

Energy Markets Under Stress: Some Reflections on Lessons From the Energy Crisis in Europe

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There has been an unprecedented energy crisis in Europe affecting gas and electricity prices over the period since August 2021. Due to a combination of a faster than expected recovery from the COVID-19 pandemic, combined with an initially low level of gas stocks following the winter of 2021-2021, prices began to rise. This rise was then exacerbated by the build-up to the full scale Russian Invasion of Ukraine on 24th February 2022 and the subsequent disruption of Russian gas exports to Europe.

This article discusses the lessons of the crisis with a focus on its implications for electricity markets. The crisis gives rise to two sets of reflections based on the nature of energy policy in wartime and on the actual policies discussed and implemented during the crisis. The experience is rich because many European countries have faced the same shock and there has been a degree of experimentation, co-ordination and learning.

We begin by discussing the historical scale of the price shock. The statistics show that the shock to both gas and electricity prices has been historically unprecedented. Next, we discuss how energy policy is different in wartime. This is important because Europe has been in an energy war with Russia, where Europe has attempted to rapidly reduce both its gas consumption and Russian energy dependency, while Russia has strategically restricted gas exports in an attempt to raise gas prices thereby exercising geopolitical leverage. We go on to examine the European Union's (EU) energy policy responses. The EU is responsible for the European single market in electricity and gas (which also formally includes Norway and effectively includes the UK). We then discuss four good and three bad policy responses observed across Europe during the crisis.

We conclude that wholesale electricity and gas markets work in delivering energy security! Europe's efforts to create genuine single markets in electricity, gas and carbon have proved their worth in the crisis. The European experience is that short-term wholesale markets for electricity, gas and carbon work best over a wide area! Markets deliver security of supply by raising prices in times of scarcity, creating profits for some, and leaving some market parties

exposed to unhedged high prices or certain customers' inability to pay. Europe should therefore complete and extend the energy markets it has.

The distributional impact of high prices on European households and industry and the short-run impact on the competitiveness of national industries remains a major concern. Given the prolonged very high prices, intervention of some kind became inevitable. Even countries (notably the UK and Norway) that initially tried to give income subsidies and not regulate prices have done so (though at a high price level). The crisis has also highlighted the link between energy prices and general inflation, suggesting that an additional reason to suppress short-run retail prices is the need to mitigate a shock to general inflation that might trigger a wage-price spiral. Thus, we have learned once again that retail energy markets are always going to be subject to close political oversight.

Moving on to climate policy, we suggest that the crisis is a wake-up call to pay attention to the price impact of net zero policies, where tight linkages between power, heat and transport prices are the consequence of sector coupling *and* high unit prices of energy are also to be expected. Reducing fossil fuel dependency, means increasing weather dependency, as reduced gas supplies have exacerbated the effect of low wind and low hydro output.

Russia has permanently raised the global cost of gas by increasing the need for increased use of LNG (and also by reducing international investment in Russian gas production capacity). This has implications for the use of gas globally, but also for the cost of blue hydrogen (produced from natural gas) and hence synthetic fuels produced from hydrogen.

Perhaps more importantly the undermining of world order reduces the prospects for market based decarbonization based on clear definitions of internationally tradeable property rights and reliable international monitoring of the quality of environmental goods (such as carbon, renewables, green and blue hydrogen). Gas was, arguably, the first globally traded 'low carbon' fuel, whose trade was massively increased in Europe by climate policy. The crisis highlights the long-term risks associated with reliance on global supplies from unfriendly nations.

Finally, we argue that what any energy crisis tends to reveal is the need for more, not less, orthodox economic theory to inform energy policy. Wider, deeper, more global markets are the best way to mitigate country specific supply risks *ex ante*. Actually, responding to price spikes by reducing demand and increasing supply are the sensible responses *ex post*. The sad thing is the world often insists on testing the opposite on the real world economy, e.g. by taking actions which increase demand and reduce supply in the face of price spikes. Economists should stand against such theoretically groundless actions.

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