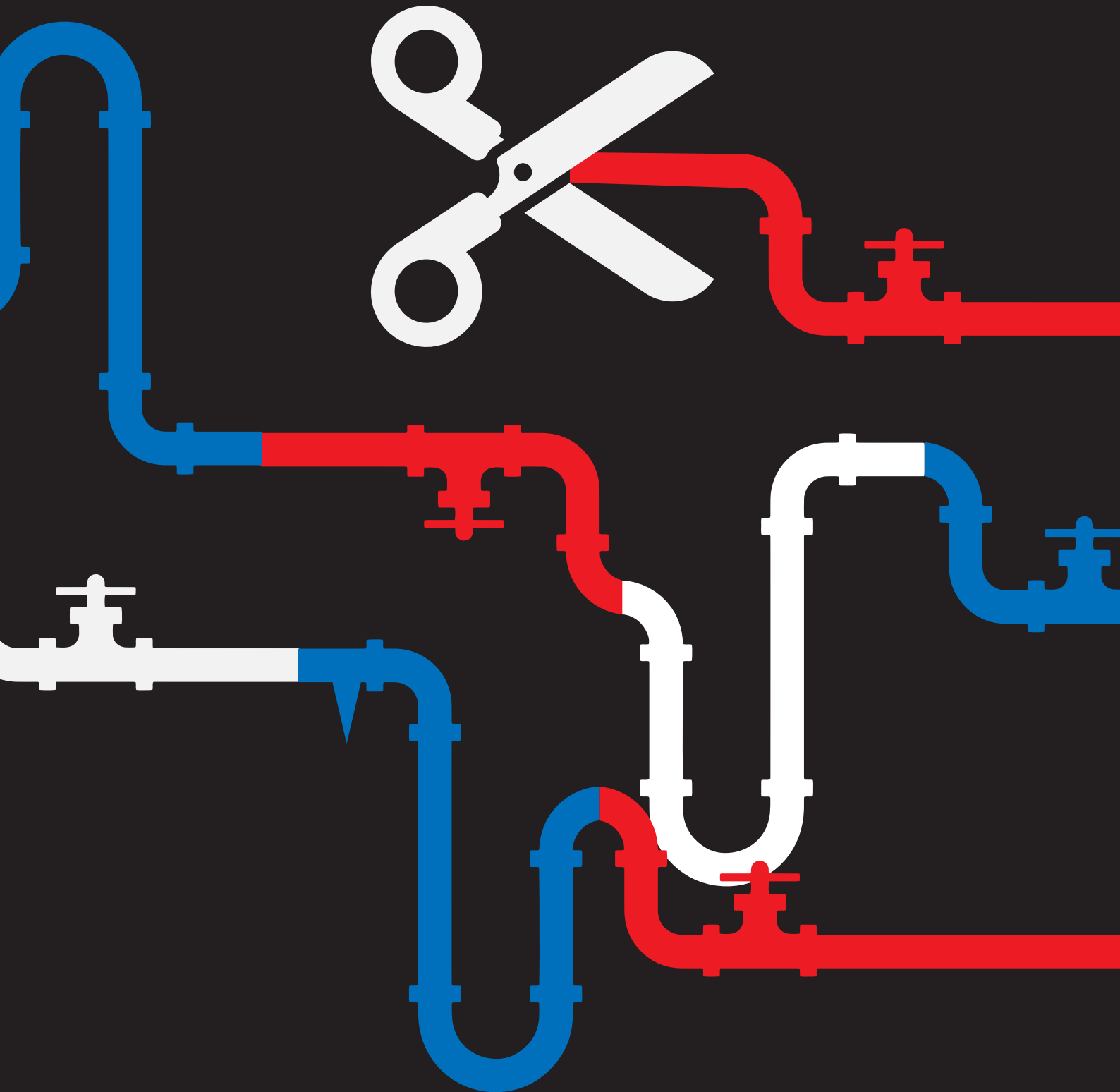


Europe's Long Winter: Escaping the Energy Crisis

Daire Lawler and Luke O'Callaghan-White





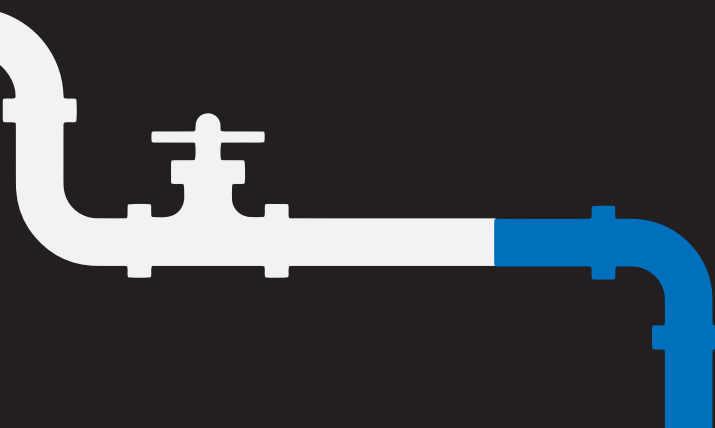
Executive Summary

The Russian invasion of Ukraine has had a significant impact on energy prices in Europe, but the price of energy has been increasing for over a year, and pre-dates the conflict. This paper begins by examining the reasons behind the recent extreme energy price volatility in Europe. Since the beginning of the COVID-19 pandemic, energy prices have oscillated considerably. In the early months of the pandemic, energy prices fell sharply in response to reduced global demand. However, in response to resurgent demand and the impact of supply chain disruptions as well as low gas reserves in Europe, energy prices have risen rapidly and eroded the purchasing power of consumers within the euro area and the rest of the world. The paper shows that the COVID-19 pandemic has cast a long shadow over the cost of energy.

In response to this cost-of-living crisis, central banks are tightening the previously accommodative monetary policy that supported economies during the pandemic. In addition, governments both in Ireland, and across the EU, have utilised multiple fiscal measures to cushion the impact of rising inflation on vulnerable consumers. The paper examines these monetary and fiscal policies and considers the efficacy of such interventions in stabilising energy price inflation in Europe.

These measures are short-term in nature and political leaders will need to consider a structural approach to future-proof the energy systems of Ireland and the EU and, in turn, alleviate cost-of-living concerns for consumers.

The paper concludes by proposing three recommendations which support these objectives. Firstly, as natural gas will continue to be a necessary element of the European energy mix over the next decade, the EU should develop an initiative for joint gas procurement. This approach would support Member States worst affected by the pivot from Russian gas imports and contribute to greater security of supply. Secondly, this paper argues that a second electricity interconnector, between Ireland and France, will be necessary as Ireland's wind economy grows over the next decade. Such an interconnection would enhance Ireland's energy connectivity. Finally, it is recommended that the operation of the EU's wholesale electricity market should be reformed. A move to a model of locational marginal pricing would better reflect local price signals.



Introduction

The increase in energy prices is the primary driver of inflation in the EU today.^{1 2} Geopolitical tensions in Eastern Europe have contributed greatly to the steep rise in gas prices. However, the current spike in energy prices predates the Russian invasion of Ukraine. There are several reasons which can explain the significant increases in the price of energy over the past twelve months. Policymakers at both the EU and national levels have introduced a range of monetary and fiscal policy measures to respond to the impact of inflation on consumers. These policies are largely short-term in nature. A more durable policy approach, which addresses relevant structural factors and considers the medium-to-long-term perspective, will be needed to shelter consumers from excessive volatility in energy prices.³

This paper examines the underlying causes of the increase in the cost of energy in the EU, evaluates the policy measures that have been taken to alleviate the cost-of-

living burden on consumers, and concludes with recommendations that policymakers should consider to enhance the resilience of the EU's energy sector.

Section I – Factors Behind the Rise in the Cost of Energy

The Long Shadow of COVID-19

The COVID-19 pandemic has had a profound impact on the energy sector. The period from 2020-2022 has been characterised by extreme fluctuations in energy demand. In 2020, as the pandemic began to spread, governments introduced sweeping restrictions on movement and economic and social activity. In the EU, demand for energy declined in every Member State during this time and energy consumption in 2020 reached its lowest levels since 1990 – the first year for which such data are available.⁴ In Ireland, total energy consumption fell by 8.9% in 2020 compared with the previous year.⁵

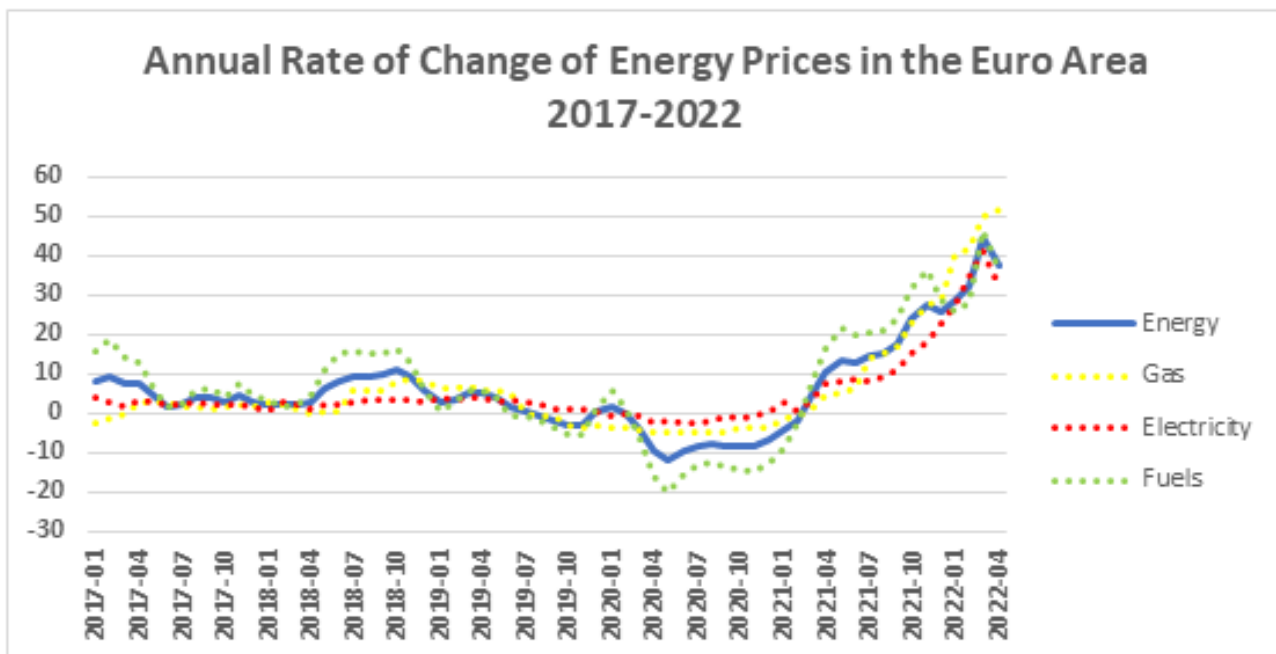


Figure 1 – Source: Eurostat

¹ All online references in this paper are valid as of 2 July 2022.

² Central Bank of Ireland (2022) 'Inflation in the euro area and Ireland', Central Bank, Dublin, 10 February 2022 <https://www.centralbank.ie/news/article/blog-inflation-in-the-euro-area-and-ireland>

³ For the purposes of this paper, we refer to the 'short-term' as being a period of between 0 to 12 months, the 'medium-term' as being a period from 12 months to 5 years and the 'long-term' as being a period of over 5 years.

⁴ Eurostat (2021) 'EU energy consumption plummeted in 2020', Eurostat, Brussels, 21 December 2021 <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211221-1>

⁵ Sustainable Energy Authority of Ireland (2021) 'Energy In Ireland: 2021 Report', SEAI, Dublin https://www.seai.ie/publications/Energy-in-Ireland-2021_Final.pdf

This significant decline in energy demand had an immediate impact on prices. While there was a price decline in all sub-components of energy during the first wave of the COVID-19 pandemic in 2020,⁶ prices for fuel were more volatile than for electricity and gas, largely owing to restrictions on travel, which collapsed the price of oil.⁷

Resurgent Energy Demand in the EU in 2021

As Figure 1 shows, energy prices began to increase from May 2020, but at rates lower than the previous year until February 2021, when energy price inflation reached positive rates. From early 2021 until March 2022, energy price inflation in the euro area increased almost continuously. Figure 1 shows that by January 2022, energy prices had increased by 40% compared to January 2021. The economic recovery from the pandemic, which began in spring 2021, and was faster than expected, fuelled strong growth in energy demand. In turn, energy prices rose across Europe and other developed economies.

The economic rebound in China in 2021 coincided with Europe's post-COVID recovery.⁸ China's aggregate energy demand is typically an important driver of global market prices. In 2021, its demand for gas increased by 8.4%⁹ and China increased its energy imports of liquified natural gas

(LNG), primarily from the Middle East. As a result, almost 20% fewer gas shipments arrived in Europe in 2021.¹⁰ This demand for shipped gas in China drove the spot price for LNG in Asia to unprecedented highs and further constrained European energy supply in 2021.¹¹

In 2021, energy demand was also influenced by a series of disruptive weather events. Europe endured a prolonged winter period with colder-than-average temperatures persisting for the first five months of the year.¹² This was followed by the warmest European summer on record.¹³ Such extreme cold-and-hot-weather events increase demand for heating and for air conditioning respectively, which in turn influences wholesale energy prices.

Furthermore, from late spring until autumn of 2021, Europe experienced dry and still weather conditions. This led to a period of 'wind-drought' where wind generation across north and western Europe was significantly lower than anticipated. The energy company SSE reported a decline of 32% in anticipated wind power generation in the UK between April and September of that year.¹⁴ This increased demand for energy during the economic recovery from COVID-19 and the following extreme weather events exposed the significant supply constraints within the European energy market, which played an important role in the energy inflation spike of 2021.

⁶ Eurostat (2022) 'Energy inflation rate continues upward hike, hits 27%', Eurostat, Brussels, 25 February 2022 <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220225-2>

⁷ US Bureau of Labor Statistics (2020) 'Monthly Labor Review', From the barrel to the pump: the Impact of the COVID-19 pandemic on prices for petroleum products, Bureau of Labor Statistics, Washington, D.C., October 2020 <https://www.bls.gov/opub/mlr/2020/article/from-the-barrel-to-the-pump.htm>

⁸ BBC (2021) 'China's economy grows 18.3% in post-covid comeback', BBC News, 16 April 2021 <https://www.bbc.com/news/business-56768663>

⁹ Ambrose, J. (2021) 'What caused the UK's energy crisis?', The Guardian, 21 September 2021 <https://www.theguardian.com/business/2021/sep/21/what-caused-the-uks-energy-crisis>

¹⁰ Ibid.

¹¹ Tsafos, N. (2022) 'Gas Line' Q4 2021, Centre for Strategic and International Studies, Washington D.C., 10 January 2022 <https://www.csis.org/analysis/gas-line-q4-2021>

¹² Matalucci, S. (2021) 'Energy crisis: Harsh winter would add fuel to climate change fire', DW, 29 September 2021 <https://www.dw.com/en/energy-crisis-harsh-winter-would-add-fuel-to-climate-change-fire/a-59335095>

¹³ Copernicus (2021) 'European State of the Climate: Temperature', European Space Agency, Paris <https://climate.copernicus.eu/esotc/2021>

¹⁴ Stevens, P. (2021) 'UK energy titan SSE says low wind, driest conditions in 70 years hit renewable generation', CNBC, 29 September 2021 <https://www.cnbc.com/2021/09/29/sse-says-low-wind-dry-conditions-hit-renewable-energy-generation.html#:~:text=Powering%20the%20future,-UK%20energy%20titan%20SSE%20says%20low%20wind%20and%20driest%20conditions,70%20years%20hit%20renewable%20generation&text=SSE's%20renewable%20assets%20produced%2032,hit%20wind%20and%20hydro%20output>

Supply Crunch in Europe

There is a strong positive relationship between economic activity and energy demand.¹⁵ Given that the economic rebound from the COVID-19 pandemic was much more sizable than anticipated,¹⁶ the supply of energy throughout Europe struggled to meet increased levels of demand.

This supply crunch was exacerbated by the continuing decline of natural gas production in Europe, which is partly driven by emissions reductions targets.¹⁷ Similarly, the decision by the utility Électricité de France, in late 2021, to close 10% of French nuclear plants and the German Government's commitment to completely phase out nuclear energy production by the end of 2022, mean that the energy generation gap will take some time to fill.¹⁸ In the interim, Europe will continue to rely heavily on energy imports to meet demand.¹⁹

Precarious Levels of Gas Reserves in the EU

This precarious supply position undermined European efforts to shore up gas reserves for winter 2021. Each summer, EU rules mandate that Member States store gas supplies to manage seasonal demand surges in the winter months.²⁰ This gas storage plays an important role

in guaranteeing Europe's security of energy supply and typically covers 25-30% of gas consumed across the EU in any given winter.²¹ While the EU average filling rate was 74% on 30 September 2021 (20 percentage points lower than on the same day in 2020),²² storage facilities operated by Gazprom, the majority-Russian-state-owned energy company, were characterised by a much lower filling rate of just 22%. The depletion of gas supplies from Russia began in the third quarter of 2021 and continued throughout the winter.²³

Even though gas pipeline supplies from Russia decreased by 25% year-on-year in Q4 2021,²⁴ it is not clear that by significantly undersupplying the European gas market during this period that Gazprom breached its long-term contracts with European gas suppliers. However, these low gas storage levels, in tandem with the geopolitical tensions following the Russian military build-up on the Ukrainian border, and the uncertainty over the certification of the controversial Nord Stream 2 gas pipeline between Ust-Luga, Russia and Greifswald, Germany, all had a significant impact on market uncertainty during winter 2021, which translated into greater volatility in energy prices.²⁵ This is clearly demonstrated by the near vertical increase in the price for gas in the euro area, as indicated in Figure 1.

¹⁵ Sustainable Energy Authority of Ireland (2021) 'Energy In Ireland: 2021 Report', SEAI, Dublin, https://www.seai.ie/publications/Energy-in-Ireland-2021_Final.pdf

¹⁶ European Commission (2021) 'Autumn 2021 Economic Forecast: from recovery to expansion, amid headwinds', European Commission, Brussels https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/autumn-2021-economic-forecast-recovery-expansion-amid-headwinds_en

¹⁷ Eurostat (2022) 'Natural gas supply statistics', Eurostat, Brussels, April 2022 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Natural_gas_supply_statistics&oldid=562681

¹⁸ Morison, R. & Starn, J. (2021) 'Europe Faces Dire Winter as Nuclear Outages Deepen Energy Crunch', *Bloomberg*, 16 December 2021 <https://www.bloomberg.com/news/articles/2021-12-16/eu-power-markets-face-precarious-january-as-supply-risks-mount#xj4y7vzkg>

¹⁹ Zachmann, G. McWilliams, B. Sgaravatti, G. (2021) 'How serious is Europe's natural gas storage shortfall?' *Bruegel*, Brussels, 21 December 2021 <https://www.bruegel.org/2021/12/how-serious-is-europes-natural-gas-storage-shortfall/>

²⁰ European Commission (2022) 'Questions and Answers on the new EU rules on gas storage', European Commission, Brussels, 23 March 2022 https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_1937

²¹ Ibid.

²² Ibid.

²³ Ibid.

²⁴ International Energy Agency (2022) 'Russian Supplies to Global Energy Markets', IEA, Paris <https://www.iea.org/reports/russian-supplies-to-global-energy-markets/gas-market-and-russian-supply-2>

²⁵ European Commission (2022) 'Questions and Answers on the new EU rules on gas storage', European Commission, Brussels, 23 March 2022 https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_1937

The Impacts of the Russian Invasion of Ukraine on the EU Energy Sector

It is important to note that the considerable levels of energy price inflation in the euro area were discernible long before the Russian invasion of Ukraine in February 2022. This shows that the extreme market volatility which has led to a surge in consumer prices for energy is not solely a consequence of the war in Europe. However, Russia's invasion of Ukraine has clearly intensified uncertainty in energy markets and has exacerbated the already upward trend of energy prices in Europe. Indeed, when Russia launched its war on Ukraine on 24 February 2022, global markets were immediately thrown into turmoil.²⁶ In the period since the war began, energy prices have continued to surge and The World Bank expects that, because of the conflict, natural gas prices in Europe will be twice as high in 2022 as they were in 2021.²⁷

As it stands, Russia is the largest supplier of natural gas to the EU.²⁸ In 2021, it accounted for approximately 45% of the EU's total gas imports.²⁹ In light of Russia's invasion of Ukraine, the EU has issued a wide range of economic sanctions against Russia, including measures which target the country's energy sector. On Tuesday, 8 March 2022, the European Commission published the REPowerEU Communication³⁰ which included the

ambitious objective to reduce European demand for Russian gas by two-thirds before the end of 2022.³¹

Speaking in early March 2022, Eamon Ryan, Irish Minister for Climate Action and Environment,³² cautioned that any disruption of Russian gas supplies, even for countries which do not rely on direct imports from Russia, such as Ireland, would maintain upward pressure on gas prices across Europe. This would, in turn, have knock-on effects on electricity prices.³³ The data for energy prices in February and March 2022, as illustrated in Figure 1, confirm the Minister's concerns.

Section II Tackling Energy Price Inflation – The Policy Toolbox

Recent volatility in the price of energy is not a new phenomenon and first began to take shape after the onset of the COVID-19 pandemic. This section will examine the monetary and fiscal policy measures that have been implemented in response to this recent phase of energy price inflation.

The European Central Bank's Response to Higher Inflation

Annual energy price inflation of over 25% was recorded in 2021. This was the largest single contributory factor to the

²⁶ Inman, P., Davies, R. & Kollewe, J. (2022) 'Ukraine crisis: commodities prices surge as stock markets slump', *The Guardian*, 24 February 2022 <https://www.theguardian.com/business/2022/feb/24/gas-and-oil-prices-surge-amid-fears-of-global-energy-shortage-russia-ukraine>

²⁷ The World Bank (2022) 'Food and Energy Price Shocks from Ukraine War Could Last for Years', *The World Bank*, 26 April 2022

<https://www.worldbank.org/en/news/press-release/2022/04/26/food-and-energy-price-shocks-from-ukraine-war>

²⁸ Eurostat (2022) 'EU Imports of energy products - recent developments', *Eurostat*, Brussels, April 2022 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_imports_of_energy_products_-_recent_developments&oldid=571112

²⁹ International Energy Agency (2022) 'A 10-Point Plan to Reduce the European Union's Reliance on Russian Natural Gas', *IEA*, Paris, March 2022

<https://www.iea.org/reports/a-10-point-plan-to-reduce-the-european-unions-reliance-on-russian-natural-gas>

³⁰ European Commission (2022) 'REPowerEU: Joint European action for more affordable, secure and sustainable energy', *European Commission*, Brussels, 08 March 2022

https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1511

³¹ *Ibid.*

³² Eamon Ryan TD is the Minister for the Environment, Climate and Communications and the Minister for Transport in the Government of Ireland.

³³ Houses of the Oireachtas (2022) 'Natural Gas Imports', *Dáil Éireann Debate*, 01 March 2022, <https://www.oireachtas.ie/en/debates/question/2022-03-01/190/>

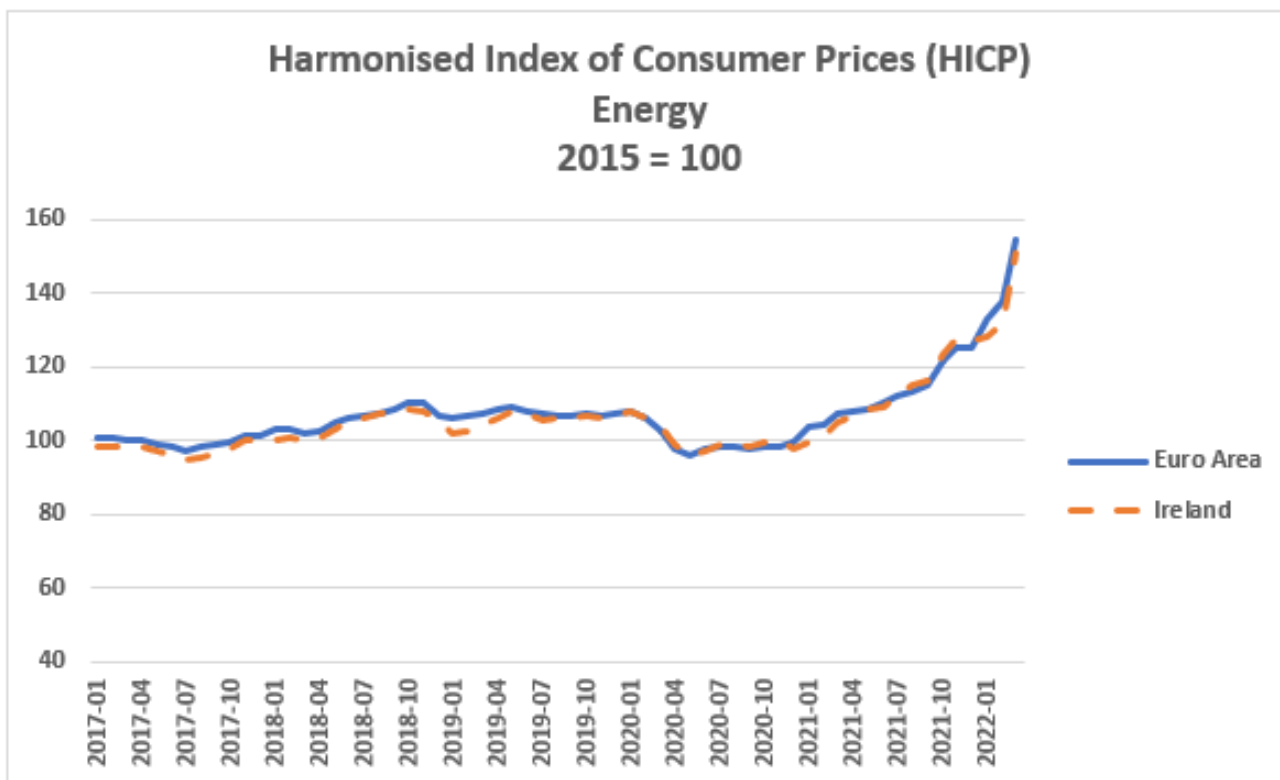


Figure 2 – Source: Eurostat

5% increase in the Eurozone’s Harmonised Index of Consumer Prices (HICP)³⁴ that year. This surge in the cost of living, which has thus far continued throughout 2022, has exerted pressure on the European Central Bank (ECB) to respond by increasing interest rates.

The ECB’s updated monetary policy strategy, adopted in July 2021, sets out the conditions for any future ECB monetary policy decisions regarding its interest rates. The strategy document states that the ECB will target 2% inflation over the medium term, which “may also imply a transitory period in which inflation is moderately above target”.³⁵ Nonetheless, the ECB’s strategy states that it is “committed to setting its monetary policy to ensure that inflation stabilises at its two per cent target in the medium term,” with its main tool to achieve this being the ECB interest rates.³⁶

Therefore, according to its strategy, for the ECB to increase its interest rates, it must expect inflation to be above the level of 2% over the medium-term. ECB macroeconomic projections for June 2022 show forecasted inflation across the euro area of 3.5% in 2023 and 2.1% in 2024. This is broadly consistent with other professional forecasts conducted in the second quarter of 2022.³⁷ While the ECB has acknowledged the inaccuracy of some of its forecasts in recent months,³⁸ it nonetheless still predicts that inflation will peak in 2022 and will decline in the second half of the year.³⁹

There have been comparisons made between the similarly high levels of inflation across the euro area and in the United States, where 8.6% annual inflation was recorded in May 2022, while inflation across the euro area for the same period was 8.1%.

³⁴ The Harmonised Index of Consumer Prices is a metric used to measure and compare inflation across the euro area.

³⁵ European Central Bank (2021) ‘The ECB’s monetary policy strategy statement’, ECB, Frankfurt https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.en.html

³⁶ Ibid.

³⁷ European Central Bank (2022) ‘Eurosysteem staff macroeconomic projections for the euro area, June 2022’ ECB, Frankfurt, 10 March 2022 https://www.ecb.europa.eu/pub/projections/html/ecb.projections202203_ecbstaff~44f998dfd7.en.html

³⁸ Arnold, M. (2022) ‘ECB issues mea culpa for poor inflation forecasts’, *Financial Times*, 28 April 2022 <https://www.ft.com/content/58d45527-8d57-43c3-b2b0-d77a19d101b8>

³⁹ Ibid.

In March 2022, the US Federal Reserve took the decision to raise its baseline interest rate by 0.5% (50 basis points) and announced that it intended to unwind its asset purchase programme,⁴⁰ with a further increase of 50 basis points implemented in May 2022.⁴¹ In June 2022, the Federal Reserve raised rates by 0.75% (75 basis points), the first such increase since 1994, and announced that it expected rates to rise to at least 3% in 2022.⁴² Given these dramatic measures by the Federal Reserve to seek to arrest the increase in inflation in the US, it is worth examining why the ECB has not similarly chosen to begin implementing interest rate increases to date.

There are several reasons for this difference in approach. Core inflation, which excludes typically volatile energy and food prices from the price index, reveals a contrasting picture across both the US and the euro area, as is evidenced in Figure 3, below. Over the past five years, average annual core inflation across the euro area and Ireland remains below the ECB's target of 2%⁴³ while core inflation of 6.2% in the US for April 2022 shows that above-target inflation in the United States has become more entrenched in different sectors of the economy.

Similarly, increases in the cost of labour remain lower in the euro area than in the United States.⁴⁵ This suggests that the

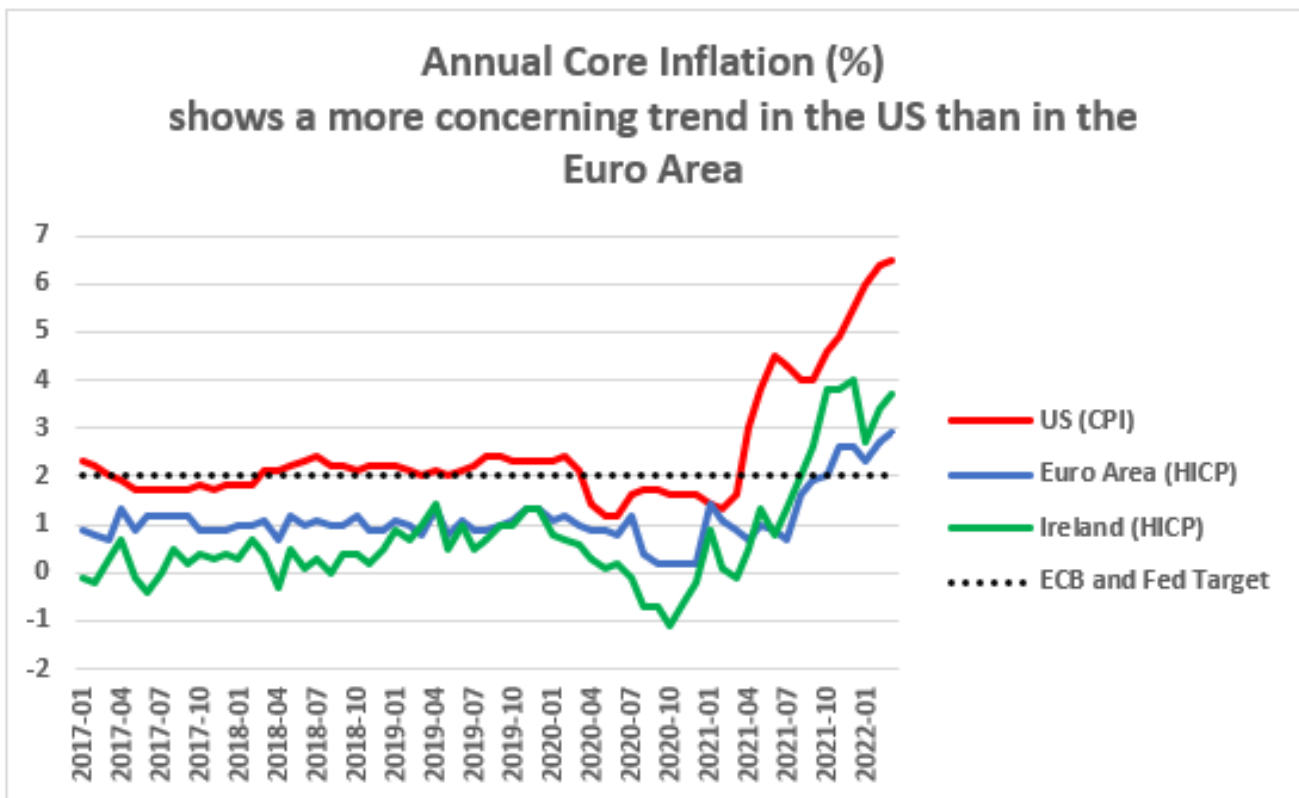


Figure 3 – Source: Eurostat; Bureau of Labor Statistics⁴⁴

⁴⁰ Board of Governors of the Federal Reserve System (2022a) 'Federal Reserve issues FOMC statement', *Board of Governors of the Federal Reserve System*, Washington, D.C., 16 March 2022

<https://www.federalreserve.gov/newsevents/pressreleases/monetary20220316a.htm>

⁴¹ Board of Governors of the Federal Reserve System (2022b) 'Federal Reserve issues FOMC statement', *Board of Governors of the Federal Reserve System*, Washington, D.C., 4 May 2022 <https://www.federalreserve.gov/newsevents/pressreleases/monetary20220504a.htm>

⁴² Rushe, D. (2022) 'Federal Reserve announces biggest interest rate hike since 1994', *The Guardian*, 15 June 2022 <https://www.theguardian.com/business/2022/jun/15/interest-rate-us-latest-increase-federal-reserve>

⁴³ Average annual core inflation for the euro area from January 2017 to March 2022 was approximately 1.1% in the euro area while it was just over 0.7% in Ireland. In the US, the same figure was just under 2.5%.

⁴⁴ Inflation for the euro area and Ireland is measured using the HICP excluding food, energy, tobacco, and alcohol products while the US measurement uses CPI inflation excluding food and energy products.

⁴⁵ The latest comparable data available at the time of writing for the euro area can be found here: Eurostat (2022) 'Labour cost index – recent trends', *Eurostat*, Brussels, 27 June 2022 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Labour_cost_index_-_recent_trends, and for the United States, here: US Bureau of Labor Statistics (2022) 'Economic News Release, USDL-22-0105', *Bureau of Labor Statistics*, Washington, D.C., 28 January 2022 https://www.bls.gov/news.release/archives/eci_01282022.htm

possibility of a wage-price spiral, where wages increase in response to increased prices and lead to spiralling levels of inflation, is less probable in the euro area than in the US.⁴⁶

The Federal Reserve has been more aggressive in responding to inflation in the US than the ECB has been in the euro area. Nevertheless, since early in 2022, the ECB has kept the door open to an increase in interest rates during this year, as was stated by Frank Elderson, a Member of the Executive Board of the ECB, at an IIEA webinar in March 2022.⁴⁷ There are now expectations amongst the markets that the ECB will begin an interest rate lift-off in July 2022.⁴⁸ Indeed, both the ECB President, Christine Lagarde, and Chief Economist, Philip Lane, have indicated that two successive rate rises of at least 25 basis points are planned for each of the two upcoming meetings of the ECB Governing Council in July and September 2022.⁴⁹ At its previous Governing Council meeting in June 2022, the ECB announced that it would discontinue its main quantitative easing instrument, the asset purchase programme (APP), after it had also previously unwound its pandemic emergency purchase programme (PEPP).⁵⁰ Both instruments allowed the ECB to intervene in the bond markets in order to keep interest rates low.

With annual core inflation across the euro area estimated to be 3.8% for May 2022,⁵¹ the ECB will pay close attention to whether inflation expectations rise significantly above the ECB's 2% target. There are signs

that medium-term inflation expectations by consumers, markets and professional forecasters are beginning to reach or exceed the ECB's 2% target. If consumers, markets and forecasters continue to expect that medium-to-long-term inflation will be above 2%, the ECB will no doubt come under further pressure to move more aggressively to tighten its monetary policy in the coming months.

Fiscal Measures to Address Rising Energy Prices

The European Response

As the increase in energy prices began to erode consumers' purchasing power, the ECB regarded energy price inflation as transitory in nature and insisted that its monetary policy would remain accommodative. In addition, policymakers across the EU turned their attention to the ways in which fiscal policy could support those consumers worst affected by increases in energy prices.

In October 2021, the European Commission published a Communication which presented a toolbox of measures, compliant with EU state aid rules, which Member States could utilise to lessen the impact of increased energy prices on consumers' disposable incomes.⁵² Over the short-term, the Commission recommended a suite of measures including targeted reductions in tax rates, temporary deferrals of bill payments, and emergency income support for vulnerable customers.

⁴⁶ Arnold, M. & Smith, C. (2022) 'ECB opens door to July rate rise while stressing contrast with US', *Financial Times*, 27 April 2022

<https://www.ft.com/content/a4b63bca-252f-4a77-9415-a898975a0c81>

⁴⁷ Institute of International and European Affairs (2022) 'The Macroeconomic Outlook for the Euro Area and its Implications for the ECB's Monetary Policy', IIEA, Dublin, 24 March 2022 <https://www.iiea.com/events/the-macroeconomic-outlook-for-the-euro-area-and-its-implications-for-the-ecbs-monetary-policy>

⁴⁸ Arnold, M. & Stubbington, T. (2022) 'ECB takes hawkish turn to counter record-high inflation', *Financial Times*, 9 June 2022 <https://www.ft.com/content/014d822a-0f59-4beb-a54f-ec94f3900188>

⁴⁹ Ibid.

⁵⁰ European Central Bank (2022) 'Pandemic emergency purchase programme (PEPP)', ECB, Frankfurt, 24 June 2022 <https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html>

⁵¹ Eurostat (2022) 'Euro Indicators, May 2022: Annual inflation up to 8.1% in the euro area', Eurostat, Brussels, 17 June 2022 <https://ec.europa.eu/eurostat/documents/2995521/14644605/2-17062022-AP-EN.pdf/1491c8b5-35e4-cdec-b02a-101a14a912ad>

⁵² European Commission (2021) 'Tackling rising energy prices: a toolbox for action and support', European Commission, Brussels, 13 October 2021 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0660&from=EN>

Analysis by Brussels-based economics think tank, Bruegel, shows that at least 19 EU Member States introduced measures from September 2021 to May 2022 to reduce taxes on energy and VAT, while at least 23 EU countries implemented transfers to vulnerable groups.⁵³

The Irish Response

In Ireland, the Government's response to the increase in the cost of living has focused on providing direct financial supports to those in receipt of social welfare payments, temporary tax relief to consumers and businesses, and a rebate on the cost of energy bills to be paid to all electricity accountholders in the state. The Irish Government has increased the winter fuel allowance⁵⁴ and has provided every electricity accountholder with a €100 payment, and a further €200 payment provided subsequently in the March/April 2022 billing cycle. In addition, the Government has reduced excise duty on petrol and diesel until October 2022 and has temporarily reduced value-added tax (VAT) on energy bills for the same period.

It is argued here that the effectiveness of the short-term fiscal measures mobilised thus far in 2022 by the Irish Government in response to the cost-of-living crisis will be determined by the degree to which they alleviate the pressures being experienced by consumers and businesses without contributing to further inflation. In this respect, should existing supply chain pressures persist, for example due to a possible Russian fossil fuel embargo implemented by the EU, or further aggressive trade countermeasures towards EU Member States by Gazprom,⁵⁵ there is a risk that government fiscal stimulus will result in further demand-led inflation, placing the onus on central banks to act aggressively to contain spiralling inflation.

Regardless of whether the measures announced by the Irish Government have their intended impact, and given that at the very least, energy prices are expected to remain close to current levels over the coming months, the Government will face political pressure to maintain its current fiscal supports. In particular, the planned reimposition of the 13.5% VAT rate on energy bills from October 2022 is likely to prove politically challenging, while the implementation of pledged increases in the carbon tax has already caused political tensions within the Government.

Despite this, the short-term measures announced by the Government to tackle energy price inflation, while necessary, are a sticking plaster to cover the wound that resulted from the structural issues outlined in Section I and can only realistically provide short-term relief. Retaining these measures over the longer-term would risk precipitating further energy price inflation in Ireland, which in turn would result in even higher prices for consumers.

To conclude, Section III will outline some of the important measures that Irish and EU policymakers should consider over the medium-to-longer-term to address the impact of energy prices on the cost of living.

Section III - Recommendations for a More Resilient European Energy Sector

A significant amount of the literature discussing the impact of the current energy crisis on consumer prices within the EU has focused on short-term policy considerations to alleviate this burden. Section III of this paper will, instead, outline recommendations that policymakers in

⁵³ Sgaravatti, G. Tagliapietra, S. Zachmann, G. (2022), 'National policies to shield consumers from rising energy prices', *Bruegel*, 13 June 2022 <https://www.bruegel.org/publications/datasets/national-policies-to-shield-consumers-from-rising-energy-prices/>

⁵⁴ The winter fuel allowance is a means-tested payment paid to people in receipt of particular social welfare benefits in Ireland in order to subsidise the cost of home heating during the winter months.

⁵⁵ Euronews (2022) 'Russia's Gazprom suspends supplies to Poland and Bulgaria', *Euronews*, 27 April 2022 <https://www.euronews.com/2022/04/26/russia-s-gazprom-suspends-supplies-to-poland-and-bulgaria>

Ireland and the EU should consider over the medium-to-long term.

The Joint Procurement of Gas Imports

Natural gas serves as a transition fuel in the European energy mix as the EU moves to net-zero emissions by 2050. It is expected to continue to play an important role in consumption and generation until 2030, after which point it will be phased out.⁵⁶

As previously outlined in Sections I and II, the EU faces a potential crisis concerning its gas supplies arising from the geopolitical impact of the war in Ukraine. Moreover, with the EU still dependent on Russian gas in the short run, and with Russia's economic incentive to keep gas prices high over this period,⁵⁷ the EU may continue to experience price pressures within its energy markets. However, with the EU diversifying its supplies away from Russian gas, it will be forced to contemplate the purchase of alternative gas supplies over the short, medium and longer term, including from countries such as the United States, Algeria and Qatar.

Such a reality raises the possible spectre of national governments of EU Member States competing with one another to secure limited supplies of gas. This would further add to the cost of living in the EU by forcing EU Member States to outbid each other to secure new supplies of gas, thereby driving the price paid by consumers upwards. Moreover, such a situation has the potential to create political tensions between Member States which would undermine the unity

and solidarity shown by the EU in response to Russia's invasion of Ukraine.⁵⁸

In response to its current predicament, the European Commission published a major strategy document, entitled the REPowerEU Agenda, which builds on its March Communication of the same title. The strategy contains a set of actions designed to reduce the EU's dependence on Russian energy over the coming decade.⁵⁹ One of the ideas posited within the REPowerEU strategy is to consider developing a 'joint purchasing mechanism' responsible for jointly contracting gas on behalf of EU Member States.

The European Commission should proceed with creating such a joint purchasing mechanism without delay and should seek to jointly procure alternative gas supplies over the short-term and also over the medium and longer term. The Commission, acting on behalf of the Member States, would command a stronger negotiating position in discussions with energy exporters than if Member States were to negotiate individually. This would have an immediate and sustained impact on reducing the cost-of-living for European consumers and would prevent emergent political disputes and any bidding wars amongst the Member States.

In the short-term, EU joint procurement of new gas supplies would provide an opportunity for the EU to directly address gas shortages in the countries that are worst affected by the EU's decoupling from Russian gas,⁶⁰ rather than to the

⁵⁶ European Commission (2022) 'Questions and Answers on the EU Taxonomy Complementary Climate Delegated Act Covering certain nuclear and gas activities', *European Commission*, Brussels, 2 February 2022 https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_712

⁵⁷ Blanchard and Pisani-Ferry (2022) argue that EU demand for Russian gas is relatively inelastic over the short-run, which provides an incentive for Russia to keep gas prices high over this period. Access this paper here: <https://www.piie.com/sites/default/files/documents/pb22-5.pdf>

⁵⁸ See for example, the dispute between Italy and Spain who are competing to secure alternative supplies of gas from Algeria. See: Orihuela, R., Albanese, C. & Shiryayevskaya, A. (2022) 'Italy and Spain Hold Talks to Head Off Tension over Algerian Gas', *Bloomberg*, 12 April 2022 <https://www.bloomberg.com/news/articles/2022-04-12/italy-and-spain-hold-talks-to-head-off-tension-over-algeria-gas>

⁵⁹ European Commission (2022), 'RePowerEU Plan', *European Commission*, Brussels, 18 May 2022 https://eur-lex.europa.eu/resource.html?uri=cellar:fc930f14-d7ae-11ec-a95f-01aa75ed71a1.0001.02/DOC_1&format=PDF

⁶⁰ For a detailed breakdown of EU Member States' dependence on Russian gas, see McWilliams, B., Sgaravatti, G., Tagliapietra, S. & Zachmann, G. (2022) 'Preparing for the first winter without Russian gas', *Bruegel*, 28 February 2022 <https://www.bruegel.org/2022/02/preparing-for-the-first-winter-without-russian-gas/>

highest bidder. Perhaps most importantly, such a measure would help to safeguard the health and wellbeing of European households and businesses, especially in the winter months. In the medium and longer term, it would allow the EU to shore up its gas reserves and attenuate energy price inflation during periods of high demand for gas.

The use of a joint procurement mechanism by the European Commission in crisis situations has not been without precedent, in light of the Commission's approach to the joint procurement and distribution of vaccines during the COVID-19 crisis. Despite some early hiccups concerning the speed of its vaccine rollout plan, the Commission's joint approach ultimately allowed it to secure COVID-19 vaccines at a lower price than the individual Member States could have achieved acting alone.

Enhanced Grid Interconnection

In the long-term, however, the EU will not be able to achieve greater energy security through a continued reliance on fossil fuels. The recent drastic price reductions in the cost of solar and wind power mean that in 2022, renewables are not just cost-competitive with fossil fuels but are in fact cheaper whenever new electricity generation is required.⁶¹ Large-scale capital investment in clean energy sources, such as wind and solar, will help to increase security of supply in Europe and will contribute to the EU's geopolitical ambition of developing greater strategic autonomy.⁶² Importantly, it will also lower the cost of electricity for consumers.

Modelling from the International Energy Agency shows that if developed economies

adopt policies aligned with net zero emissions, exposure to price volatility will decrease and average household energy bills will be considerably lower by 2030, and lower still by mid-century.⁶³ Hence, there is a strong cost-based incentive to implement energy policies that are aligned with net zero.

Of course, the weather-dependent nature of electricity from wind and solar energy means that it is not impervious to price volatility, which can contribute to higher, and lower, consumer bills. To increase predictability, reliability and resilience in the energy system, European policymakers should substantially increase investment in renewable energy infrastructure.

The Important Role of Grid Interconnection for Ireland

Interconnections between grids are an important way of both providing flexibility to the European power sector, ensuring security of supply, and removing grid congestion. Interconnection also ensures that electricity can flow to where it is most valued and that consumers benefit from international competition and, as a result, lower prices.⁶⁴

Greater grid interconnection would also help to remove the need for future price-related interventions in energy markets. In May 2022, the European Commission approved the Portuguese and Spanish price cap on gas for 12 months.⁶⁵ This arrangement, which waives current pricing rules, was granted on the grounds that both countries have high levels of renewable energy in the mix but suffer from poor interconnection with the rest of Europe. To move to a genuinely integrated European

⁶¹ International Renewable Energy Agency (2019) 'A New World: The Geopolitics of the Energy Transition', IRENA, Abu Dhabi, 2019 https://irena.org/media/Files/IRENA/Agency/Publication/2019/Jan/Global_commission_geopolitics_new_world_2019.pdf

⁶² European Commission (2020) 'In focus: Renewable energy in Europe', European Commission, Brussels, 18 March 2020 https://ec.europa.eu/info/news/focus-renewable-energy-europe-2020-mar-18_en

⁶³ International Energy Agency (2021) 'World Energy Outlook 2021, Prices and affordability', IEA, Paris <https://www.iea.org/reports/world-energy-outlook-2021/prices-and-affordability>

⁶⁴ Department of the Environment, Climate and Communications (2018) 'Draft National Policy on Electricity Interconnection in Ireland', DECC, Updated: 29 June 2022 <https://www.gov.ie/en/consultation/6a685-draft-national-policy-on-electricity-interconnection-in-ireland-public-consultation/>

⁶⁵ Heller, F. (2022) 'EU Commission Approves Spanish-Portuguese Plan to Cap Gas Prices', Euractiv, 10 May 2022 <https://www.euractiv.com/section/energy-environment/news/eu-commission-approves-spanish-portuguese-plan-to-cap-gas-prices/>

electricity market, greater electricity interconnection is needed.

For Ireland, electricity interconnection is a strategically important tool and affects the three pillars of Irish energy policy – sustainability, security of supply, and competitiveness.⁶⁶ At present, Ireland currently has an electricity interconnection with Northern Ireland and with Great Britain.⁶⁷ In May 2022, An Bord Pleanála approved the Celtic Interconnector – a subsea link which facilitates the exchange of electricity between Ireland and France.⁶⁸ ⁶⁹ This connection is expected to be operational by 2026, and once on-stream it will be Ireland's only electricity interconnection to the EU.

Electricity interconnectors can flow in both 'import' and 'export' directions. This helps to lower the long-term costs of electricity for the consumer.⁷⁰ At times of high prices in Ireland, interconnectors can facilitate the importation of cheaper electricity from other markets. Equally, interconnections offer an opportunity for increased energy exports to European markets when necessary. Ireland is in the process of scaling up its offshore wind capabilities and intends to produce 5 Gigawatts of offshore wind energy by 2030.⁷¹ Ireland has considerable potential in this area, but to derive the full benefit of wind resources, greater grid interconnection will be crucial.

A Second Interconnector with France?

The Celtic Interconnector will be an important asset as Ireland accelerates its transition towards wind energy as a base for electricity generation. This project was designated as a Project of Common Interest by the EU.⁷² Alongside an expedited planning process, the Celtic Interconnector received €530.7 million of co-financing, approximately 50% of the total cost, to complete the design and construction of the interconnection.⁷³

At present, there are no plans to develop another electricity interconnection between Ireland and France. EirGrid, the Irish electricity grid operator, should propose the development of a second interconnector between the two countries. As part of the REPowerEU plan,⁷⁴ the Commission has launched a new facility for proposals for Projects of Common Interest. For Ireland, in a future decarbonised electricity system, this connection will be necessary to manage security of supply and to help keep consumer prices down. As such, this proposal could be seen as a vital infrastructure project linking an island on the periphery of Europe to the EU's electricity market.

⁶⁶ Department of the Environment, Climate and Communications (2018) 'Draft National Policy on Electricity Interconnection in Ireland', DECC, Updated: 29 June 2022 <https://www.gov.ie/en/consultation/6a685-draft-national-policy-on-electricity-interconnection-in-ireland-public-consultation/>

⁶⁷ Ibid.

⁶⁸ The Celtic Interconnector is managed by EirGrid, the operators of the Irish national electricity grid, and its French equivalent, Réseau de Transport d'Electricité.

⁶⁹ O'Halloran, B. (2022) 'Electricity interconnector to France gets green light from An Bord Pleanála', *The Irish Times*, 23 May 2022 <https://www.irishtimes.com/business/energy-and-resources/electricity-interconnector-to-france-gets-green-light-from-an-bord-pleanala-1.4886224>

⁷⁰ Department of the Environment, Climate and Communications (2018) 'Draft National Policy on Electricity Interconnection in Ireland', DECC, Updated: 29 June 2022 <https://www.gov.ie/en/consultation/6a685-draft-national-policy-on-electricity-interconnection-in-ireland-public-consultation/>

⁷¹ Department of the Taoiseach (2020) 'Programme for Government: Our Shared Future' *Department of the Taoiseach*, Updated 7 April 2021 <https://www.gov.ie/en/publication/7e05d-programme-for-government-our-shared-future/>

⁷² Under the Trans-European Networks for Energy Regulation (2013), which aims to link the energy systems of EU countries, Projects of Common Interest (PCIs) are defined as key cross-border energy infrastructure projects. PCIs can benefit from accelerated permitting procedures and funding from the Connecting Europe Facility. In Ireland, An Bord Pleanála is the competent authority for PCIs.

⁷³ EirGrid (undated) Celtic Interconnector, Connecting the electricity grids of Ireland and France, *Eirgrid* <https://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Project-PCI-Information-Brochure.pdf>

⁷⁴ European Commission (2022) 'REPowerEU Plan', *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions*, European Commission, Brussels, 18 May 2022 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN>

The European Internal Energy Market

Since the 1990s, the EU has taken measures to liberalise and harmonise energy markets across the Union through the development of the Internal Energy Market.⁷⁵ The EU wholesale electricity market follows a 'marginal pricing' system,⁷⁶ which ensures that every provider receives the same price for electricity that is being produced at a given moment.⁷⁷

In the EU, electricity producers bid into the market and set a price in accordance with production cost. The auction process goes from cheapest to most expensive, with the cheapest electricity bought first and more expensive sources added subsequently, depending on demand. Renewable energy sources are produced at 'zero' cost, and always cheapest in the mix, hence, are bought first in the wholesale electricity auctions.⁷⁸ Once the full demand is satisfied, every electricity producer obtains the price of the last producer – the marginal producer – from which electricity was bought. This electricity market design incentivises producers to keep costs as low as possible across the EU.⁷⁹

Making the Wholesale Electricity Market fit for Net Zero

At present, natural gas sets the price of electricity in European markets.⁸⁰ As discussed in Section I of this paper, the price of natural gas has increased substantially

since the second half of 2021. Price shocks in gas markets have had a 'contagion effect' and have spilled over into the European wholesale electricity market, breaking several price records.⁸¹ This sharp increase in the price of gas and, by extension, electricity, has placed significant strains on the proper functioning of the market. This strain has been observable, but less pronounced, for several years.

As the EU strives to meet the objective of carbon neutrality by 2050, there is a growing mismatch between market structures and climate and energy policies.⁸² The existing structure of the European wholesale electricity market has served the EU well in the past, but it is not currently optimised to manage an increased share of renewables in the energy mix.

It is understandable that, at present, the policy focus in Europe is centred on addressing short-term measures to alleviate the impacts of energy inflation on citizens. However, the European Commission expects energy prices in Europe to remain high for the remainder of 2022 and until 2024 or 2025.⁸³ These price projections indicate that the wholesale market will struggle to operate efficiently over the medium-term given such oscillations in demand, supply, and price.

Therefore, regulators and policymakers should adopt a systemic approach and implement reforms to the way in which electricity is bought and sold to ensure that Europe has a wholesale electricity

⁷⁵ Ciucci, M. (2021), 'Internal Energy Market - Fact Sheets on the European Union', *European Parliament Publication Office*, Brussels, October 2021

<https://www.europarl.europa.eu/factsheets/en/sheet/45/internal-energy-market>

⁷⁶ In this paper, we are referring to the day-ahead and intraday electricity markets. More information on the nature and structure of the EU electricity markets can be found here: <https://fsr.eui.eu/electricity-markets-in-the-eu/>

⁷⁷ European Commission (2022), 'EU energy prices', *European Commission*, Brussels https://energy.ec.europa.eu/topics/markets-and-consumers/eu-energy-prices_en

⁷⁸ European Commission (2022) 'Energy prices and costs in Europe', *European Commission*, Brussels https://energy.ec.europa.eu/data-and-analysis/energy-prices-and-costs-europe_en

⁷⁹ Ibid.

⁸⁰ Bond, I. Cornago, E. & Meyers, Z. (2021) 'Why Have Europe's Energy Prices Spiked and What Can the EU Do about Them?', *Centre for European Reform*, London, 28 October 2021 <https://www.cer.eu/insights/why-have-europes-energy-prices-spiked>

⁸¹ Simon, F. & Taylor, K. (2022) 'EU leaders to debate "contagion effect" of gas prices on electricity', *Euractiv*, 25 March 2022 <https://www.euractiv.com/section/energy/news/eu-leaders-to-debate-contagion-effect-of-gas-prices-on-electricity/>

⁸² Vasconcelos, J. (2022) 'EU Electricity Reform', *EUI Florence School of Regulation*, Florence, May 2022 https://fsr.eui.eu/wp-content/uploads/2022/05/eu_electricity_reform_may2022.pdf

⁸³ European Commission (2022) 'Questions and Answers on the Commission Communication on Short-Term Energy Market Interventions and Long Term Improvements to the Electricity Market Design', *European Commission*, Brussels, 18 May 2022 https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_3141

market that meets the original objectives of increased security, flexibility, and affordability, while contributing to the decarbonisation of the energy system.⁸⁴ As the EU reappraises its energy policy following the Russian invasion of Ukraine, there is now an opportunity to 'future-proof' the European electricity market design.

The Move to a Model of Locational Marginal Pricing

One opportunity to improve the wholesale market function over the long-term is to move to a system of locational marginal pricing (LMP). This entails establishing different market prices in different places to reflect the value of electricity at different locations, accounting for the local balance of supply and demand and the limits of the transmission system.⁸⁵

The European Commission and the EU Agency for the Cooperation of Energy Regulators (ACER) have recognised the need for greater attention to locational signals in the European market design⁸⁶ while the International Energy Agency classifies LMP as the "pricing model that serves as the benchmark for market design – the textbook ideal that should be the target for policy makers."⁸⁷

The existing pricing model in the EU assumes that power plants will participate in the market for as long as they are competitive.⁸⁸ However, if implemented fully, the EU's energy and climate targets for 2030 would necessitate a decrease in European gas consumption by 30%.⁸⁹ A modification to the pricing system, therefore, is necessary to reflect this updated policy landscape. Analysis from the Florence School of Regulation shows that the wholesale market will work most efficiently and will be able to integrate large-scale renewables if it is based on LMP.⁹⁰

A 2019 assessment of the consequences of implementing LMP in the European market, conducted by Tractebel-Engie, found that it would lead to savings of 4% from introducing this pricing model.^{91 92} The study also finds that locational prices allow for a much more optimal use of flexible units in the electricity market, including storage and demand-side responses, such as wind and solar energy. These flexible units will be instrumental in the decarbonisation of European power markets.

In the absence of locational prices, it is expected that system costs will be 10% higher by 2040. Indeed, the greater the increase of renewables in the energy mix, the more important these benefits from

⁸⁴ Ibid.

⁸⁵ Independent System Operators: New England, 'FAQs: Locational Marginal Pricing' ISO:NE

<https://www.iso-ne.com/participate/support/faq/lmp>

⁸⁶ European Commission (2022) 'REPowerEU Plan', Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, *European Commission*, Brussels, 18 May 2022 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN>

⁸⁷ International Energy Agency (2007) 'Tackling Investment Challenges in Power Generation', IEA, Paris <https://www.iea.org/reports/tackling-investment-challenges-in-power-generation>

⁸⁸ Vasconcelos, J. (2022) 'EU Electricity Reform', *EUI Florence School of Regulation*, Florence, May 2022 https://fsr.eui.eu/wp-content/uploads/2022/05/eu_electricity_reform_may2022.pdf

⁸⁹ European Commission (2022) 'Questions and Answers on REPowerEU: Joint European Action for More Affordable, Secure and Sustainable Energy', *European Commission*, Brussels, 8 March 2022 https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_1512

⁹⁰ EUI Florence School of Regulation (2017) 'The case of locational pricing', *EUI-FSR*, Florence, 30 October 2017 <https://fsr.eui.eu/case-locational-pricing/>

⁹¹ Antonopoulos, G. Vitiello, S. Fulli, G. and Masera, M. (2020) 'Nodal Pricing in the European Internal Electricity Market', *Publications Office of the European Union*, Luxembourg <https://publications.jrc.ec.europa.eu/repository/handle/JRC119977>

⁹² European Commission (2022) 'Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions', *Short-Term Energy Market Interventions and Long Term Improvements to the Electricity Market Design – a Course for Action*, 18 May 2022 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A236%3AFIN&qid=1653032581730>

LMP are expected to become.⁹³ As the EU strives to become the first climate-neutral continent, this is a consideration that should be given further consideration.

Conclusion

Within the EU, the current cost of living crisis has the potential to persist for many more months and possibly for years into the future. Necessarily, policymakers will be forced to respond over the short term to cushion the blow of higher prices for consumers and adopt reactive policies to control surging inflation. However, this should not hinder policymakers from considering the more proactive, longer-term measures that should be adopted to structurally reduce energy-related cost of living pressures for consumers. The current crisis reveals that EU policy has fallen short of the mark with respect to this objective.

In particular, the EU's reliance on Russian energy imports to meet energy demand can now be viewed with hindsight as a glaring policy mistake that left the EU energy market egregiously exposed to geopolitical risk. As a result, it will be ultimately impossible for EU Member States to divest from Russian gas by the end of 2022.

Russia's invasion of Georgia in 2008 and its subsequent annexation of Crimea in 2014 had already clearly demonstrated Vladimir Putin's flagrant disregard for the principles of international law, human rights, and democratic values. Yet still, in 2018, the German Government approved the construction of Nord Stream 2,⁹⁴ a gas pipeline which would have further crystallised the EU's dependence on the Russian economy to meet its energy needs. This project was completed, and it was only

on 22 February 2022, two days in advance of Russia's invasion of Ukraine, that Nord Stream 2 was suspended.⁹⁵

However, as was the case with the global financial crisis, the Eurozone sovereign debt crisis, and indeed the oil crisis in the 1970s, there is an opportunity now for a watershed moment to emerge from the shadow of this monumental policy error. In this new political environment, both the EU and Ireland have an opportunity to take a set of actions today to future-proof their energy markets in order to insulate them from economic, financial, climate-related and geopolitical risks. The recommendations contained within this paper will go some way towards achieving this objective, while protecting consumers and structurally lowering the cost of living over the coming decades.

Moreover, the current crisis should give pause for thought, and indeed, poses an important question: If we did not foresee the implications of such a policy mistake as it was staring us in the face, what then is it that we are not considering today that we will come to regret in the future?

⁹³ Ibid.

⁹⁴ Reuters (2018) 'Germany fully approves Russia-built Nord Stream 2 gas pipeline', 27 March 2018 <https://www.reuters.com/article/us-russia-germany-nordstream-idUSKBN1H311F>

⁹⁵ Euronews (2022) 'Germany moves to suspend certification of Nord stream 2 over Ukraine tensions', *Euronews*, 22 February 2022 <https://www.euronews.com/2022/02/22/germany-moves-to-suspend-certification-of-nord-stream-2-over-ukraine-tensions>

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