SWITCH OFF PUTIN

UKRAINE ENERGY SOLIDARITY PLAN

How we can stop funding Putin's war machine

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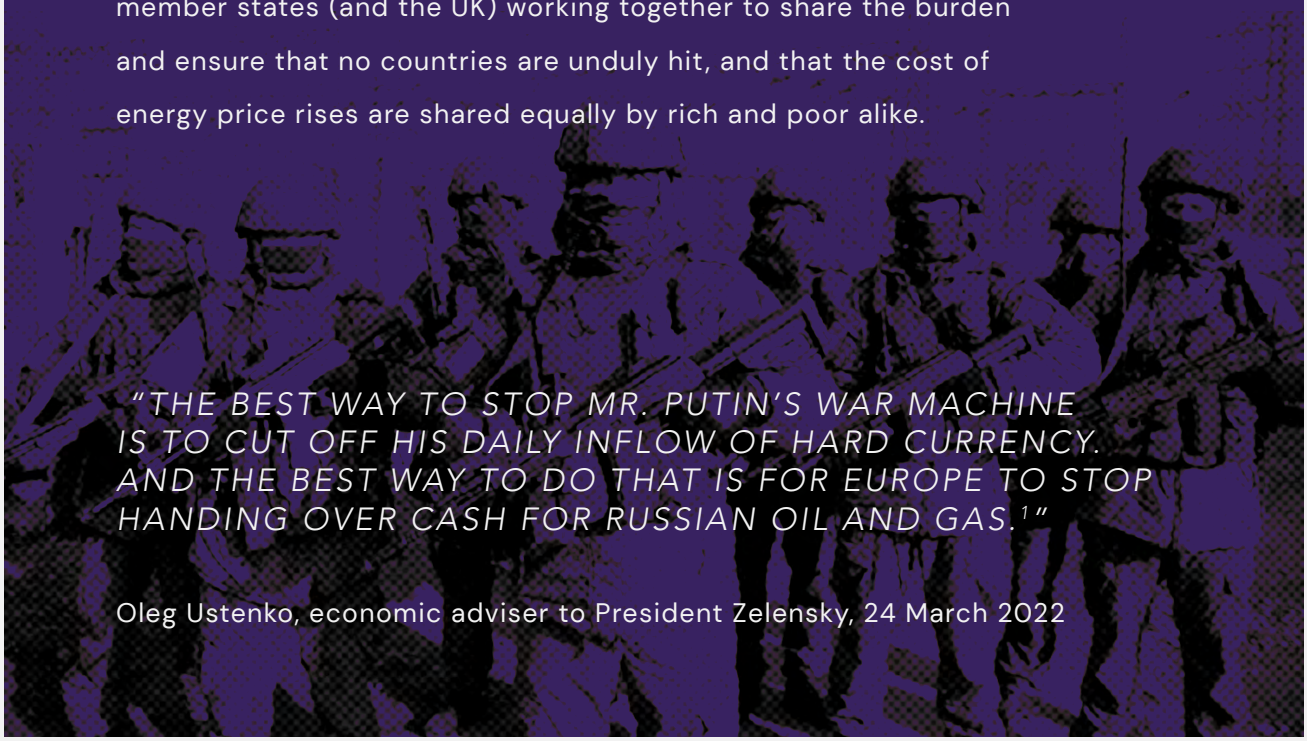
SWITCH OFF PUTIN

REPLANET

EXECUTIVE SUMMARY

The brutality of Vladimir Putin's war on Ukraine has shocked the world. The Russian dictator is now formally accused of war crimes by the United States, and sanctions have been imposed by democratic countries across the world. However, even while condemning Russia's actions - and sending military assistance to Ukraine - European countries are continuing to fund Putin's war machine by buying fossil fuels from Russia. It is estimated that half a billion euros per day flow back to the Kremlin in return for Russian gas, oil and coal. This financial support to Putin undermines the sanctions regime and is morally unjustifiable while Russian bombs and missiles rain down on Ukrainian schools and hospitals.

The Ukrainian government has asked Europe to stop buying Russian fossil fuels. We can and must answer this call. This report outlines how an immediate boycott of Russian fossil fuels can be imposed by Europe, and makes quantified proposals for how the shortfall of energy imports from Russia can be tackled domestically on the continent. This requires an approach of **energy solidarity**, with EU member states (and the UK) working together to share the burden and ensure that no countries are unduly hit, and that the cost of energy price rises are shared equally by rich and poor alike.



"THE BEST WAY TO STOP MR. PUTIN'S WAR MACHINE IS TO CUT OFF HIS DAILY INFLOW OF HARD CURRENCY. AND THE BEST WAY TO DO THAT IS FOR EUROPE TO STOP HANDING OVER CASH FOR RUSSIAN OIL AND GAS.[1]"

Oleg Ustenko, economic adviser to President Zelensky, 24 March 2022

The biggest problem is gas. In total last year Europe imported **155 billion cubic metres** (bcm) of gas from Russia. Replacing this will require:

- LNG diversification and pipeline switching: **30 bcm**
- Heating reduction by 4°C in buildings: **40 bcm**
- Fast-track deployment of additional solar PV and wind: **6 bcm**
- Stop and reverse nuclear phase-out in Germany, Sweden and Belgium: **14 bcm**
- Emergency effort to better utilise French reactor fleet: **26 bcm**
- Heat pumps: **4 bcm**
- Gas to oil in power stations: **6 bcm**
- Gas to coal in power stations: **22 bcm**
- Curtailment to industry: **7 bcm**

Total: **155 bcm**

We conclude it is possible to eliminate Russian gas imports starting immediately in Europe. We can also eliminate Russian oil and coal imports with additional measures outlined below. This can be done without an additional emissions burden to the climate, because carbon-intensive gas to coal fuel switching is outweighed by the overall reduction in emissions from using no Russian fossil fuels.

This will require an **unprecedented level of European solidarity**, a combination of a Marshall Plan and a Berlin Airlift to redistribute energy around the continent as needed and support the transition. We propose energy rationing to ensure that the burden is fairly shared by people, with minimum allowances guaranteed for all, backed by a windfall tax on energy industry profits.

European politicians continue to obfuscate and pander to Russia by refusing to consider a full-scale boycott. In this they are reaping the Faustian bargain made by Gerhard Schroeder and other politicians when they intentionally made European energy security dependent on the dictator in the Kremlin. **Now Europe must pay for this decision - we have no other choice.**

AUTHORS

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INTRODUCTION

The violence and brutality of Vladimir Putin's aggressive war on Ukraine has shocked and appalled the world. Financial sanctions have been imposed on Russia, and military assistance is being rushed from democratic countries to help the embattled resistance in Ukraine. Yet at the same time, Europe is sending over half a billion euros every day directly to the Kremlin because we continue to import vast quantities of Russian oil, gas and coal.

This situation cannot continue. It is morally and politically untenable for Europe to fund Putin's war machine – paying for the same missiles and bombs that are raining down on Ukrainian schools and hospitals – at the same time as supposedly uniting to stop Putin through sanctions. There is only one solution. We must cut off this torrent of money we are sending to the Kremlin by immediately stopping our imports of Russian fossil fuels.

We know that a rapid cessation of Russian fossil fuel imports will be painful for Europe. But that is the price that must be paid for the Faustian bargain that a generation of European politicians made in their choice to support for the Russian dictator rather than rely on domestic energy and reducing fossil fuels. We will need dramatic measures to reduce demand, implemented via some form of energy rationing to ensure the burden is shared fairly and does not disproportionately hurt poorer households and countries. Those EU nations that are least dependent on Putin must assist those that now depend on Russia for virtually all their energy.
This is the Berlin Airlift and the Marshall Plan rolled into one. It requires solidarity, which after all is the central mandate of the EU. Brussels so far has failed to recognise the gravity of the situation. Its proposal to wean the continent off Russian oil and gas imports "well before 2030" is insufficient and an insult to the suffering people and brave soldiers of Ukraine[2]. Ukrainian children are being killed now, every day, in the Russian assault. We should not support Putin financially for a single day, let alone for five more years.

Here we lay out a plan for how this could work. Here we are answering President Zelensky's call for an immediate cessation of all trade with Russia[3]. Our plan is radical but pragmatic. This is not a leap in the dark: the numbers add up. With sufficiently ambitious actions by individuals, companies and governments, we can get rid of Russian fossil fuel imports – not by 2027, but immediately. Many experts now agree that this is the single biggest measure Europe could take to stop Putin's war in Ukraine in the shortest possible time. Without European cash, Putin will not be able to pay his soldiers in Ukraine or the police who maintain his repressive regime at home. We cannot continue to subsidise the war criminal in the Kremlin.

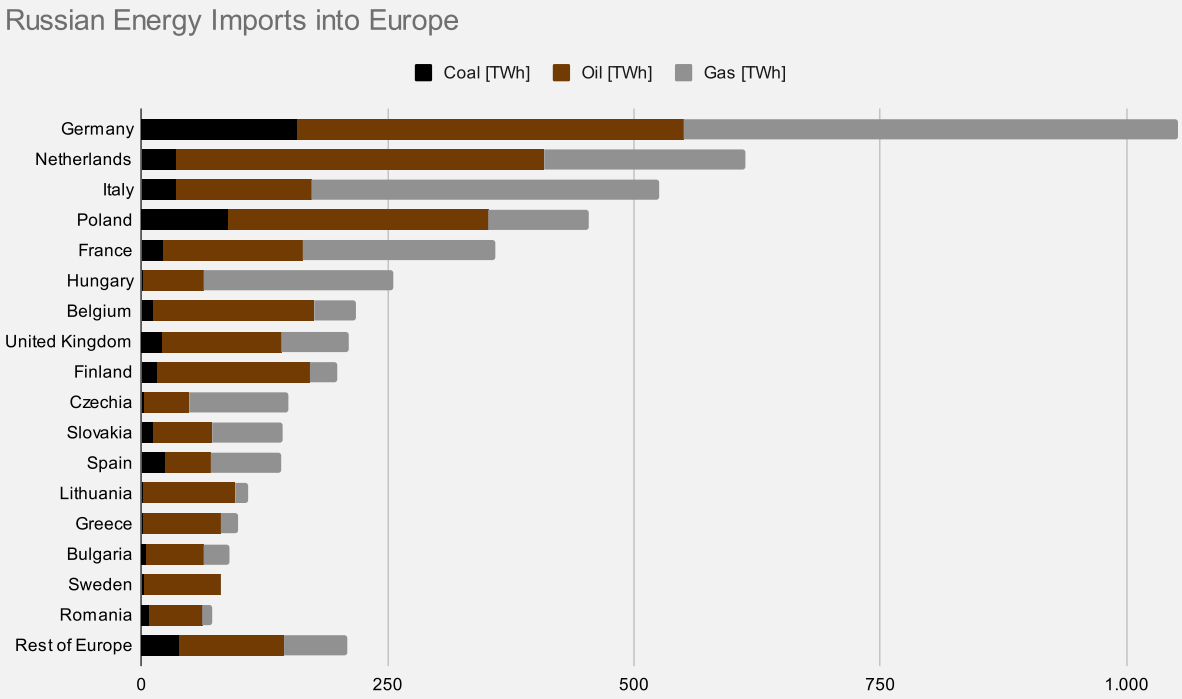

Fig 1: Russian fossil fuel imports, 2019

THE PLAN FOR GAS

Russia supplies about 40% of the EU's gas consumption. With prices soaring on world markets - largely due to Russia's own actions - the daily value of those imports has jumped, meaning ironically that Europe now sends even more cash to Putin to fund his war effort as a result of Russia's aggression. On 2 March, the daily value of those imports is estimated to have hit $755 million for gas alone[4]. With fluctuations in spot prices for Russian fossil fuels, it has been calculated that on average Europe sends nearly 650 million euros a day to support Putin's war machine[5].

In volume terms, Europe imports around 140 billion cubic metres (bcm) of gas by pipeline from Russia, with an additional 15 bcm delivered in the form of liquefied natural gas (LNG)[6]. This totals 155 bcm (about 1,500 TWh) of Russian gas, which needs to be removed from the European economy immediately if we are to stop the pipelines and LNG tankers supplied by Russia.

How can these volumes be immediately replaced or removed in the European economy? The IEA has proposed short-term measures that can reduce Russian gas imports by 80 bcm, or well over half[7]. The EU has also proposed measures that could front-load the years-long transition away from Russian gas and reduce imports by two-thirds by the end of 2022[8]. The Brussels-based economics think-tank Bruegel has also produced some useful estimates on how to replace Russian gas. We combine these estimates into our plan below, which raises ambition in order to allow an immediate boycott of Russian gas in Europe.

Target total: 155 bcm to entirely replace Russian gas - Year 1.

1. LNG diversification and pipeline switching: **30 bcm.**[9]
2. EU-wide energy saving; roughly 10 bcm per 1C reduction in buildings heat. With thermostats at 18C (reduced from 22C) total **40 bcm.**[10]
3. Fast-track deployment of additional solar PV and wind[11]: **6 bcm.**
4. Stop nuclear phase-out and restart recently closed reactors in Germany, Sweden and Belgium[12]: **14 bcm.**
5. Emergency effort to better utilise French reactor fleet[13]: **26 bcm.**
6. Heat pumps to reduce gas demand in heating, and emergency energy efficiency measures in buildings[14]: **4 bcm.**
7. Gas to oil in power stations: **6 bcm.**
8. Gas to coal in power stations[15]: **22 bcm.**
9. Curtailment to industry: **7 bcm.**

Total: 155 bcm.

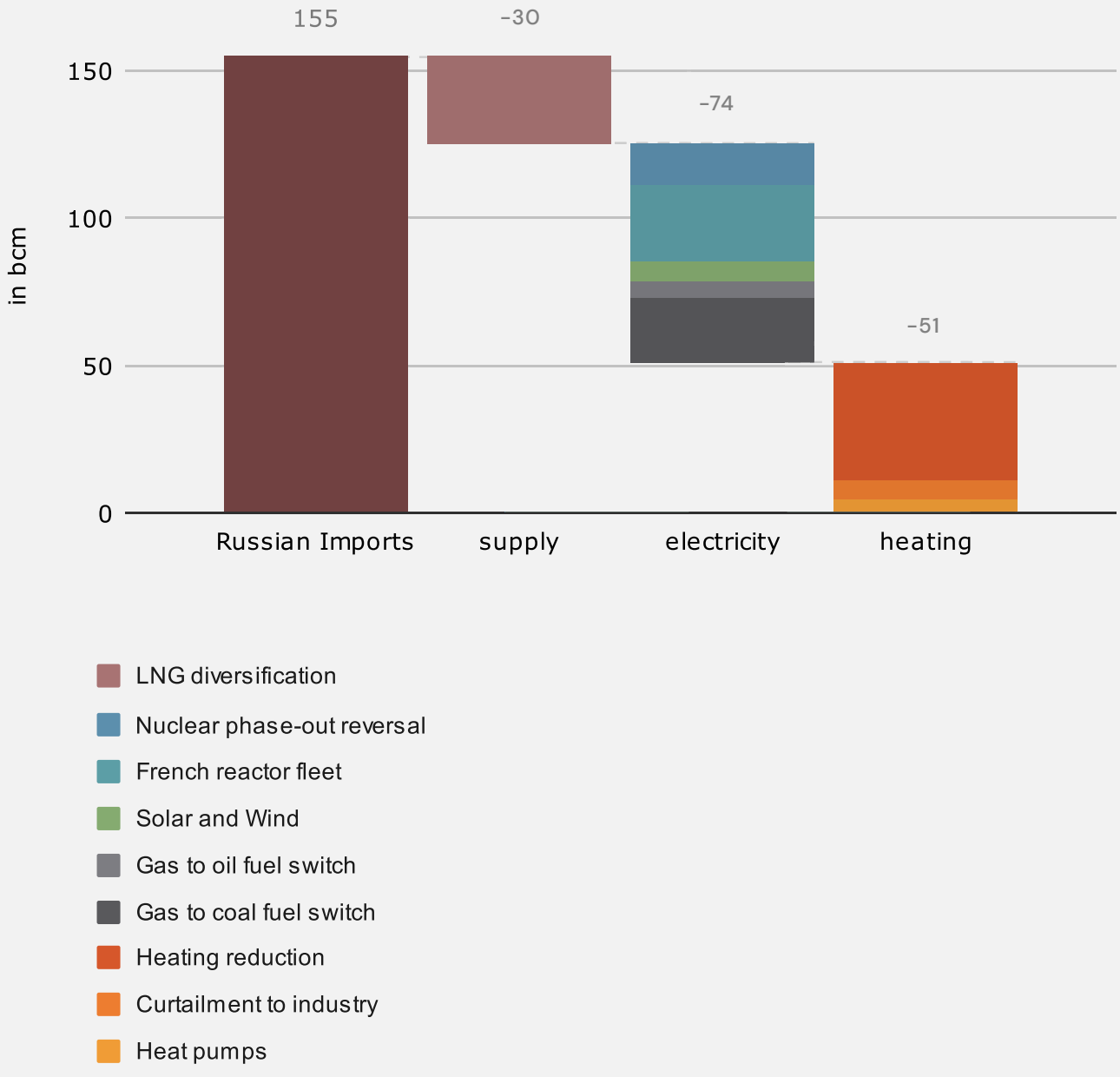

Fig 2: Year one, 2022 -winter 2022/2023

Burning oil in gas power stations and switching on large amounts of recently shuttered coal is not ideal - both because of climate reasons and because we also need to eliminate Russian oil and coal exports to the EU as well as gas. This fuel switching will make that effort even more difficult (see below). However for year 1 this can be done without an additional emissions burden to the climate, because carbon-intensive gas to coal fuel switching is outweighed by the overall reduction in emissions from using no Russian fossil fuels. It is simply inconceivable that Russia-dependent economies like Germany's could get through next winter without a recourse to more coal. But bringing more coal online must be a temporary emergency measure only - the longer-term coal phase-out must continue.

For a more climate-friendly fuel switching option we also focus on getting the currently shut-down reactors restarted in France at an accelerated pace. Currently the French nuclear fleet operates at below 60% capacity (30-40 GW of its maximum 61 GW), due to a host of different issues. These need to be taken care of with emergency priority. Indeed, the whole industry, including the nuclear regulator, needs to recognize the urgency of this. France has interconnectors to Germany, Italy, Belgium, the UK, Spain and Switzerland, which would enable French electricity exports to these countries and beyond to make up for shortfalls in gas generation. We believe it is imperative that the French government recognise its urgent responsibility to deliver its part in supporting the gas boycott in more gas-dependent countries with its reactor fleet. The ongoing maintenance work at the reactors needs to be accelerated (3x8 hour shifts) and shutdowns that are due to non-critical and not immediately pressing issues need to be cancelled and the reactors brought back online as soon as possible. Any remaining longer-term issues can be safely looked at and dealt with when the urgent situation of this year and next winter passes.

This focus on French nuclear enables our plan to reduce imports of LNG as compared to the EU's proposals (see endnotes), reducing pressure on world prices and helping developing countries which are also dependent on fossil fuels imports. However, admittedly our plan does not include much leeway for higher gas use if next winter is particularly cold, or if poor weather conditions lead wind and solar to under-perform. One way to mitigate this might be to increase European gas production, particularly from the Dutch Groningen gas field. Some estimates suggest that as much as 20 bcm could be quickly extracted from Groningen[16] - we suggest this option is kept in reserve in case of real emergency, while some investment may be needed upfront to secure this as an insurance policy.

We are also clear that German nuclear reactors which were shut down at the end of last year can and must be brought back online safely. Industry sources suggest that this is possible before next winter, although fuel must be secured to do this (from non-Russian uranium sources). Staff must be quickly rehired and a political commitment to secure and finance restarted reactors - Brokdorf, Grohnde and Gundremmingen C, with a combined output of 4GW - announced quickly by the German government.

In subsequent years, these measures can be supplemented by additional measures that reduce tightness in energy markets and reduce the upward pressure on prices. These also allow consumers greater flexibility of choice and allow industry to continue to use gas in essential manufacturing such as chemicals and fertiliser.

WAR ECONOMY IN EUROPE

Achieving these cuts will require a previously unimaginable level of cooperation and solidarity within Europe. We may need a state of emergency declared, and an explicit political recognition that European economies are now on a war footing in terms of the rapidity of the energy transition. In some ways the speed of the change will resemble the Covid lockdowns, but with a different trajectory in the longer term.

The measures we propose above should enable Europe to get through the rest of this summer and also next winter. However in order that the sacrifice is shared fairly - essential if social cohesion is to be maintained in a war economy - there must be an element of rationing which is not simply the price mechanism. Allowing sky-high prices to be the main instrument of rationing will be socially regressive and undermine the consensus needed to underpin the war effort, which will be agitated and magnified by pro-Putin actors both in Europe and in social media platforms.

Rationing via fair shares is the only alternative: governments will need to introduce price caps and guaranteed minimum supplies at the household levels so that everyone gets a basic amount and those with less ability to pay are not simply cut off. Turning down thermostats will be difficult to mandate and enforce, but with only a certain amount of gas allowed per household the incentive to stick to it will be substantial. As with Covid lockdowns, social pressure to abide by national restrictions will also play a big part.

With food supplies also in crisis, we will need to ensure that trade-offs are minimised between energy and food production. We do not include an increased component of biofuels (unlike the EU plan) for this reason: fertile land will need to be reserved for food production not used inefficiently for energy. The organic mandates in the EU's Farm to Fork strategy may also need to be suspended while the focus is on yields as organic tends to be lower-yielding than conventional production. France's president Emmanuel Macron has stated that Farm to Fork was "based on a pre-Ukraine war world" and would lead to a 13% drop in food production[17]. This is clearly no longer tenable.

OIL AND COAL

Russia exports 4.5 million barrels per day of oil and oil products to Europe (figures from November 2021)[18]. In financial terms this is even more valuable to Putin than gas exports, but it is also more easily replaceable as oil is a more fungible and transportable commodity.

One analysis calculates that Europe is currently giving Putin $285 million a day in return for imported oil and oil products like diesel. Last year, Russia received $104 billion from oil exports to Europe, dwarfing its gas revenues ($43 billion)[19]. In terms of hitting the Kremlin therefore, boycotting oil is even more important than stopping imports of gas. The dependency of European countries on Russian oil is highly variable: it is two-thirds in Finland and Poland, for example, but only 13% in France and Italy[20].

The IEA has released a 10-point plan for reducing oil use in OECD countries. These include:

- Lower speed limits on highways.
- Subsidising the use of public/electrified transport.
- Work from home more.
- Ridesharing and more efficient freight.
- Limits to personal car use in cities.
- Reducing business flights.
- Disincentivising recreational / non-essential fossil fuel use (e.g. through taxation, rationing, public education).

These combine to reduce oil demand by 2.7 million barrels per day in advanced economies - substantially less than Russian oil exports to Europe, which suggests that import switching will be essential unless the ambition of this can be improved. We propose bans on all business flights, private jets and internal flights within Europe to save oil, and bans also on car use within cities. This should be combined with free public transport. While the impacts of this are not easily quantified, we believe this could double the reduction in oil use beyond that proposed by the IEA in its handbook 'Saving Oil in a Hurry'[21]. European oil use needs to be reduced by about 25% to make up for the loss of Russian imports[22].

In addition, while implementing the necessary measures to rapidly and deeply reduce our dependence on Russian (and later, other imported) fossil fuels, we also need to:

- Make sure that energy poverty stays in check, either through rationing, or through an "energy-basic-income" scheme to mitigate the impact of rising prices in combination with increased energy taxes in order to compensate for the energy subsidies.
- Massive upscaling of insulation and other energy efficiency measures to reduce heating demand.
- Support logistics/delivery companies that suffer from rising fuel costs. Logistics are essential for our society to keep functioning day to day.
- Support those dependent on car mobility for work if/when fuel prices rise.

- Introduce windfall taxes on energy companies making abnormally large profits as a result of high energy prices. The EU estimates that 200 billion euros could be raised this way for redistribution to poorer consumers to cushion the blow.
- Share the burden within Europe by ensuring that tankers, refineries and oil movements are optimised so that those most dependent on Russia are supported by the least. We will need a 'Berlin airlift' of oil for this to work.
- Work internationally with allies to prevent Russia shifting exports to non-European buyers, and seek to mitigate the impact on the global poor of rising international oil and gas prices due to the European attempt to shut in Russian oil and gas, namely by striving to achieve fuel consumption reductions within Europe that equal the volumes of fuel no longer imported from Russia to Europe.

For coal, European imports of hard coal (lignite is produced domestically) from Russia were 43 million tonnes in 2020, about half of total imports. Most of this is 'thermal coal' used in power generation, on which Poland and Germany are particularly reliant. There is plenty of spare capacity in Europe - particularly Germany - to produce more electricity by burning coal, but this would either have to be mined domestically or imported from elsewhere.

According to the economics think-tank Bruegel, "Russian coal can be replaced because global coal markets are well supplied and flexible". It adds that overall, "While stopping Russian gas imports would be difficult and costly, but feasible, it will likely be less painful for the EU to manage a complete interruption of Russian oil and coal imports. Oil and coal are more global and liquid markets than gas, and rely less on rigid infrastructure like Europe's gas import pipelines."[23] However, once again in order not to put pressure on prices and compete with developing countries, the majority of the effort must be made at home in Europe.

MEDIUM TO LONG TERM

Time is our friend in substituting energy. While an immediate boycott of Russian energy will be primarily delivered through reductions in demand, as time passes more supply can be brought online from clean energy sources. However, a war economy approach will need to be maintained in order to dramatically increase the scale and shorten the timelines on the needed investments. In particular we need to accelerate, streamline and incentivise licensing, siting, and permitting of ALL new clean energy production and efficiency improvements. What previously took years of red tape must now be completed in weeks.

These can include:

- Large-scale solar PV installations (while minimising competition with farmland and still protecting nature) aiming at 400 GW by 2025
- Large-scale onshore and offshore wind, aiming at 400 GW by 2025
- Reactor restarts wherever possible in more recently closed nuclear facilities and further improving capacity factors and doing power uprates across the continent
- Electrification of transport and heating in order to permanently reduce oil and gas demand
- New interconnectors with a higher capacity to share electricity between EU nations to balance intermittent renewables and facilitate export of nuclear-generated electricity from France

New clean generating capacity will be essential if Europe is not to become locked into coal for electricity as this substitutes for Russian gas. While some emergency emissions increases are tolerable given the devastation in Ukraine and the urgent war imperative to divest from Russia, in the medium to longer term the coal phase-out schedule must be maintained for the sake of the climate. Thus we propose that any gas to coal and gas to oil fuel switching for power generation be allowable for Year 1 ONLY - to avoid blackouts and a devastating economic collapse - and that this be made explicit from the outset with a sunset clause on the plan. Coal can then be retired as clean energy comes online.

In the 3+ year time horizon, capacity additions for renewables should aim for 400 GW for solar and wind each by 2025. There should not be increased use of biofuels, due to unacceptable tradeoffs with food production and nature protection. Europe must also end the nuclear phase-out policy for good, and move to an ambitious new-build strategy, including both large and small modular reactors as well as shipyard made floating power plants for more rapid deployment[24]. These can produce both electricity (especially in 'repowered' coal plants where reactors substitute for coal boilers[25]) and hydrogen, allowing the decarbonisation of industry, providing 'firm' power to balance intermittent solar and wind, and further displacing fossil fuels.

RISKS AND DRAWBACKS

As Europe competes in international markets for scarce LNG, coal and oil imports, this puts upward pressure on global prices. This could undermine the boycott's intended effect by raising the financial value of remaining Russian fossil fuel exports to the Kremlin. In other words, Putin makes much more money when oil is priced at $200 a barrel (as some are predicting) than at $50 a barrel as was the case only recently. However this is mitigated by the fact that the destinations of pipelines cannot be moved around. If an oil or gas pipeline into Europe is shut down, there is no easy and quick way for Russia to redirect those exports somewhere else. In order to avoid this, Europe must focus on demand reduction and non-fossil supplies in order to reduce competition and reduce upward pressure on oil and gas prices internationally. Europe's domestic efforts must therefore be much more ambitious, as we propose here.

High fossil fuel prices also have severe negative effects on developing countries which are dependent on LNG and oil imports, and which will be competing with Europe for supplies. Europe is wealthier so will be able to outbid countries in Africa and South Asia on the spot market. This will raise the cost of living throughout the developing world, and also add to the increase in world food prices - which will already be under pressure because of lost production of wheat from Ukraine and Russia. In order for the poorest not to become poorer and hungrier as a result of Europe's boycott of Russian fossil fuels, major efforts must be made to ensure that developing countries are adequately supported with energy and food needs. In both these areas, Europe must ensure that the volumes targeted in a boycott of Russian oil and gas are matched by reductions in European consumption, in addition to new production capacity, as far as possible rather than substituted via imports from elsewhere.

CONCLUSION

This plan aims to take a no-regrets strategy, where efforts to unlink Europe from Russian oil and gas - which ultimately would have been needed anyway - are delivered quickly enough to help the war effort and protect the freedom of Ukraine from Russian military aggression. This is no-regrets because even if the war is concluded speedily in Ukraine's favour (an outcome we all pray for) Europe would not be seeking to renew its dependence on Russian fossil fuel exports as a result. Meanwhile compromises must be made with climate targets only in the very short term - this year and next winter only meaning this plan would still be a net benefit to the climate. In the medium to longer term Europe will use the war economy footing to deliver a massive and rapid build-out of clean energy, substituting for fossil fuels - again a transition that is supposed to happen anyway.

Europe's politicians have failed dismally in the past, leaving the continent hopelessly exposed to Russian uses of its energy leverage for geopolitical purposes. The horrors of the war in Ukraine have already dramatically changed Europe's foreign and defence policies. Now they must change its energy policy too. We can and must boycott the warmonger Putin, and no longer accept his fossil fuels stranglehold on Europe's energy. ***"Shutting down Mr. Putin's cash flow is an urgent moral and strategic imperative, but Europe is frozen in the headlights"***[26], President Zelensky's economic advisor has written. **It is time for Europe to act.**

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Disclaimer:

This report presents an emergency plan. The numbers in the plan are meant to be taken as indicative ballpark potentials of various actions, not exact values or even as likely outcomes. Reality is often different than spreadsheets or analyst guesstimates.
The execution of any plan of even closely similar magnitude, urgency and implications is both a complex and thoroughly political matter. Indeed, as we state, many of the items mentioned would demand something of a wartime economy and emergency conditions to be declared, more or less Europe-wide. No plan survives the first contact with reality. Ours is meant to show the broad direction and scale what could be achieved, yet it remains impossible to foresee all the complex implications such actions might cause down the road. For example, enforcing some of the demand cuts might be difficult to achieve on short notice, and the impact of cutting off Russian fuel imports on gas and energy prices in general remains unknown. For these, Europe needs to remain vigilant and dynamic, and adjust actions accordingly.

REPLANET