

CHAPTER 32

A silver lining: Increased urgency for the green transition in Europe

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War and climate change are existential threats to humanity. Misfortunes never come alone, and these two uber-threats are connected and intertwined since a fossil fuel-driven economy results in global warming, which is a key factor in exacerbating conflict risks. However, the energy crisis that has ensued from the war in the Ukraine has a silver lining. It represents an opportunity to reduce our addiction to fossil fuels and speed up the green transition. Future historians looking back at the tragedy of this war may find that this was the time dependence on fossil fuels became, finally, unacceptable. The unprecedented heat waves experienced in the summer of 2022 in the Northern hemisphere brought home the emergency that is global warming. The war made clear, further, that dependence on fossil fuels entails condoning human rights abuses and supporting dictators and authoritarian regimes around the world.¹

The last global crisis, Covid-19, also holds lessons. One could have hoped that a behavioural change would lock-in some of the reduced pollution levels after the lockdown (Arora et al. 2020, Venter et al. 2020, Bonardi et al. 2021), yet the sharp rise in mobility since the end of lockdowns in many countries is ground for scepticism. The lesson is that policy action is needed to lead the green transition since personal idealism will not suffice to achieve sufficient behaviour change. Instead, policies have to provide incentives to curb energy consumption and to boost green energy production.

The war in the Ukraine has been bad news for the climate in the short run, but it may still turn out to be good news for a faster European energy transition in the longer run. It is also a formidable test of European unity. The short-run effect is a sharp increase in the prices of oil and gas and an acute sense of insecurity and of being at the mercy of Russia. Pipeline gas prices in Europe for years had hovered below the €20/MWh mark, and increased to almost €200/MWh by the end of July 2022.² Russia used its gas supplies strategically during the spring, cutting off some countries and not others. By the

¹ While of course some fossil fuel producer countries are democracies, their production alone would not suffice to quench the current thirst for fossil fuels.

² See, for example, <https://tradingeconomics.com/commodity/eu-natural-gas>

summer it had also reduced gas supply to Germany, the main consumer of Russian gas. The European electricity market is integrated, and this has meant that even countries that do not depend on Russian gas (like Spain, for example) have been affected by higher electricity prices. This differential exposure to energy suppliers and sources is proving to be a test of European unity even ahead of the next winter. So far, Europe has not been able to unite behind a single buyer of pipeline gas, which would be able to counter the market power of Russia. The proposal by the European Commission that all countries should reduce their energy use by 15% to be able to face the higher demand in winter met with resistance and was eventually agreed only with large concessions. European countries have been struggling to fill up storages ahead of winter, to diversify energy suppliers, and to secure contracts anywhere in the rest of the world. Some (like Germany) have also decided to reactivate coal mines, the most CO₂ emissions-intensive form of electricity production. And many countries have been attempting to cushion the blow to households by regulating or subsidising retail electricity and gasoline prices.

The green transition will be an enormous task which will take decades to complete. In this contribution, we focus on policy reactions to the extraordinary situation for the short and medium run in European economies. This does not mean that advanced technological and long-run measures are less relevant – they are equally important but simply beyond the scope of the current chapter. Below we first establish the link between global warming and conflict.

WHY GLOBAL WARMING MAKES CONFLICT MORE LIKELY

As discussed in the introductory chapter of this eBook, the presence of natural resources such as oil, gas and minerals has been found to exacerbate conflict risk (Ross 2012, Dube and Vargas 2013, Caselli et al. 2015, Berman et al. 2017). This direct detrimental effect has been detected for the local environments where extraction takes place. However, there are further, indirect pitfalls of a fossil fuel-dependent economy. Beyond the short-run direct effect of resource depletion, there is a medium- and long-run harmful impact through greater global warming. Among many others, Hsiang et al. (2013) and Burke et al. (2015) have shown that temperature spikes have a causal impact on increasing the risk of armed violence. Recent related work has found that – beyond the lower opportunity cost of fighting due to lower yields – one of the key channels through which heat waves trigger additional conflict episodes is greater resource competition, among others between nomadic and sedentary groups (Eberle et al. 2020, McGuirk and Nunn 2020).

The war in Ukraine illustrates a global version of the conflict–climate nexus. European and other democracies' current dependence on fossil fuel puts several autocratic leaders in a position to benefit directly from a surge in gas and oil prices triggered by a conflict. When the leader of a petrostate invades a neighbouring country, energy price spikes may be so substantial that additional revenues more than compensate for the direct costs of the war. Consumers around the world unwillingly end up financing the war.

Being addicted to fossil fuel means that resource wars are de facto subsidised – hardly a promising avenue for peace. Moreover, high fossil fuel prices may eventually reduce consumption, but they also increase the profitability of exploration and exploitation of oil and gas and coal in the ground.

REDUCING FOSSIL FUEL DEPENDENCE I: CURBING ENERGY DEMAND FOR HEATING

A first domain in which large energy savings could be realised is household heating. In Europe, heating is a large contributor to electricity and gas use (though increasingly, cooling is also becoming important). There are basically two ways in which one can rapidly reduce heating consumption. First, many houses and offices are over-heated, which is not only bad for the environment (in terms of CO₂ emissions), but also bad for health (e.g. Ponsonby et al. 1992). Reducing room temperature by 2°C in the winter would, according to estimates, reduce heating consumption by a very sizeable 26% (Palmer et al. 2012). Second, many houses are under-insulated. A representative, cross-European study found that in the leading country, Norway, the heat loss through the house envelope was more than three times smaller than in the laggard countries like the UK, and that old houses can feature heat losses that are five times as large as new dwellings.³

The reason why market forces fail and there is under-insulation and over-heating is obvious. There is a clear externality, as the house occupiers only pay the private monetary cost of heating gas or fuel, without considering the large social costs in terms of pollution and CO₂ emissions. Admittedly, some countries have put in place a Pigovian tax on heating gas and fuel that reduces the wedge between private and social costs of heating, but in most cases the tax is way too low to lead to a full internalisation of the social heating costs (Caselli et al. 2021). One challenge for increasing levies on fuels and CO₂ emissions is popular acceptance. As shown in Douenne and Fabre (2022), in France a revenue-neutral levy would be harshly rejected, and respondents vastly overestimate their net monetary losses. While the authors find that information campaigns can help, an important limit is distrust in authorities. Still, while challenging, several feasible policy measures seem promising, as discussed below.

Policy recommendation #1: Use targeted transfers to compensate the rise in prices of fuel, gas and electricity. Do not use retail price regulation or blanket subsidies.

Several European governments have been reluctant to pass on higher wholesale gas and electricity prices to households. This is partly understandable since an outsized sudden jump in prices would not only have reduced household income sharply but also affected some parts of the population severely and not allowed time to adjust. Thus, Germany has subsidised gasoline at the pump, while France, Italy and Spain have used a mixture

3 See www.tado.com/de-de/presse/deutsche-haeuser-sind-besser-isoliert-als-die-der-meisten-europaeischen-nachbarn (in German).

of price regulation and tax rebates to order to attenuate rising prices. Not passing on increasing wholesale prices to the retail sector means that either energy providers or the budget are bearing the cost. The measures are fiscally unsustainable, and they send the wrong signal to households. The right signal should consist of two parts: first, poor and severely affected households will be protected temporarily from the consequences of the war through targeted transfers; second, higher prices for brown energy are here to stay, so adaptation investment in clean electricity and insulation should be accelerated.

Policy recommendation #2: Announce a post-war brown energy, heating gas and fuel levy. Tax revenues to be fully distributed to citizens, typically in a progressive way.

While emissions trading and Pigovian CO₂ taxes could all work to internalise externalities, a key issue is social acceptance. One way to administer this would be to have, at the end of the year, a bonus-malus invoice for each household, where either they have to pay or they receive a transfer, depending on their consumption. To boost social acceptance of such a levy, it could be made revenue neutral, labelled a ‘climate dividend’ and designed in a progressive, redistributive way to ensure that the policy is not perceived as ‘another tax burden’ and that no situation arises where ‘only the rich can afford heating’. A crucial aspect is explaining that a well-designed green levy can be progressive (rather than regressive) in terms of inequality and leaves most citizens financially better off. As found in the survey evidence in Carattini et al. (2019), the devil lies in the detail and well-designed and communicated levies can gain popular support.

Policy recommendation #3: Subsidising renovation and envelope isolation.

Due to the externality, houses tend to be under-insulated. And additional externalities arise when the person paying the heating costs is not the one deciding on renovation. For example, owner-occupied dwellings are a fifth more likely to be better insulated (Gillingham et al. 2012). Subsidising envelope renovation can reduce these externalities and biases.

REDUCING FOSSIL FUEL DEPENDENCE II: REINVENTING MOBILITY

To reduce the carbon footprint from mobility, there are two options: travel less and travel greener. Concerning the first option, the Covid-19 pandemic has shown that many – though not all – meetings can be organised efficiently through online services such as Zoom. Hence, a simple policy angle could be the following:

Policy recommendation #4: Install a high-level working group to set recommendations and benchmarks for business travel, including the use of offsets.

A high-level working group composed of the representatives of the private sector, the public sector and international organisations could start the conversation about appropriate benchmarks and standards for business travel. It could create incentives to hold online meetings whenever feasible and efficient. The war in the Ukraine may

accelerate this since it puts additional stress not only on the environment but also on budgets. This working group would also need to address the question of quality offsets and their pricing, which in turn could be the basis for pricing of leisure travel.

Travelling greener also implies substituting plane and car travel whenever possible by trains and other non-fossil fuel-driven forms of mobility (for example, within-city travelling by bike). Total emissions per person for a kilometre travelled are more than 40 times larger when travelled by plane than in a (modern) train.⁴ While of course air travel has fewer substitutes for long-haul, inter-continental trips, within Europe most – if not all – international travel could be carried out by train if sufficient investments in modern high-speed and overnight trains were made.

Policy recommendation #5: Stop subsidising planes, start investing massively in trains. At present, planes are implicitly heavily subsidised, as kerosene to a large extent escapes taxation, and environmental externalities are (almost) not internalised. The result is that often it is much cheaper to travel from A to B by plane than train – which completely distorts incentives. As discussed in Thalmann et al. (2021), this must not be the case, as already modest taxes on air travelling lead to sharp reductions in demand, and better train offers – especially high-speed and overnight trains – result in a reshuffling of short-haul travel demand away from plane to train.

Similarly, daily commuting can be made much greener.

Policy recommendation #6: Reduce the relative costs of electric cars with respect to fossil fuel based ones.

While most countries have some taxes on gasoline, they do not (in most cases) fully take into account the negative environmental externality of combustion engines. This again creates distortions in favour of gasoline cars with respect to tramways or electric cars. This can be rectified by higher fuel taxes and/or subsidising of greener means of transport.

REDUCING FOSSIL FUEL DEPENDENCE III: NUDGING ENERGY SAVINGS IN VARIOUS HOUSEHOLD DECISIONS

As stressed by Gowdy (2008), behavioural nudging strategies may be important to consider. Information provision may matter. There is substantial evidence that consumers do filter in local energy prices and lifetime energy costs when making purchasing decisions, and that a key element for energy saving is hence correct information (Houde and Myers 2021). For example, in a field experiment it was found that real-time feedback on resource consumption during showering reduced consumption by 22% (Tiefenbeck et al. 2018). This leads to the following policy recommendation:

4 See www.bbc.com/news/science-environment-49349566

Policy recommendation #7: Stepping up information provision about resource emissions and CO₂ emissions per activity.

FOSTERING GREEN ENERGY SUPPLY

The threat of being cut off from Russian gas has led to some paradoxical decisions. For instance, the German Minister of Energy, a member of the Green Party, had to propose emergency legislation to reactivate mothballed coal (lignite) plants – coal being the biggest contributor to global warming per unit of electricity produced.

Policymakers must work hard to convert this step in the wrong direction into an opportunity eventually. Whenever such backward steps must be taken, governments must make it clear that the reintroduction of highly polluting fossil fuels is temporary – end dates must be set in advance. Moreover, there must be a quid pro quo negotiated with the industry and with other political forces to ensure that the short-term loss is always smaller than the long-term gain for our planet – this closed plant will be reopened but, in exchange, ‘not in my backyard’ regulations stopping wind and solar energy installations must be eliminated.

Policy recommendation #8: Any short-run reintroduction of highly polluting energy sources to replace Russian oil and gas must be (1) explicitly temporary and (2) conditional – in exchange for clear commitments from the broad spectrum of industry and other interests on the elimination of obstacles to the installation of wind and solar energy plants.

An alternative – the elephant in the room in some countries – exists, at the very least for electricity generation, in the form of nuclear. Nuclear energy does not contribute to global warming but it is not risk free; it entails a small risk of nuclear accidents and creates radioactive waste. The International Energy Agency (2022) has estimated that the 413 GW of nuclear energy that are in operation today contribute to the elimination of 1.5 gigatonnes of global emissions and 180 billion cubic metres of gas. This industry, with suitable regulatory changes, may make (in the short run) a sizeable contribution to solving the two key crises the world is confronting: the war (and its associated energy crisis) and climate change. Without nuclear power, achieving our green ambitions will be significantly harder: the ‘low nuclear’ scenario requires \$500 billion more investment for net zero and \$20 billion higher annual electricity bills for consumers.

The first avenue recommended by a recent IEA (2022) report is extending the life of nuclear plants. Around one-third of existing capacity in advanced economies is scheduled to close by 2030. The IEA estimates that life extension allows electricity to be produced safely at a cost of well below \$40 per MWh. This suggests that closing down nuclear plants as quickly as possible is not the right response at this stage.

Policy recommendation #9: Extend plant lifetimes when safely possible, and limited to the short run, to navigate through the current crisis.

Finally, Europe must be able to deal with this crisis together. One of the largest risks Europe faces over the next months and years is a breakdown in solidarity, as Russian gas supplies run out and oil sanctions are implemented. Whereas strong ECB action, large fiscal immediate (SURE) and medium-term (NextGenerationEU) responses and joint purchases of vaccines were decided and implemented soon after the Covid crisis, the “joint purchasing platform” agreed by the Council on 25 March has not yet been put in place and the crucial REPower EU instrument announced on 8 March by the European Commission is bogged down in Council and Parliament and appears unlikely to be approved in time to help with the current stage of the crisis. This crisis is no less existential than the pandemic, and we must be able to deal with it in a similar manner.

In the pipeline gas market there is market power, in principle, at both ends of the pipeline. Russia has been fully exercising its market power, arbitrarily reducing gas supplies and driving up prices. European buyers have been competing to secure storages and have been driving up wholesale prices (of gas and electricity). Europe should unite behind a single buyer for pipeline gas, which could exercise own market power by controlling an offer price (say, €100/MWh). This wholesale price cap would be significantly lower than the current market price but would still imply significant profits for Russia and other gas producers like Norway or Algeria and it would hence still be effective in incentivising a transition to clean, renewable energy sources.

Policy recommendation #10: The EU must recover the urgency of the initial post-pandemic period to ensure a truly European response to the energy crisis, so far absent, including (1) investing in emergency interconnections of gas and electricity; (2) joint purchase and storage of gas; and (3) a fiscal solidarity mechanism able to cushion the blow of the crisis to the most vulnerable countries and citizens.

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