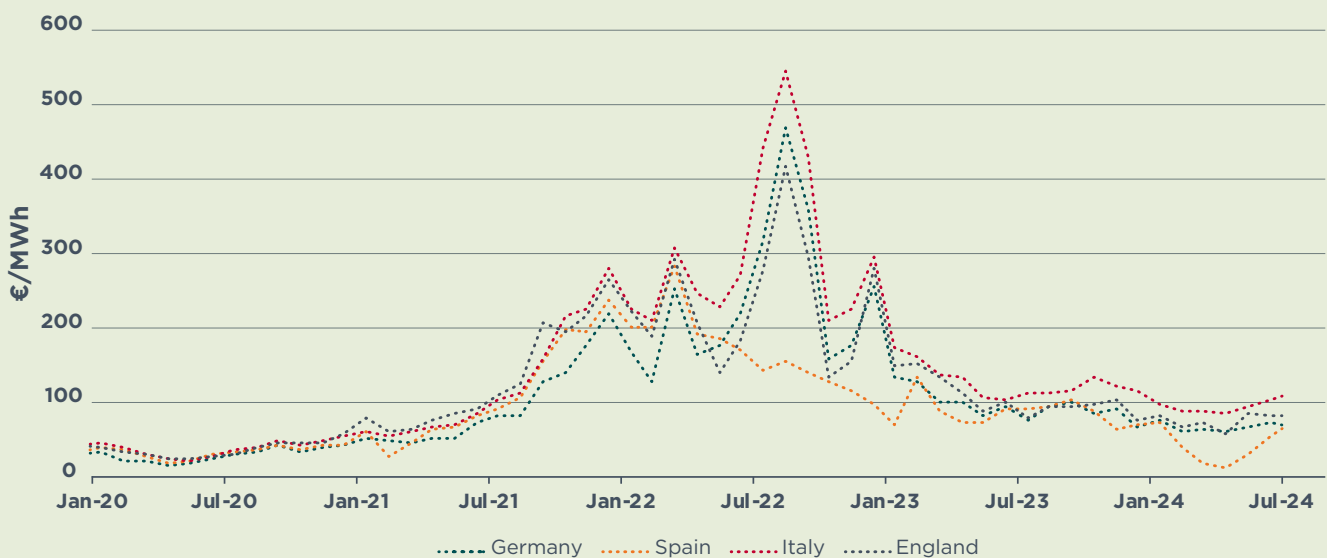
Current events such as the conflict in Ukraine and rising tensions in the Middle-East are prime examples of geopolitical shocks impacting the pricing of energy and commodities – with a particular effect on power pricing over the past few months.

As global political volatility has increased over recent years, this has directly translated into market fluctuations, making the immediate future even harder to predict. Even looking at the year ahead, events that we know will have a material impact, such as the US presidential election, appear to be on a knife edge, so it's impossible for companies and markets to 'price risk in'. Situations like this only add to the volatile landscape, with the capacity to destabilise markets for a period of time.

The chart below illustrates the price volatility that has been experienced over the past four years.



## Average monthly energy price across European countries



Source: European Wholesale Electricity Price – EMBER Climate; and Bloomberg UKPSPiR.

## Macro factors feeding into market shocks

While these occurrences tend to be a result of sudden global events, an increasing number of macro factors are proving a catalyst, both causing and making events more severe, as well as affecting market pricing and trends.

Supply and demand, the weather and changes in energy consumption patterns all play a material part in the ever-changing landscape for energy prices.

In addition, monetary and fiscal policies that are often intended to stabilise price shocks, have also ended up having unintended consequences. Though some of these trends are elongated, and therefore potentially more predictable, key drivers of energy and pricing volatility need to be closely monitored and mitigated by businesses.



ENERGY  
STORAGE

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## Battery technology

Battery technology and the need for rapid progress are reshaping infrastructure requirements across the globe, given the surge in usage after the introduction and rapid adoption of electric vehicles. This is a trend that can be easily predicted, especially when countries like the UK have policies mandating minimum numbers of electric cars being introduced. But, even so, rapid advances in technology have the potential to alter our energy storage and production needs almost overnight.

Currently, many renewable energy sources have a use-it-or-lose-it element to them, but development in battery storage is a vital part of the global clean energy mix in future. Collocation, where batteries share a grid connection with a wind or solar generator, is already delivering some level of energy storage for when the sun doesn't shine and the wind doesn't blow. Once technology that allows for both the storage and production of electricity on demand and at scale emerges, this is set to revolutionise the industry, and could cause material shocks to pricing as a result.

## AI

Artificial Intelligence (AI) is one of the biggest drivers of change in the new energy paradigm. Surging increase in demand for AI is having a drastic effect on consumption and pricing, with big tech firms such as Microsoft, Google and Amazon all pouring billions of dollars into new technology and vast data centres. As well as driving increased consumption levels, this is also having an effect on sustainability efforts, which are central to energy transition.

Google alone has seen its greenhouse gas emissions rise by 48% over five years<sup>1</sup>, largely driven by the sudden demand for big data centres required to power AI, which raises questions about the implications for sustainability targets and clean energy progress. Demand is rising, and the potential effects of increased consumption, the environmental impact and changes to pricing will be things investors have to consider. But equally, investors need to consider the inherent risks associated with implementing a new technology.

## Crypto and the US election

The same is true for cryptocurrency, which requires colossal amounts of energy in the data process and is much more contentious in its uses and benefits among investors and businesses. Donald Trump recently announced his support for cryptocurrency, specifically Bitcoin, which provides us with an example of a macro trend with the ability and potential to cause market shocks.

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With the outcome of the US election likely to be on a knife edge until November, Trump’s favour for cryptocurrency could have a sudden effect if he wins. His victory is set to send shockwaves through the markets, given the potential for sudden spikes in demand and energy usage, which would ultimately dictate pricing. Arguably, just the tip of the iceberg when it comes to the impacts of a second Trump presidency. And with such known unknowns in play, it serves only to highlight the need for businesses to ensure they have strong risk management and robust hedging strategies in place.

All of these macro factors, as well as the increased likelihood of these events on a more regular basis, amplify the need for risk management strategies across all businesses exposed to energy price volatility.



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# Developing a sound risk management framework

So, how do we go about managing these risks? Typically, we recommend a sequential build-up of a risk management strategy, to ensure the right outcome is achieved. At a high level, this involves the following steps:

## 1 Identify

Identify the risk that you are trying to manage (for example power price exposure) in the context of your key business objectives, and ensure accuracy against underlying contractual obligations and how the price is set.

## 2 Measure

Measure the exposure, the volume of risk, the time period that it will exist for and how long you would like to manage it for. Be sure to identify any internal offsets in the first instance, so that you can get to an awareness of your net exposure.

## 3 Sensitise

This can be daunting, but keeping it simple in the first instance will give you a high-level view before taking a more in-depth look at the drivers. Assessing parallel shifts in pricing across the curve and the impact they will have is usually a good starting point, using a range of price movements based on historic volatility. But is it a £10 movement or a £400 movement in the price that you assess? Can pricing go negative? What is realistic here? We aren't going to delve into the detail of the various technical approaches here, but again start by keeping it simple.

## 4 Analyse

Once you have run the sensitivities, you will typically analyse the impact of these movements across your business from a revenue, costs, profitability and returns perspective. Can your business sustain these impacts? How material is the hit/benefit and is this within your level of risk tolerance?

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## 5 Options assessment

Once this analysis is complete, what products can you use to manage the risk and to develop an appropriate strategy? Everything from doing nothing to hedging 100% is on the table at this stage, and should be explored to fully develop the most suitable strategy for your asset or business. Don't forget the security requirements at this stage: What do I have to give to get this? Will it impact my liquidity? What's the best structure for my current structure (and potential future structures)?

## 6 Progress

So, having looked at your options, we likely have a short list and it is time to go to market. Without giving away any secret sauce here, this is a pivotal point in the process in terms of maximising deliverability of the desired outcome, while also keeping an eye open for any opportunities that present themselves for value-add along the way.

## 7 Execute

We have assessed your risk, explored your options, gone to market, assessed your options again, obtained all necessary board, committee and counterparty approvals, and it is time to get on and execute the plan, entering into the desired transactions and creating certainty.

## 8 Monitor

After a quick break from all the strategising and transacting, it will soon be time to monitor and report on the risk management strategy, from hedge accounting, to valuations, to trade reporting to annual reports. There is no point in executing the best possible strategy unless it is going to yield the desired outcome for the business from a reporting and performance perspective. Constant monitoring and realigning the risk management strategy (top up, refixing, new products) here is key to optimising your performance – and don't be afraid to pivot or embrace change as the opportunity or the necessity arises.

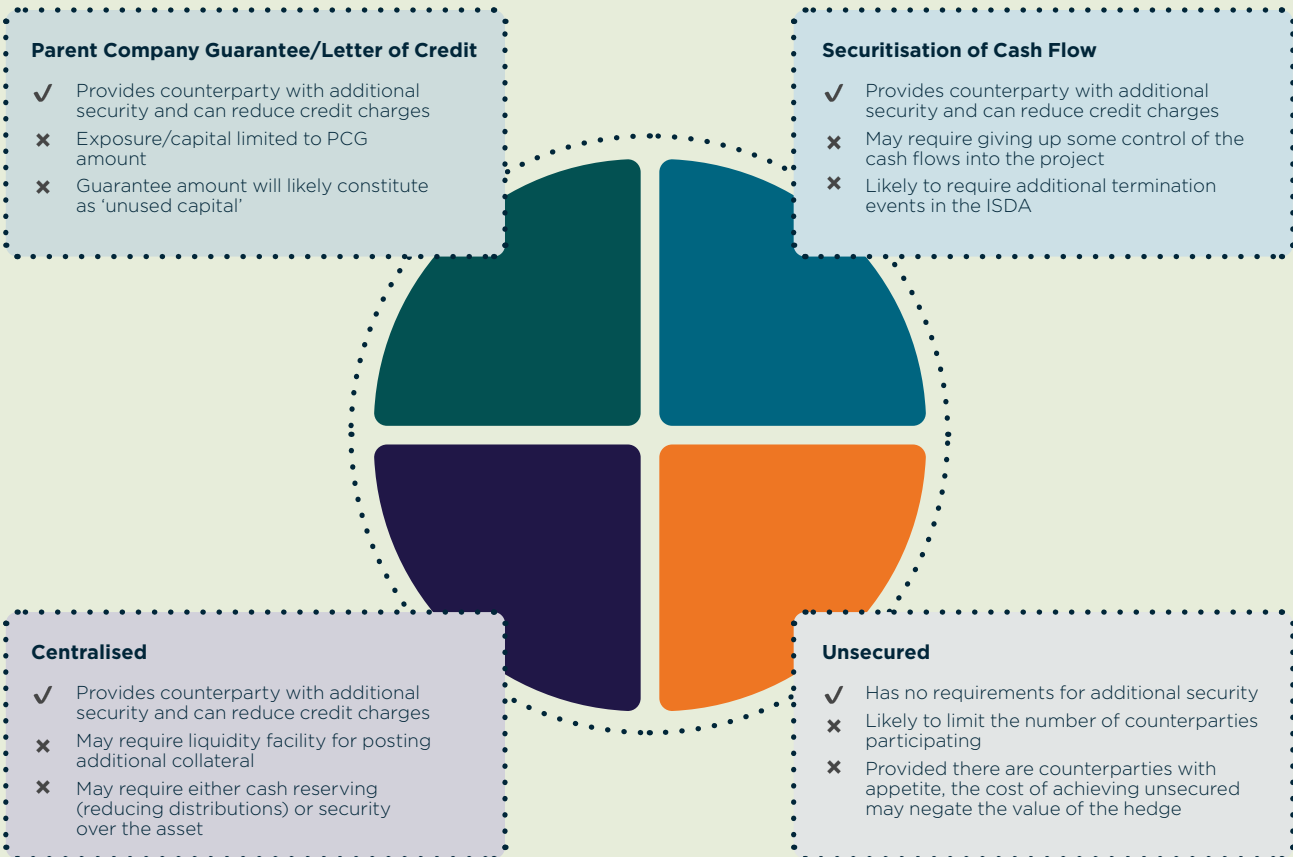


**Hedging makes sense in most instances, but it is important to understand the various credit and counterparty requirements that influence the strategy, depending on corporate and capital structure. To follow are some samples of common structures.**



## Risk management/Hedging credit structure

Hedging exposures at a portfolio level requires a carefully considered structure that best meets each sponsor's objectives. These considerations are applicable to each risk management section (Power, Inflation, Interest Rates and FX).



“With the increase in product availability, we have also seen an increase in flexibility from hedge counterparties in relation to how the credit package is structured – the pricing/cost of the hedging products will be materially impacted by the credit structure, so this area needs a lot of time and attention to ensure optimal outcome.”

**Mark Taheny**  
 Managing Director  
 Centrus

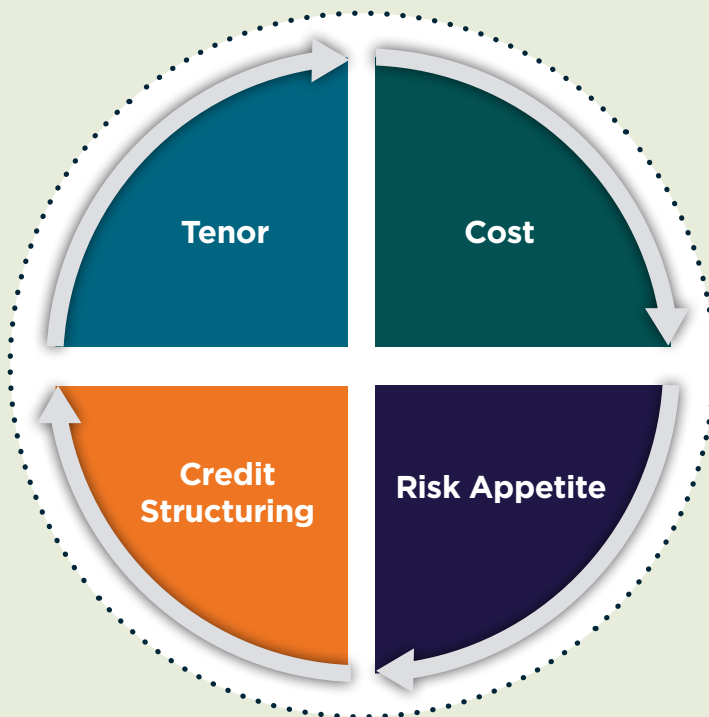
# Hedging considerations

The optimal hedging strategy generally takes into account the level of target and tolerance you have for the following four segments. Depending on the desired outcome, we can take on more or less of each factor to achieve the right balance.

A good example of this for a generator of electricity would be accepting a little volume risk on a stable performing asset for an uplift in pricing, while also ensuring that the majority of the risk is managed through Pay as Produced – how much fixed volume is too much and for how long? What should the Pay as Produced discount be and how do I ensure I am getting the best price for my board/shareholders/investors? All important questions to ask.



## Hedging strategy considerations



- Terms of current PPAs
- Underlying index (EPEX/N2EX/ISEM etc)
- PPA fixed price offering
- Optimal tenor of hedging
- \* Security requirements
- Future flexibility
- Settlement periods
- Seasonality



This section covers examples of the strategies available, and evidence of their effectiveness.

## Hedging options

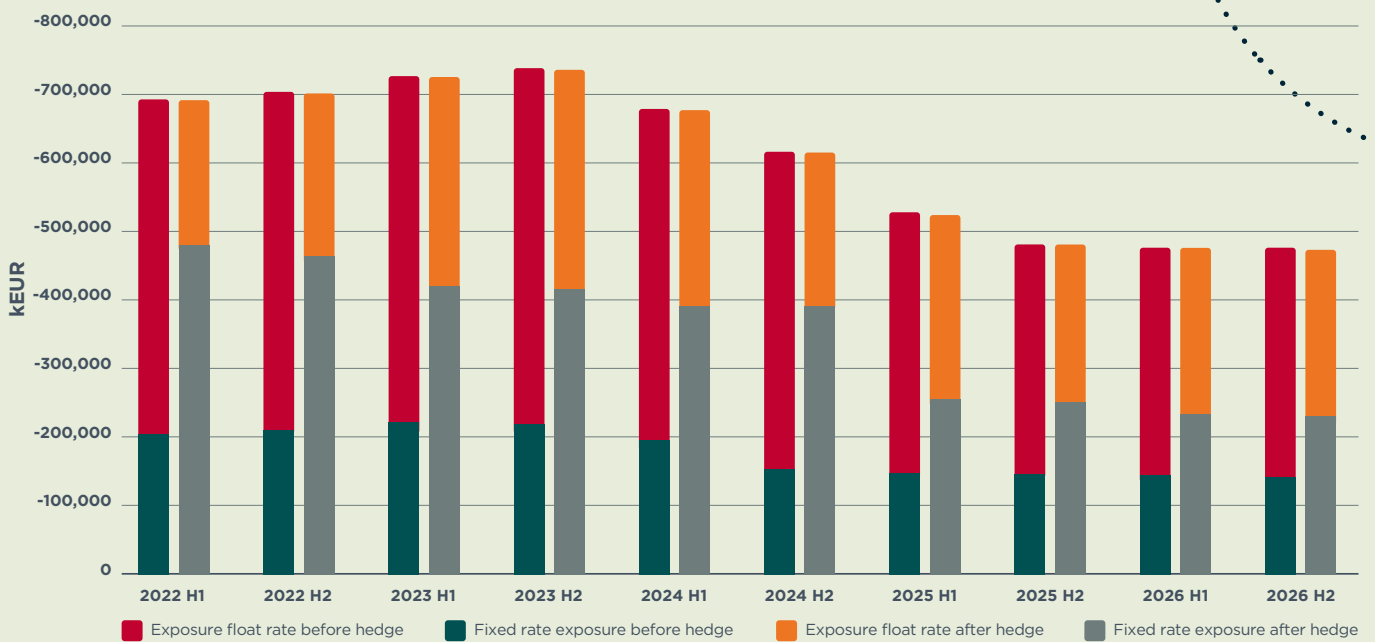
We advise on a number of effective hedging options and strategies that help business and investment managers navigate the risks, and develop the optimal approach from start to finish (often even before an asset is bought, or a business stream is up and running). We help to drive a prudent risk management strategy, while being acutely aware of the big picture and desired outcome in terms of returns, yields, P&L, valuations and any other key objective of the business.

## Ongoing monitoring, management, valuation and reporting

It is all well and good managing the risk, but it is also essential to be able to explain this from a reporting, valuations and accounting perspective. This is why a strong Treasury Management and Valuations system that can adapt to changes along the way is essential. Centrus has a bespoke TMS and Valuations offering, which allows us to provide an end-to-end client service from risk identification, measurement and hedging through to valuation and reporting.

Once the hedging strategy is in place, we support our clients with tailored reports to monitor their exposure before and after hedging. The chart below shows a company risk exposure before and after hedging. The bar on the left represents the exposure without any hedging strategies in place. The bar on the right represents the outcome of the hedged and non-hedged exposures after the strategy is in place.

### Debt hedging (kEUR)

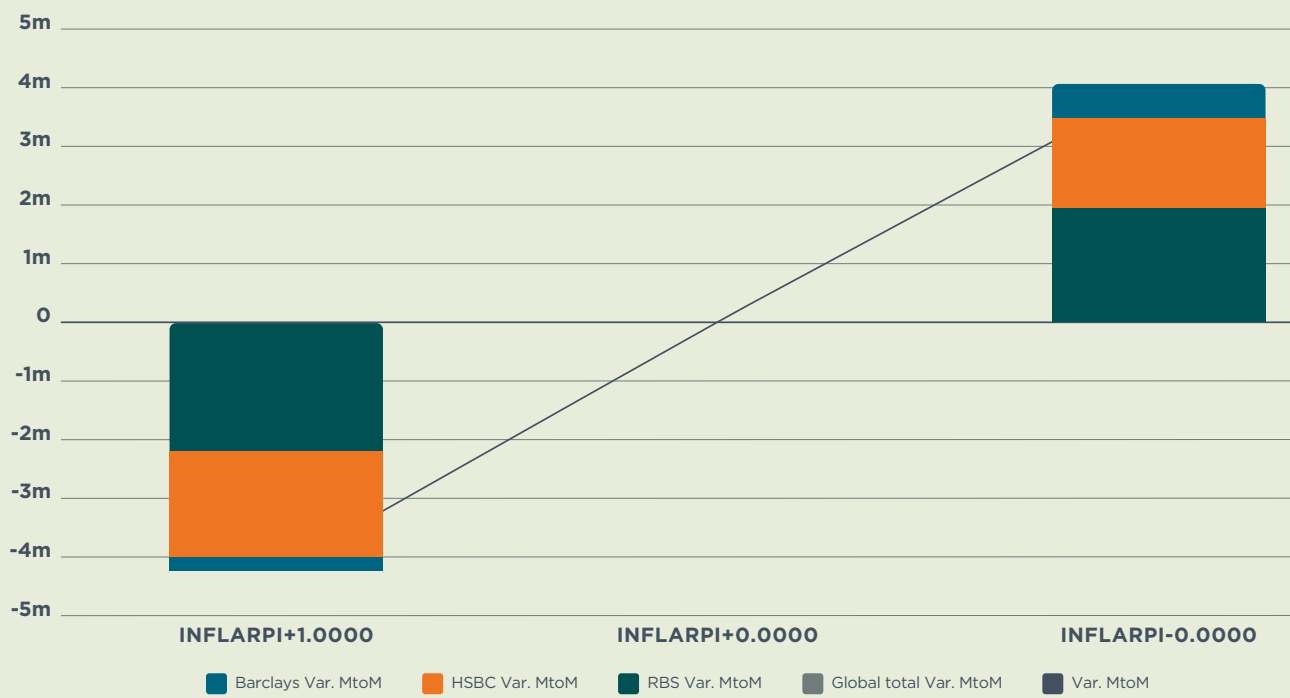


We also help clients run multiple scenarios on their strategies and see the impact on their liquidity and portfolio. Our system can perform several interest rate and inflation simulation scenarios, to assess how their company will perform under adverse conditions.



The chart below shows the fair value impact on their portfolio if inflation were to go up or down by 100bps.

### External indexed debit - Fair value



# Conclusion



One of the biggest potential mistakes business leaders and finance teams can make, is concluding that the best strategy is to sit tight and wait to see what comes next. In today's fast-moving and increasingly volatile energy markets, utilising a financial power hedging strategy is more critical than ever. By implementing the right infrastructure now, you can gain the agility to execute market-driven hedges swiftly, often on the same day. Different products will offer different pricing, risks and benefits, but having the full picture and awareness of what is on offer in today's market is an essential aspect to achieving the right outcome for the long term.

Businesses can prepare to expect the unexpected to an extent, but market shocks will still occur that are mostly unpredictable. As Mike Tyson once said, "everyone has a plan until they get punched in the mouth" – these events have the ability to cause major changes completely out of the blue, and without a crystal ball, nobody can have a plan for everything, which is why power hedging is so important.

Centrus has a wealth of experience in power hedging (and the full spectrum of risk management strategies), and has constantly been at the forefront of supporting clients to execute power hedge strategies with both financial institutions and energy trading companies. We are able to offer an effective, robust solution for managing ongoing volatility stemming from geopolitical events and environmental risks, enabling businesses to maintain revenue and distribution certainty.

With forward prices rising and an expanded universe of potential hedge partners, now is the ideal time to engage with Centrus, to help you secure long-term value and meet your risk management needs.

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