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Biden Sides with Big Oil Barons and Wall Street in EU Gas Deal

March 25, 2022

Exporting U.S. LNG Bad for Consumers and Climate

WASHINGTON, D.C. – President Biden today announced a [short-sighted deal](#) to supply the European Union with U.S. liquified methane gas exports, potentially locking in decades of climate pollution and failing to alleviate the crisis in Ukraine.

JPMorgan Chase CEO Jamie Dimon, in a closed door meeting at the White House with other oil and gas barons, [lobbied](#) for expanded methane gas production, export capacity, and import capacity in Europe as part of a new fossil fuel ‘Marshall Plan.’ Under Dimon, the bank has been Russia’s [number one fossil fuel financier](#), providing over \$3.5 billion in loans and underwriting to the Russian fossil fuel sector.

Kate DeAngelis, international finance program manager at Friends of the Earth, said this:

President Biden is going to regret siding with Big Oil and Wall Street over communities and the climate. Betting on liquified methane gas is akin to driving on a bridge to nowhere. The window is rapidly closing to end our addiction to climate-changing fossil fuel resources, yet President Biden is propping up the industry that caused this mess. We need a Marshall Plan for renewable energy, not more of the same.

LNG exports from the U.S. compete with domestic use of gas, significantly increasing prices paid for by businesses and families, of which the hardest hit are low income and BIPOC communities. Although the U.S. recently became the largest exporter of LNG, there are 16 more export terminals that have been [approved](#) but not yet constructed. President Biden’s announcement recklessly opens the door to finance these facilities potentially from public sources like the [U.S. Export-Import Bank](#) and [other export credit agencies](#).

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- LNG export terminals typically take up to [at least 3 to 4](#) years to complete and sometimes longer, meaning there would be no short term solution to the current shortages European consumers are facing. Additionally, European regasification import terminals are already near or [at capacity](#). Renewable energy systems, particularly distributed ones, are far more dispatchable in the short run and new renewable energy sources are [already reducing gas demand in Europe](#) and, as a result, providing consumers greater price predictability. In fact, a [new study](#) found that renewables can supplant the majority of Europe's current Russian gas imports by 2025.
- Gas exports are a [significant contributor](#) to increased gas heating bills facing U.S. households, with [bills forecasted to be 30% higher this winter](#) (and 54% higher for households using propane and 43% more for heating oil).

Communications contact: Kerry Skiff, kskiff@foe.org, 202-222-0723

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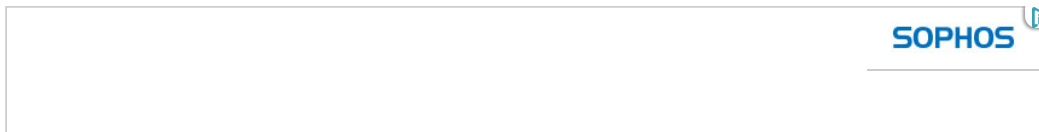
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Biden pledges to help Europe kick its dependence on Russian energy



Ben Adler · Senior Editor

25 March 2022 · 6-min read

In this article:

 **Joe Biden**
46th and current president of the United States

President Biden and European Commission President Ursula von der Leyen announced on Friday morning the formation of a joint task force to reduce Europe's dependence on Russian fossil fuels. The goal is to craft a set of policies that will allow Europe to import less oil, coal and gas from Russia as soon as next winter. (European imports of oil and natural gas peak

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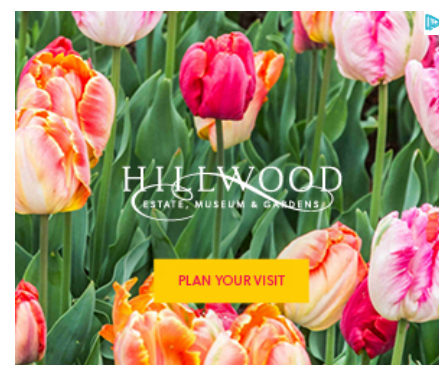
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Europe can get through this winter and the next while we're building the infrastructure for a diversified, resilient and clean energy future," Biden said at the U.S. chief of mission residence in Brussels, where the European Union is headquartered.



President Biden speaks during a meeting with Polish President Andrzej Duda on Friday in Rzeszow, Poland. (Jeff J. Mitchell/Getty Images)

Some of the commission's actions may conflict with the goal set forth by Biden and the EU of combating climate change. Europe's greatest vulnerability to Russia is its reliance on Russian gas, which — unlike oil and coal — typically moves through pipelines rather than via tankers and therefore can't be just immediately bought from other suppliers. To reduce Europe's demand for Russian gas, the task force will try to reduce Europe's gas usage, which would reduce the greenhouse gas emissions that cause climate change. But the U.S. and EU are also partnering to increase U.S. exports of liquefied natural gas (LNG) to Europe, which would increase emissions. Environmentalists worry that building new infrastructure such as LNG export terminals could lock in a reliance on gas for decades to come.

The announcement from Biden and von der Leyen drew applause from the oil and gas industry, which is often opposed to Biden's energy policies.

"We welcome the president's focus on expanding U.S. LNG exports to our European allies during this crisis," said American Petroleum Institute president and CEO

support global energy security, including further addressing the backlog of LNG permits, reforming the permitting process, and advancing more natural gas pipeline infrastructure.”



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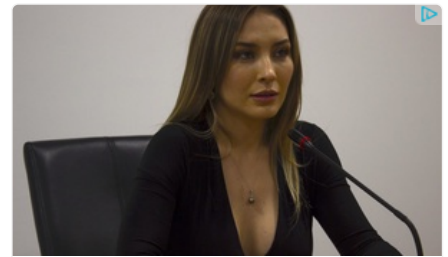
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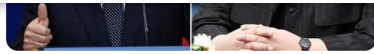
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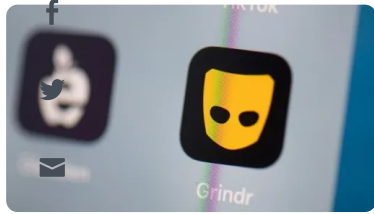
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The Pulitzer Prize Board honored Ukrainian journalists on Monday for their "courage, endurance and commitment to truthful" coverage of Russia's invasion of their country.

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Attachment O

All-American Oligarchs: The Big Oil CEOs profiting from war in Ukraine

“To the oil and gas companies and to the finance firms that back them: We understand Putin’s war against the people of Ukraine is causing prices to rise. ...but — it’s no excuse to exercise excessive price increases or padding profits or any kind of effort to exploit this situation...Russia’s aggression is costing us all, and it’s no time for profiteering or price gouging.”

--[President Joe Biden, March 8th, 2022](#)

Amid the fog of rumor and accusation that has accompanied the war in Ukraine, one thing is clear: Big Oil is absolutely using the resulting run-up in fuel prices to price-gouge and profiteer. Not only are top oil executives billions of dollars richer; they are using the rapid spike in profit and personal wealth to cash out and pay off wealthy investors and insiders.

Fresh analysis from Friends of the Earth and BailoutWatch finds oil CEOs are billions of dollars richer than they were at the start of the Biden Administration, and have sold shares in their companies worth millions of dollars in the weeks since the war became inevitable. Meanwhile, the companies are using their windfall profits on share buybacks and dividends that further enrich their executives and shareholders.

Key Summary

- The 18 biggest Big Oil CEOs are worth over \$8 billion more than they were on January 20, 2021, the day Joe Biden took the oath of office, thanks to skyrocketing share prices of the companies they control.
- Since President Biden called the Russian invasion of Ukraine inevitable, at least five top Big Oil executives have cashed out nearly \$99 million worth of their increasingly valuable stock.
- Hess CEO John B. Hess reported selling 650,000 shares he controlled directly or through a family trust for \$65 million between [March 4th](#) and March 8. Their remaining stake after the sales are worth more than \$758 million.
- At Pioneer Resources the CEO unloaded 22,247 shares worth \$5.3 million on [March 2nd, 2022](#) (at \$240 a share). After the transactions, he and his family still own a stake in the company currently worth \$145 million.
- Pioneer Director Matt Gallager (former CEO of Parsley Energy prior to its acquisition by Pioneer) sold 45,000 shares for \$10.6 million between [Feb 24](#) and [March 3](#). After the transactions he still owns shares worth over \$28.2 million.
- Marathon Oil CEO Lee Tillman reported selling shares worth \$15 million on [Feb 18th](#) and 22nd, [Feb 28th](#) and March 1st, and [March 2nd](#) 2022. After the transactions his remaining stake in the company is worth \$24.9 million.
- Continental Resources President Jack Stark reported selling 50,000 shares worth \$3 million on [March 4th](#), 2022. After the transaction his stake in the company is worth \$52 million.

“The CEOs of these companies have been caught cashing in on war,” said **Lukas Ross, Program Manager at Friends of the Earth**. “If we want to protect consumers from pain at the pump, or preserve a livable climate, it is clear the age of fossil fuels must end.”

“The actions of these oil executives makes it clear that no matter how much they groan about the Biden Administration's environmental policies and geopolitics, their focus remains entirely on lining their own pockets,” said **Christopher Kuveke, data analyst at BailoutWatch**. “There’s no use looking for other answers in the industry’s school of red herrings.”

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Attachment P

Lee Fang

April 25 2022, 12:42 p.m.



An Exxon Mobil oil refinery is seen on Feb. 28, 2020, in Baton Rouge, La. Photo: Barry Lewis/InPictures via Getty Images

Since the Mountain Valley pipeline was announced eight years ago, the proposal to transport fracked natural gas from West Virginia to export terminals in southern Virginia has faced regulatory hurdles and local opposition. The main [concern](#) is that the project runs through environmentally sensitive waterways and farmlands, putting them at risk of spills – while further promoting the development of fracking throughout West Virginia.

Now, after nearly a decade of lobbying, the energy crisis sparked by Russia's war in Ukraine appears to have turned the tide, with federal regulators supporting a construction route that could bring the pipeline into service as early as next year.

Filings show that the pipeline’s boosters were quick to capitalize on the Ukraine crisis to sway policy-makers. In federal appellate courts last month, attorneys for the pipeline project argued that with the U.S. ban on imports of Russian natural gas, “domestic supplies will become all the more important to the nation’s energy needs.” Completing the pipeline, the attorneys wrote, “indisputably would provide a meaningful step toward building out U.S. oil and gas infrastructure, freeing up additional natural gas for domestic consumption and export to Europe.” Other pipeline supporters, including Sen. Joe Manchin, D-W.Va., heavily cited the war in Ukraine to press administration officials to swiftly approve the project as a matter of national security.

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Soon after, on April 8, the Federal Energy Regulatory Commission unanimously approved the plans to build the pipeline across 180 bodies of water and wetlands, a decision that analysts view as the final step in overcoming the hurdles that had placed the project in jeopardy for years.

The progression of the West Virginia pipeline project is one of many fossil fuel priorities now reshaped by the devastation wrought by the war in Ukraine. In the first days of the war, the American Petroleum Institute, which represents industry giants such as Exxon Mobil and Chevron, argued that it heightened the need for greater development of U.S. oil and gas reserves and for expedited approval of pipelines and other infrastructure.

“As crisis looms in Ukraine, U.S. energy leadership is more important than ever,” API tweeted at the outset of Russia’s incursion into Ukraine. Soon after, other oil and gas companies joined the fray. In early March, the chief executives of TC Energy, Enbridge, the Williams Companies, and Kinder Morgan cited the war to call for the rapid approval of natural gas pipelines that have faced opposition from activists and regulators.

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Critics of the industry immediately countered that more fossil fuel development would take too long to provide any short-term relief. Gas and oil are global commodities, and small increases in U.S. production won’t have any immediate impact on domestic energy prices.

But rising utility and gas prices have rattled policymakers. Last month, following pressure from industry sources, including [natural gas exporters](#), the Biden administration [rolled back](#) plans to evaluate natural gas pipelines on climate and environmental justice grounds. The Interior Department also announced a plan on April 15 to [resume](#) the sale of leases to drill on federal lands for oil and gas.

In recent weeks, more and more fossil fuel interests have piled on. This month, lawyers for Sempra Energy filed a [letter](#) to FERC urging approval of the North Baja pipeline, a project to transport liquified natural gas to export terminals on Mexico's western coast. The project, the attorneys said, carried additional urgency "in light of the recent Russian invasion of Ukraine" and "concerns about energy security for Europe and Central Asia."

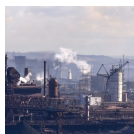
TC Energy, formerly known as TransCanada, filed an amended request for approval of its Alberta XPress project, which would expand an existing natural gas pipeline system. The "beneficial domestic and international end uses" of the project, the company said, have "recently grown exponentially" with Russia's invasion of Ukraine and the need for oil and gas exports to the global market.

In recent weeks, more and more fossil fuel interests have piled on.

K&L Gates, a law firm that represents Rio Grande LNG, a project to construct a site with five liquified natural gas trains in Texas, similarly [petitioned](#) FERC, calling for quick approval action given "Russia's invasion of Ukraine and the stranglehold Russia has on Europe's energy supply."

Fossil fuel-backed interests are also attempting to use the Ukraine war to shape the Biden administration's proposed rules around carbon capture and sequestration. Harry MacDougald, an attorney who has led industry-backed lawsuits to overturn the Environmental Protection Agency's endangerment finding on greenhouse gas emissions, filed comments to the White House Council on Environmental Quality arguing that any carbon capture rules should not limit the potential for greater oil and gas development. "With Russia's criminal invasion of Ukraine, the national imperative of increasing U.S. petroleum production is readily apparent," MacDougald wrote.

Lobbyists for a range of other industries – including power plants, refrigerator manufacturers, software developers, and telecommunications providers – have also wasted no time in using Russia's invasion of Ukraine as a talking point to influence decisions on a wide array of policies, from tariffs to environmental rules. The comments range from urgent calls to action on vital economic issues to precarious arguments that stretch the imagination to fit the Ukraine crisis into a domestic U.S. context.



Related

Russia-Ukraine War Is Another Reason to Break Free of Dirty Steel, but U.S. Companies Still Chase Profits Over Green Future

The Competitive Enterprise Institute, a libertarian think tank backed by business interests [including](#) Google, [filed](#) a document with the Federal Trade Commission opposing new guidelines for enforcement against business mergers that pose monopolization risks. The think tank argued that a transparent

process for such a potentially costly new enforcement regime was important to consider, particularly given the “geopolitical uncertainty surrounding Vladimir Putin’s invasion of Ukraine.”

The American Public Power Association, the lobby group that represents electric utilities around the country, including a large number of coal-burning power plants, in March submitted comments to the EPA opposing new limits on wastewater pollution, in part by [pointing](#) to the “immense pressure on fuel and energy prices” caused by “the recent war in Ukraine.”

Microsoft and the U.S. Telecom Association have filed letters with the Commerce Department urging greater government investments in semiconductor development by pointing to the supply chain problems worsened by the war in Ukraine. “The shortage has been further exacerbated by Russia’s war with Ukraine, which has strained the supply chain for critical minerals and other raw materials and exposed further vulnerabilities in the semiconductor supply chain,” [wrote](#) Sarah O’Neal, an attorney with Microsoft.

Ukraine provided about half of the global supply of semiconductor-grade neon, a colorless and odorless gas used to control lasers for the production of specialized computer chips. The shortage from the war, with plants in eastern Ukraine under occupation, has alarmed automotive manufacturers. The Motor & Equipment Manufacturers Association, the automotive parts trade group, called attention to the potential global shortage in a [letter](#) urging the Biden administration to take rapid action to bolster the domestic semiconductor supply.

And the Air-Conditioning, Heating, and Refrigeration Institute and the North American Association of Food Equipment Manufacturers are among the lobby groups pushing for a relaxation of U.S. tariffs on [steel](#) by citing the crisis in Ukraine.

Other petitioners urging relaxed U.S. government interference in the market are less persuasive. Mike Schafer, the head of a fish processing plant, petitioned the Biden administration for “laws changed to bring fish products to humanitarian use and K through 12 school lunch programs.” Schafer asked for a range of government support for the fishing industry, including grants for international marketing to feed “all the refugees from Ukraine” who “could really use fish protein.”

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Environment

Oil and gas companies are looking at a bonanza from the Ukraine war

Analysis: fear of shortages gives fossil fuel companies leverage with governments that could be disastrous for the climate



📷 Petrol prices at a Shell station in London on 8 March 2022. Petrol prices have reached a new high in the UK, hitting 159.9p a litre. Photograph: Andy Rain/EPA

Fiona Harvey *Environment correspondent*

Thu 10 Mar 2022 02.00 EST

Oil and gas companies are facing a potential bonanza from the [Ukraine](#) war, though few in the industry want to admit it, and many are using soaring prices and the fear of fuel shortages to cement their position with governments in ways that could have disastrous impacts on the climate crisis.

“There is a huge opportunity for oil and gas companies, though I’m sure it is not one they would have chosen,” said Robert Buckley, head of relationship development at Cornwall Insight, an energy analysis company. “They have the opportunity to reposition themselves [as crucial to policymakers]. There is going to be a very high price for oil for a very long time, and even the prospect of physical shortages.”

[Oil prices have leapt dramatically](#), to more than \$130 a barrel, sending petrol prices in the UK to more than 155p a litre, while gas prices have also surged.

It’s shameful that oil and gas companies now seek to use this humanitarian crisis to further their interests.

Luke Sussams, of Jefferies investment bank, said: “The high-price environment is likely to last a long time. Boris Johnson has said that alongside the accelerated deployment of renewables will be greater production from the North Sea. There is the potential for growth prospects and upside [for fossil fuel producers].”

Tessa Khan, director of Uplift

The EU, the UK and the US have all announced **drastic restrictions on imports of oil and gas from Russia**, which will affect the EU most as about 40% of EU gas comes from Russia, but will hurt all countries as prices are set internationally. Those governments are now **urgently seeking ways to protect their energy security**, through ramping up renewables and seeking alternative sources of oil and gas supply.

Opec, and Saudi Arabia in particular, are the obvious ports of call, but have been so far been reluctant to commit to increased production. This could change, as the FT reported that the United Arab Emirates' ambassador to the US favoured an increase, news which sent oil prices down about 11% from their peak.

But the crisis gives western oil and gas companies such as BP, Shell, Exxon and Total leverage among governments. In the UK, prime minister Boris Johnson defended oil companies against calls for a windfall tax on Wednesday from Labour. He said: "The net result of that would be to simply see the oil companies put their prices up yet higher and make it more difficult for them to do what we need them to do ... divesting from dependence on Russian oil and gas."

Robin Baillie, partner in the energy group at the international law firm Crowell and Moring, said: "Governments around the world are looking for **short-term solutions to finding an alternative to Russian energy**, and the North Sea is an obvious one for the UK, until such time as more renewables come online."

New oil and gas fields take years and even decades to come into production, so even if companies begin to expand their exploration immediately it will not reduce current prices. Big oil and gas companies are now **awash with cash**, which they could use to invest in pumping more from existing fields, and exploring new fields.

Green campaigners warned that oil and gas companies were using the Ukraine emergency to further their own interests, by encouraging governments to prioritise oil and gas production and make decisions now on investments that would have little impact on the current crisis but would vastly increase fossil fuel use for years to come.

Marc van Baal, of Follow This, a group of 8,000 green shareholders in oil and gas companies, said: "The leaders of oil and gas companies really have shown in the last years that they want to **hold on to their old business model**. This is what they understand - turning hydrocarbons into petro-dollars. So I am afraid this is what they are telling governments they should do."

Tessa Khan, director of Uplift, which campaigns to end North Sea fossil fuels, said: "It's shameful that oil and gas companies, some of whom have profited from their Russian partnerships for years, now seek to use this humanitarian crisis to further their interests. The fact that they are still being listened to by governments, the UK's included, is beyond belief."

A stark reminder of the likely consequences of further dependence on oil and gas came from the International **Energy** Agency, which reported on

Tuesday that greenhouse gas emissions had shown the highest ever annual increase in 2021. The global energy watchdog found that energy-related carbon dioxide emissions, which make up the bulk of greenhouse gases, had risen by 6% in 2021 to 36.3bn tonnes, their highest-ever level, as the global economy rebounded from the Covid-19 pandemic, relying heavily on coal to power the growth. The increase in global CO₂ emissions was more than 2bn tonnes, the largest in history in absolute terms, outweighing the decline in emissions seen during the lockdowns of 2020.

Renewable energy and energy efficiency offer alternatives to oil and gas, which the UK, the EU and the US are also pursuing. But if fossil fuel companies make decisions now to expand exploration and production, that will continue to result in high emissions for years and decades to come.

Lori Lodes, executive director of Climate Power, a campaigning group in the US, said: "More drilling in more places isn't a short-term fix, it's a long-term problem that only makes oil and gas CEOs richer and locks us into more dependence on dirty, unreliable, expensive and volatile fossil fuels."

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Attachment R

The Washington Post*Democracy Dies in Darkness*

Gas prices reach record highs as Biden calls inflation top priority

President Biden vows to confront inflation, places blame on Republicans as more bad economic news looms

By [Evan Halper](#), [Jeff Stein](#) and [Rachel Siegel](#)

Yesterday at 6:00 a.m. EDT | Updated yesterday at 1:48 p.m. EDT

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Gas prices surged to a new high despite White House efforts to stabilize them, as President Biden said Tuesday that tackling inflation is his top economic challenge.

The average price for a gallon of gas nationwide hit \$4.37 on Tuesday, the highest price AAA has recorded since it started keeping track in 2000. In California, it is \$1.47 higher than that. This is not the most expensive gas on record, when adjusted for inflation, but the increase comes despite Biden's ordering the use of a million barrels per day from the Strategic Petroleum Reserve a little over a month ago. The administration's move to allow more ethanol into the nation's fuel supply hasn't brought much relief to consumers, either.

Biden pledged to redouble his efforts, outlining his agenda — most of which is stalled in Congress — for easing the burden of inflation on average Americans. The plans include increasing taxes on the ultrawealthy, expanding the Affordable Care Act, and boosting investments in clean energy and transportation.

"I know families all across America are hurting because of inflation," Biden said Tuesday in a speech at the White House complex. "I want every American to know that I am taking inflation very seriously."

Biden, whose popularity has suffered amid the price pressures, tried to place blame for the nation's economic challenges on Republicans, pointing to a plan released this year by Sen. Rick Scott (R-Fla.) for a minimum federal income tax. About half of Americans do not pay federal income taxes because they do not earn enough.

"My plan is to lower everyday costs for hard-working Americans and lower the deficit by asking corporations and the wealthiest Americans not to engage in price gouging and pay their fair share," Biden said. He accused the GOP of pursuing an agenda that would instead raise taxes on working class voters.

"The bottom line is this: Americans have a choice right now between two paths reflecting two very different sets of values," Biden said. "My plan attacks inflation and lowers the deficit. ... The other path is the ultra MAGA plan."

Biden's remarks precede what is likely to be more tough news for the White House when the federal government reveals its newest inflation data midweek.

Inflation has soared in the past 12 months, with prices climbing at their fastest pace in 40 years. This has driven up the cost of gas, housing, groceries and a range of other items for millions of Americans. Wages are rising too, but price hikes are climbing much faster and eating into the disposable income of many Americans. This is putting pressure on households and businesses as they struggle to absorb new costs. Many businesses are passing these higher prices on to consumers, and the cost increases have been so disruptive that many families are rethinking their spending or retirement plans.

Nowhere is the pain more obvious than at the gas station. Tuesday's prices are below what consumers were paying at the high-water mark in July 2008, when gas was \$5.36 per gallon in today's dollars, but the sting for consumers remains.

"The tools the federal government can use to influence prices are limited," said Devin Gladden, manager for federal affairs at AAA National. "They are already using almost the whole toolbox."

This month's increase, Gladden said, is largely a response to the European Union's announcement that, with a few exceptions, it aims to stop all imports of Russian oil by the end of the year in the wake of the invasion of Ukraine. The European move has a much bigger impact on world markets than any short-term measures the Biden administration can take to blunt high gas prices.

There will probably be a measure of relief in the coming days after crude oil prices fell early this week, but analysts warn it could be a long time before prices come down significantly. At the very least, it is likely to be a long, challenging summer for drivers.

"No one has any idea how long this war will last or how long and deep its global energy impact will be," said Edward Chow, an energy security scholar at the Center for Strategic and International Studies who worked in the oil industry for decades. He said the reshuffling of the global oil export map could leave the United States facing the kind of prolonged, soaring prices it endured during the OPEC embargo of the early 1970s and the Iranian revolution that followed in that decade.

"It may well be bigger and longer lasting," he said, adding of Russia, "You simply cannot take the country that was the world's largest combined exporter of oil and gas off the board without major impact."

Compounding the challenge for the United States is a pandemic during which demand dropped so low early on that at one point oil was trading for zero dollars a barrel. That, combined with market uncertainty as the United States and Europe race to transition from fossil fuels, gave oil companies little incentive to invest in costly new drilling infrastructure. Those kinds of things don't ramp back up in days or weeks.

It is not just a matter of getting more crude oil flowing. The United States' ability to refine oil has diminished as older, dirtier, less efficient facilities have been replaced with updated refining equipment, said Kevin Book, managing director at ClearView Energy Partners, a research firm. The nation's refining capacity, he said, is considerably less than it was at its peak.

"It takes years to build new refineries, and years to expand existing ones," Book said. "We will see more capacity in the world. Just not right here, right now."

The other remedies that might help marginally right now are not very politically palatable. One of them, said Patrick De Haan, the head of petroleum analysis at the price-tracking service GasBuddy, is relaxing the environmental rules around gasoline in the summer months in major metropolitan areas. Suspending requirements that cleaner blends be used in these places, he said, could ease prices 20 to 40 cents per gallon.

"It is not a whole lot of relief, and it comes at the expense of cleaner air," De Haan said.

A gas tax holiday is another fraught option. It takes away badly needed funding for roads and sends an artificial signal to consumers that prices are dropping and they can drive more, when the reality is the supply is still tight. Urging states to reduce speed limits could go a long way toward helping consumers save gas, De Haan said. But there is not a huge political appetite for that, either.

Steadily rising gas prices are just one element of the politically toxic economic reality Biden faces.

The Bureau of Labor Statistics is likely to deliver more bad news with its inflation report Wednesday. As economists and policymakers look for any evidence that inflation has peaked, such as potential cooling in the housing market, promising signs are few. Price growth has exceeded expectations for more than a year, with the nation stuck in an inflation spiral.

Overall prices had climbed 8.5 percent in March from March 2021, driven largely by higher energy costs linked to Russia's invasion of Ukraine.

A White House that was largely dismissive at the onset of inflation pivoted after price hikes persisted and voter anger grew. One remedy was supposed to be the administration's Build Back Better agenda, centered on a legislative package aimed at lowering household costs. That package is stalled in the Senate.

That leaves the White House pointing instead to more modest measures, including oil releases from the Strategic Petroleum Reserve. The White House also points to Biden's action to extend a Trump-era freeze on student debt payments.

Scott's tax proposals, coming at a time of economic pain for many Americans, has opened rifts within the GOP that Democrats plan to exploit. Senate Minority Leader Mitch McConnell (R-Ky.) denounced Scott's plan but has refused to outline the GOP's policy positions, arguing that voters will learn about them once Republicans retake Congress. Scott, the chairman of the National Republican Senatorial Committee, also released his 11-point plan for forcing Congress to have to re-approve every federal program after five years, a measure that would threaten entitlement programs such as Social Security and Medicare.

Scott responded on Tuesday by inviting Biden to debate him in Florida while also calling on the president to resign. He said: "Joe Biden can blame me all he wants. Here's the truth: he's the President of the United States, Democrats control the House of Representatives and the Senate. Democrats' agenda is hurting American families and no amount of spin can change that."

Biden on Tuesday also referenced the Federal Reserve, which plays a big role in attempting to combat inflation by raising interest rates. He called on the Senate to confirm several of his nominees to the central bank as soon as possible.

"While I will never interfere with the Fed's judgments or tell them what to do," Biden said, "I believe inflation is our top economic challenge right now and I think they do too. The Fed should do its job, and will do its job, with that in mind."

Yet, the effectiveness of the Fed's recent interest rate increases in curbing inflation remains to be seen as the Federal Reserve also tries to avoid pushing the economy into recession with its corrective steps.

Biden also said Tuesday that he is "looking at" the best way to reduce the tariffs on China imposed by President Donald Trump, but said no decision had been made. Biden administration officials have been locked in negotiations with the Chinese for months over easing the tariffs but so far have not announced a breakthrough.

Many economists have said lowering the trade barriers is among the best tools at the administration's disposal for fighting inflation, but prior White House analyses have found that doing so would probably have only a minimal impact on price hikes.

Attachment S

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Export-Import Bank plan may affect U.S. LNG, renewables

By Carlos Anchondo | 04/15/2022 06:57 AM EDT



A man walks past the Export-Import Bank of the United States in Washington, D.C. AP Photo/Jacquelyn Martin

The board of the Export-Import Bank of the United States yesterday approved a new tool meant to support domestic export projects, opening financing options to facilities associated with liquefied natural gas, renewables and energy storage.

The initiative will provide access to the agency's "existing medium- and long-term loans and loan guarantees to American manufacturing projects that export," according to a statement from the Ex-Im Bank, the nation's official export credit agency.

Advocacy groups for the U.S. LNG sector quickly welcomed the plan, saying it could help projects overcome funding challenges and support thousands of jobs. Environmentalists expressed concern that new LNG financing could take money away from renewable energy.

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The new tool will be available to all sectors, the Ex-Im Bank said, provided that projects meet environmental laws and other requirements.

“The Make More in America Initiative will create new financing opportunities that spur manufacturing in the United States, support American jobs and boost America’s ability to compete with countries like China,” Reta Jo Lewis, the Ex-Im Bank’s president and chair, said in a [statement](https://www.exim.gov/news/exim-board-directors-unanimously-approves-make-more-america-initiative) (https://www.exim.gov/news/exim-board-directors-unanimously-approves-make-more-america-initiative), yesterday.

LNG has been in the spotlight in recent weeks as Russia’s invasion of Ukraine disrupts global energy markets. The United States moved to ban oil, LNG and coal imports from Russia. European countries also are seeking to reduce their dependence on Russian energy.

Observers have said Russia’s actions present a business opportunity for the U.S. gas industry. More than a dozen LNG projects have been federally approved but not yet built. That suggests the U.S. industry could roughly double its exports without a major regulatory approval (*Energywire* (https://subscriber.politicopro.com/article/eenews/2022/03/09/us-lng-seeks-to-fill-the-russian-gas-gap-00014071), March 9).

The new bank initiative incentivizes applications in “environmentally beneficial, small business and transformational export transactions,” according to the Ex-Im Bank’s statement, which listed energy storage and renewable energy, in addition to semiconductors, biotech and biomedical products.

While the Ex-Im Bank’s release didn’t specifically mention LNG, industry advocate LNG Allies said U.S. LNG export projects are “clearly” environmentally beneficial, saying they “mostly displace coal use in foreign power projects” or dirtier Russian gas.

“U.S. LNG exports are both environmentally beneficial and transformational, two adjectives the release specifically uses to call out projects they would be supporting,” said Charlie Riedl, executive director of the Center for Liquefied Natural Gas, in an email.

In a statement yesterday, Fred Hutchison, president and CEO of LNG Allies, said: “Although U.S. LNG export projects have traditionally been able to secure private sector construction loans (backed by long-term contracts with creditworthy counterparties), today’s action by the Ex-Im Bank’s board could prove beneficial during the current global LNG shortage, which could well last for several more years.”

“Good, solid renewable projects will get EXIM support if they pass the agency’s high lending standards,” Hutchison said in an email. “Gas/LNG projects are subject to the same rules and [regulations].”

Meanwhile, an Ex-Im Bank spokesperson said LNG was not one of the sectors identified in Biden’s [executive order on America’s supply chains](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/) (https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/) and “is not one of the EXIM Bank Charter mandated priority areas that shaped the sectors incentivized in the Make More in America Initiative.”

“LNG projects are not within the agency’s official environmentally beneficial exports classification,” the Ex-Im Bank spokesperson said, linking to an [agency webpage](https://www.exim.gov/about/special-initiatives/environment) (https://www.exim.gov/about/special-initiatives/environment).

Amid the backdrop of Russia’s war against Ukraine, President Joe Biden has pledged to send more U.S. gas to Europe (*Energywire* (https://subscriber.politicopro.com/article/eenews/2022/03/28/bidens-lng-deal-with-europe-jolts-gas-critics-00020625), March 28).

Oil and gas trade associations and companies have supported Biden’s push to help Europe wean itself off Russian energy through more LNG exports. But Global Energy Monitor in a [brief](https://globalenergymonitor.org/wp-content/uploads/2022/04/GEM-Briefing-LNG-Terminal-Development-Timelines.pdf) (https://globalenergymonitor.org/wp-content/uploads/2022/04/GEM-Briefing-LNG-Terminal-Development-Timelines.pdf) this month said new U.S. export terminals “are not a viable solution to Europe’s near-term gas needs.”

The war in Ukraine topped a statement yesterday from national security adviser Jake Sullivan and National Economic Council Director Brian Deese on the Ex-Im Bank’s initiative.

“As the world reels from the impact of geopolitical events, like [Russian President Vladimir] Putin’s war of choice, and other supply chain shocks, it is clear that investing in domestic manufacturing is critical for our economic and national security,” said the joint statement.

“This initiative will support the Biden-Harris Administration’s efforts to expand America’s global competitiveness in the industries of the future — from clean energy and clean technology to semiconductor production,” the statement from the pair also said.

To qualify for eligibility, projects broadly would need to have “25 percent of output exported or expected to be exported,” [according \(https://www.exim.gov/about/special-initiatives/make-more-in-america-initiative\)](https://www.exim.gov/about/special-initiatives/make-more-in-america-initiative) to the Ex-Im Bank.

In a January [letter \(https://subscriber.politicopro.com/eenews/f/eenews/?id=00000180-294e-d0f6-a994-bffe73c40000\)](https://subscriber.politicopro.com/eenews/f/eenews/?id=00000180-294e-d0f6-a994-bffe73c40000) to the Ex-Im Bank, Hutchison said U.S. LNG project developers are at “a significant disadvantage” compared to projects overseas that are largely developed by big international energy companies and don’t require offtake contracts to get financing.

However, also in January, environmental group Friends of the Earth [pushed back \(https://subscriber.politicopro.com/eenews/f/eenews/?id=00000180-294f-df51-abef-e97fd4990000\)](https://subscriber.politicopro.com/eenews/f/eenews/?id=00000180-294f-df51-abef-e97fd4990000) on multiple arguments made by LNG Allies, saying, “The science is clear — governments must rapidly wind down — not increase domestic subsidies for — fossil fuel production and use to avoid the worst climate impacts.”

Yesterday, Kate DeAngelis, international finance program manager at Friends of the Earth, said the group is opposed to the Ex-Im Bank’s using the program to finance LNG.

“Such support would contradict President Biden’s Glasgow commitment to end overseas fossil fuel financing by the end of 2022, and would move EXIM in the wrong direction — away from critically needed investment in renewable energy growth,” DeAngelis said in a statement.

DeAngelis said it’s unclear how much the program will aid renewables and energy storage.

“So far EXIM has done very little outreach to the renewables and energy storage industries, so it would require a massive change of direction led by Chair Lewis and a change of mindset by EXIM career staffers,” she said.

The Ex-Im Bank spokesperson emphasized that the agency and “the entire Biden-Harris Administration are deeply committed to financing renewable energy projects that will drive our world towards a cleaner future.”

“That’s why we formed the Chair’s Council on Climate, and it’s why we are incentivizing renewable energy projects in the Make More in America Initiative,” the spokesperson said.

Reporter David Iaconangelo contributed.

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The Washington Post

Democracy Dies in Darkness

THE CLIMATE 202

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Big oil companies are using wartime profits to enrich investors, report says

Analysis by [Maxine Joselow](#)

with research by [Vanessa Montalbano](#)

April 5, 2022 | Updated April 6, 2022 at 12:34 p.m. EDT

Good morning and welcome to The Climate 202! Our friends at the Capital Weather Gang reported that climate change may be increasing the frequency of “false springs,” and we can certainly relate here in D.C., where the cherry blossoms have given way to cold again. 🌸 But first:

Exclusive: Big oil companies are using wartime profits to enrich investors, report says

CORRECTION

A previous version of this article incorrectly included BP America as one of the companies in the report. This version has been corrected.

The nation’s biggest oil and gas companies have significantly increased stock buybacks and dividends since Russia invaded Ukraine in late February, raising questions about whether the firms are using wartime profits to enrich investors instead of curbing Americans’ pain at the pump, three liberal advocacy groups write in a new report shared exclusively with The Climate 202.

The [report released today](#) by **Friends of the Earth**, **Public Citizen** and **BailoutWatch** turns up the heat on the fossil fuel industry ahead of two high-profile congressional hearings this week, when Democrats plan to scrutinize the industry’s windfall profits amid rising crude prices sparked by the war in Ukraine.

The three groups looked at **Securities and Exchange Commission** filings and public statements from the 20 largest U.S.-headquartered oil and gas companies, including **Chevron**, **ConocoPhillips**, **Devon Energy**, **EOG Resources** and **ExxonMobil**.

The groups’ analysis focused on buybacks, which often raise a company’s stock price, rewarding its shareholders. Critics say that buybacks inflate executive compensation while doing nothing to improve a company’s products and services. The groups also examined dividends, the quarterly payments that investors receive for owning shares.

The main findings:

- In January and February, seven companies’ boards authorized their corporate treasuries to buy back and retire \$24.35 billion in stock — a 15 percent increase over all of the buybacks authorized in 2021. Six of those decisions came in February, after fears of Russian aggression against Ukraine lifted stock prices. In total, the 20 companies announced \$45.6 billion in stock buybacks since the start of 2021.
- More than half of the companies boosted their dividends in January and February. Of the 11 companies raising their dividends, nine were increases of more than 15 percent and four were increases of more than 40 percent.
- Six companies have started paying additional dividends on top of their routine quarterly payments, including by implementing new “variable dividends” based on company earnings.

“This is a master class in war profiteering. Humanitarian disaster and consumer pain are being turned into Wall Street profits in real time,” **Lukas Ross**, program manager at Friends of the Earth and co-author of the report, told The Climate 202.

One could argue that boosting payouts to investors could be a net positive for the climate, should those investors choose to reinvest their money in renewable energy companies rather than fossil fuel firms. But **Alan Zibel**, research director at Public Citizen and another co-author of the report, questioned whether that scenario was realistic.

“I wouldn’t necessarily count on investors who collect oil dividends to foster the green energy transition,” Zibel said.

Spokespeople for the oil companies did not immediately respond to requests for comment.

Oil executives in the hot seat on the Hill

The analysis comes after top Democrats on the **House Oversight Committee** yesterday sent a letter to executives at ExxonMobil, BP America, Chevron and Shell urging them to use their surging profits to help lower gas prices and invest in clean energy.

“Big Oil must immediately stop profiteering off the crisis in Ukraine,” says the letter from House Oversight Chair **Carolyn B. Maloney** (D-N.Y.) and Oversight Subcommittee on Environment Chair **Ro Khanna** (D-Calif.).

Meanwhile, the **Senate Commerce, Science and Transportation Committee** will hold a hearing at 10 a.m. Eastern today titled “Ensuring Transparency in Petroleum Markets.”

- The Commerce committee originally invited the executives of ExxonMobil, BP and **Pioneer Natural Resources** to testify at the hearing, but all three companies declined to appear in person. **A committee aide told The Climate 202 that the panel still hopes to host the executives at a later date.**
- In the meantime, the committee today will hear from **Robert McCullough** of **McCullough Research**, an energy consulting firm. He was one of the first people to voice concerns about **Enron**, the Texas energy company that declared bankruptcy in 2001 after revelations of accounting fraud and inflated profits.
- Republicans invited as their witness **Kathleen Sgamma**, president of the **Western Energy Alliance**, a trade group that advocates for oil and gas production in the West.

The **House Energy and Commerce Committee** also still plans to hold a hearing Wednesday featuring the executives of six fossil fuel firms and titled “Gouged at the Gas Station: Big Oil and America’s Pain at the Pump.”

International climate

The world is running out of options to reach climate goals, U.N. report shows

After decades of inaction on climate change, the world is on track to speed past a crucial target of limiting global temperature rise to 1.5 degrees Celsius (2.7 degrees Fahrenheit) by 2030, 278 of the world’s top scientists said Monday in the latest **U.N. Intergovernmental Panel on Climate Change** report, [The Washington Post’s Sarah Kaplan and Brady Dennis](#) report.

Despite the planet already being pushed into unprecedented territory, with ravaged ecosystems and rising sea levels, the scientists said it’s still possible for nations to have a shot at limiting global warming — but humans must halve greenhouse gas emissions in the next eight years.

The report’s authors cautioned, however, that this goal “cannot be achieved through incremental change.” Instead, securing a less catastrophic future requires an almost immediate “societal transformation,” they wrote.

The nearly 3,000-page document marks the IPCC’s first assessment of Earth’s remaining strategies for climate action since the 2015 Paris agreement. It details how coordinated efforts to deploy more renewable energy, overhaul transportation systems, restructure cities, and pull carbon from the air could put the planet on a more sustainable path while improving living standards around the globe.

On the Hill

Sens. Manchin, Cramer oppose SEC climate risk rule, saying it targets fossil fuel companies

In separate letters, **Sens. Joe Manchin III** (D-W.Va.) and **Kevin Cramer** (R-N.D.) wrote to the **Securities and Exchange Commission** opposing its proposed climate disclosure rule, which was announced last month and would require all publicly traded companies to disclose their greenhouse gas emissions and the risks they face from climate change in a standardized way for the first time.

Manchin, a key Democratic vote on climate policy, wrote to the SEC on Monday that the proposed rule is beyond the agency’s authority, and that such policies will add “undue burdens on companies,” specifically those in the fossil fuel industry, **Pippa Stevens** reports for CNBC.

Meanwhile, Cramer led Republican members of the **Senate Banking and Environment and Public Works** committees in a letter this morning calling on SEC Chair **Gary Gensler** to withdraw the rule.

“After failed attempts to enact radical climate policy via legislation, this rule is yet another example of the Biden Administration’s efforts to have unelected bureaucrats implement its preferred agenda through regulation,” the senators wrote in the letter.

The SEC’s proposed rule is in a 60-day public comment period.

Agency alert

Administration unveils plan for improving school infrastructure

Vice President Harris on Monday announced an action plan to invest in the nation's public school infrastructure, including by helping schools make energy efficiency retrofits and switch to electric buses.

The plan, which leverages investments from the bipartisan infrastructure law, spans several federal agencies:

- The **Energy Department** released a [request for information](#) for a \$500 million grant program to make schools more energy efficient, thereby lowering their energy costs and improving air quality for students and teachers.
- The **Environmental Protection Agency** launched online resources to help school districts prepare for a \$5 billion clean school bus program created by the infrastructure law. The program aims to avoid diesel exhaust from bus tailpipes, which produces pollutants that can aggravate asthma in children.

Pressure points

Climate change could cost the federal government \$2 trillion a year by 2100, White House says

Extreme weather events fueled by climate change could cost up to \$2 trillion each year from the nation's federal budget by the end of the century, according to a [first-ever assessment](#) released Sunday from the **White House Office of Management and Budget**, **Timothy Gardner** reports for Reuters.

"Climate change threatens communities and sectors across the country, including through floods, drought, extreme heat, wildfires, and hurricanes (affecting) the U.S. economy and the lives of everyday Americans," **Candace Vahlsing**, an OMB climate and science official, and its chief economist **Danny Yagan**, said in a [blog post](#). "Future damages could dwarf current damages if greenhouse gas emissions continue unabated."

The assessment, which came hours before the new **U.N. Intergovernmental Panel on Climate Change** report, found that the federal government could spend an additional \$25 billion to \$128 billion a year on climate-related expenditures such as coastal disaster relief; flood and crop insurance; and wildfire suppression.

Extreme events

Cold snap in Europe breaks records and stuns spring crops

A record-setting April cold snap has hit Europe for the second year in a row, with temperatures falling 20 to 30 degrees below normal, triggering harsh frosts and shocking early blooming plants in multiple countries, [The Post's Jason Samenow and Kasha Patel](#) report.

The bout of cold weather comes after warmer-than-normal temperatures in recent weeks that prompted a rapid greening of vegetation in the region. Climate scientists say that frequent warming in the late winter months could be increasing the rate of "false springs," which make crops more vulnerable to the threat of frigid temperatures after blooming.

Some research also shows that climate change may exacerbate cold spells in certain times and places because of more erratic jet stream behavior even if winters are globally warmer, although the notion is under debate in the scientific community.

Viral

And now here's some good zebra-related news after all of that dark climate news:



3:03 AM · Apr 3, 2022



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“Even if you agree big tech needs to be restrained, these proposals aren’t the answer.”

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U.S. POLITICS

Big Oil’s gushing profits call for government crackdown, says Sen. Schumer

By Shant Shahrigian

New York Daily News • Apr 24, 2022 at 4:37 pm

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With Americans suffering pain at the pump, the government needs to crack down on big oil companies suspected of price gouging, New York Sen. Charles Schumer said Sunday.

Oil giants are taking advantage and raking in record profits, according to Schumer, who also is Senate majority

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“We know that Russia’s unprovoked invasion of Ukraine has contributed to higher prices at the pump, the same with COVID-related supply issues,” he said in a statement, “but big oil, in my opinion, is using both these issues to pull the wool over all our eyes as it cashes in more and more.

“It’s time for an inquiry at the FTC level, and beyond,” he said.

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Schumer vowed to get law professor Alvaro Bedoya confirmed this week as head of the Federal Trade Commission, enabling the agency to “take a hard look” at potential price gouging.

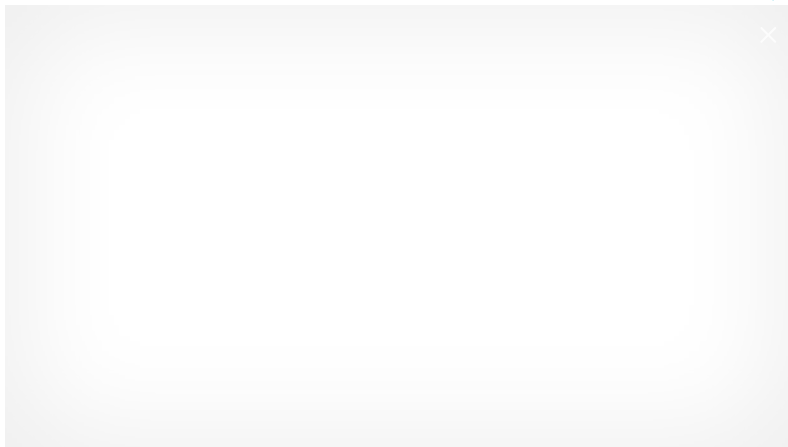
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Cars line up at a Sunoco gas station Florida. (Marta Lavandier/AP)

A former counsel to a Senate judiciary subcommittee, Bedoya would give Democrats a 3-2 majority over Republicans at the agency. Vice President Kamala Harris is expected to provide the tiebreaking vote in favor of Bedoya in the evenly divided Senate.

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The appointment comes as gas prices are averaging more than \$4 per gallon across the U.S., according to

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“Last year, the top 25 oil and gas companies reported a combined \$205 billion, with a ‘B’ in profits,” he said.

“Instead of giving Americans a break at the gas pump, they’ve used their gushing profits to reward shareholders with stock buybacks, which demands answers and inquiry,” he said.

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Senate Majority Leader Chuck Schumer, D-N.Y., meets with reporters following a Democratic Caucus meeting, at the Capitol in Washington, Tuesday, April 5. (J. Scott Applewhite/AP)

He pointed to [a recent report](#) by Friends of the Earth, Public Citizen and BailoutWatch that found the biggest oil and gas companies in the country have hugely boosted stock buybacks and dividends since Russia invaded

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Attachment V

Oil Companies Posted Huge Profits. Here's Where The Cash Will Go (Hint: Not Climate)



A customer uses a credit card to pump gas at a Mobil gas station in Los Angeles on April 28, 2022. High fuel prices have contributed to windfall profits for fossil fuel companies. Patrick T. Fallon—AFP/Getty Images

BY EMILY BARONE

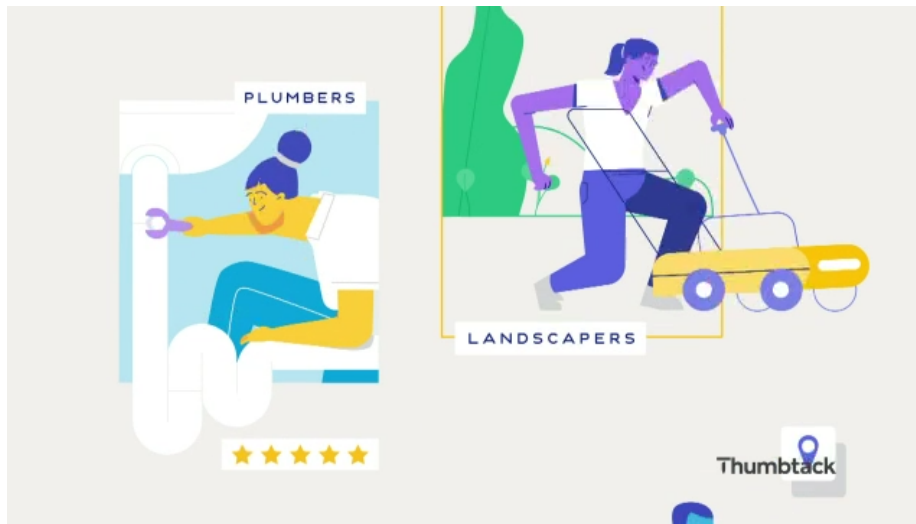
MAY 11, 2022 8:18 AM EDT

As consumers grapple with high fuel prices and politicians scramble to knock them down, oil companies are not making any sudden moves. That's because, after years of low fuel prices, they are now enjoying a financial upswing, as demonstrated by lucrative first quarter earnings reports released in late April and early May.

Oil prices started to creep up in late 2021 due to supply constraints, but then turbocharged after Russia invaded Ukraine in February. For Chevron, the upshot was \$6.3 billion in profits last quarter, up from \$1.4 billion a year ago.

For Exxon Mobil, profits more than doubled in the same period, to \$5.5 billion. The numbers were also rosy for European firms—even among those that took a

hit from severing ties with their Russian investments. TotalEnergies, a French company, netted nearly \$5 billion, a 48% boost from last year, while U.K. companies Shell (at \$9 billion) and BP (at \$6.2 billion) are hitting profit levels that they haven't seen in about a decade.



For the most part, major oil companies aren't going to pour these billions of dollars into climate-mitigation investments like carbon capture technologies. Nor have they signaled any immediate intention to bolster oil production, despite calls from heads of state to do so. Their inaction has spurred U.S. and European countries, which are under pressure to keep fuel affordable, to release oil reserves and replace Russian crude oil and liquid natural gas from other sources. Despite those government efforts, oil prices have stayed above \$100 per barrel, sustaining an influx of money to fossil fuel companies that are passing it on to stockholders and investors in the form of increased dividends and share buyback initiatives that drive up companies' share values.

One analysis from the *Wall Street Journal* found that the nine largest U.S. oil producers spent 54% more in share repurchases and dividends in the first quarter than they invested in new oil developments. Similarly, a recent report covering the 20 largest U.S. oil companies published by the environmentalist organization Friends Of The Earth and consumer watchdog organizations Public Citizen and BailoutWatch, tallied \$56 billion in new share buyback authorizations in the roughly seven months since last October, compared with \$11 billion announced in the nine months before that.



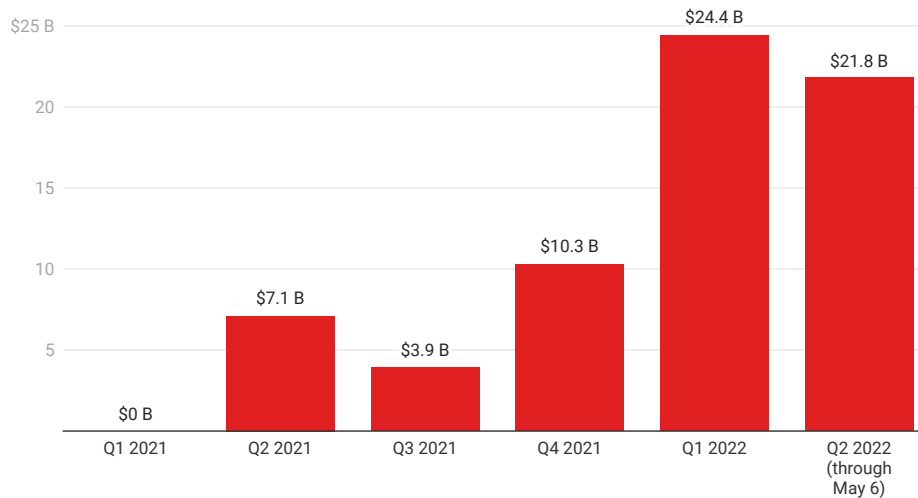
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Industry base points way for low-carbon transition

BY CHINA DAILY

Announced stock buyback authorizations since 2021

Among the 20 largest U.S. oil and gas companies, including exploration and production firms, refiners and LNG exporters



Note: Figures updated from original report to reflect the first weeks of Q2 2022.

Chart: Emily Barone • Source: [BailoutWatch](#); [Public Citizen](#); [Friends of the Earth](#)

TIME

“The industry is effectively transforming a humanitarian disaster and pain at the pump into Wall Street returns,” says Lukas Ross, a program manager at Friends Of The Earth, and co-author of the report. “Exploiting the war in Ukraine is a desperate play on the part of these companies to salvage their reputation with investors.”

Mark Finley, a fellow in energy and global oil at Rice University’s Baker Institute for Public Policy, who was formerly an economist at BP, characterizes the situation differently. He says that it wouldn’t make good business sense for oil companies to immediately invest their quarterly profits given the current geopolitical instability. Because crude oil is a global commodity and individual oil companies do not set the price, executives have to make business decisions based on what they can control and hedge against what they can’t. Investments could take years to pay off and there’s no incentive to change course in flush times.

“These companies are thinking in decades,” Finley says. “None of these companies are going to jump in with both feet on one or two quarters of data and say, we’re completely changing everything.”

Indeed, the industry executives have fresh memories of how things can go very bad very quickly. A glut of supply from a fracking boom during the Obama and Trump administrations pushed down prices. When the pandemic hit and demand came to a standstill, companies posted record losses and felt enormous pressure to pay down debt, scale back investments, and ensure that stockholders would get dividends. The result was limited expansion in both petroleum and clean energy initiatives; a report from the International Energy Agency last summer estimated that about 1% of capital investment by the oil

and gas industry went to clean energy investments in 2020, and that figure was on track to hit just 4% in 2021.

Even in light of recent earnings, oil companies are still largely practicing the so-called “capital discipline” strategies that they implemented during their leanest times, but Ross expects that the industry is positioning itself to capitalize on the political environment to ensure its long-term relevance. In particular, he points to the American Petroleum Institute’s appeal for expedited fossil fuel infrastructure permits and more natural gas exports, which President Biden then agreed to.

“The oil and gas industry, in addition to trying to seize this moment for all the profits it can squeeze, is trying to lock in another generation of extraction emissions,” he says.

READ MORE: *This Is How We Quit Big Oil*

Finley also thinks that companies will benefit as politicians look for ways to stabilize the energy market—though he doesn’t think that it will necessarily come at the expense of a broader shift to green energy.

“We used the words ‘energy transition,’ and in our minds we jumped to the end state. We figured that if we’re not using fossil fuels in a future world, then we don’t need to invest in fossil fuels,” he says. “But you need a functioning energy system that delivers secure, affordable, reliable energy at each discrete point in time between now and that end state. And the reality is, today, that means fossil fuels. We could actually come out of this crisis with more investment in oil and gas, *and* more of a focus on a transition.”

That may seem paradoxical, but it’s clear that politicians feel both ire at the industry’s blockbuster quarterly profits even as they acknowledge the world’s dependence on the products it sells. Consider that in recent weeks, U.S. Congress members grilled oil executives about gas-pump prices while President Joe Biden has supported more drilling leases on federal land, reversing a 2020 campaign promise. At the same time across the Atlantic, European leaders considered imposing a “windfall tax” on oil companies for their recent fortunes while U.K. Prime Minister Boris Johnson has called for more drilling in the North Sea.

Dieter Helm, professor of economic policy at the University of Oxford who has written several books on the world’s addiction to fossil fuels, says that policy shifts tied to the industry’s short-term wartime profits aren’t likely to make or break 2050 net-zero climate targets. What’s more, fixating on them loses sight of the much bigger picture.

He points out that western oil companies are only one part of the industry; national oil companies like Saudi Aramco control more than half of global oil and gas production—but they haven’t been under the same pressure to

decarbonize as their free-market counterparts. Also, the trends that will take place among advanced economies may be eclipsed by developing nations leaning into fossil fuels as their economies and populations grow. And finally, he says, there hasn't been a concerted effort to stop the destruction of the soils, forests, and water sources that naturally sequester carbon dioxide.

“This is a tragedy, but this is the reality of what’s actually happening, as opposed to this story—which I wish was true but isn’t—that we’re all in this together on a net-zero transition and we’re going to crack climate change within 28 years,” he says. “There’s no path that we’re currently on which looks anything like that.”

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Attachment W

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ENERGY

5 Oil Execs Cashed Out \$99 Million in Stock During Ukraine Invasion

A new analysis illustrates the ways some of Big Oil's leadership has managed to profit off of war.

By Mack DeGeurin 5/11/22 12:55PM | Comments (5) | Alerts



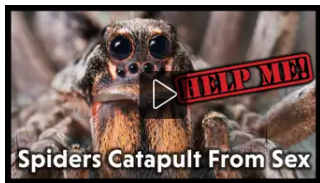
Photo: David McNew (Getty Images)

Russia's [invasion](#) of Ukraine has, in two long weeks, brought untold suffering and instability. Yet, where most reasonable observers see an escalating tragedy, Big Oil CEOs see an opportunity.

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That's according to a new [analysis](#) conducted by nonprofits BailoutWatch and Friends of the Earth, which claims at least five oil executives have cashed out nearly \$99 million worth of stock since late February. Specifically, the organizations claim Hess Corporation's CEO sold 650,000 shares worth a total of \$65 million between March 4 and March 8. Pioneer Natural Resources Director reportedly sold \$10.6 million worth of shares between February 24 and March 3. Three other executives—Pioneer CEO Scott Sheffield, Marathon Oil CEO Lee Tillman, and Continental Resources President Jack Stark—combined sold around \$23.3 million worth of shares.

“The CEOs of these companies have been caught cashing in on war,” Lukas Ross, program manager at Friends of the Earth, said in a statement. “If we want to protect consumers from pain at the pump, or preserve a livable climate, it is clear the age of fossil fuels must end.” The report, released Thursday, comes just two days after the U.S. [announced](#) it would ban Russian oil imports.

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At the same time, the report finds 18 of the world’s top oil CEOs have increased their collective net worth by \$8 billion since Joe Biden took office. Contrary to some [predictions](#), Biden’s climate agenda isn’t exactly forcing executives to scrap together second jobs anytime soon. The same can’t be said for workers. A separate [analysis](#) conducted by BailoutWatch claimed workers at Chevron, ConocoPhillips, and Phillips 66 all endured layoffs in 2020, while the CEOs for those same companies gave themselves raises.

Though oil industry supporters regularly attack Biden’s energy policies, the president’s climate [report card](#) is, in reality, a mixed bag. Despite cheerleading meaningful commitments to phase out fossil fuels, Biden simultaneously [reopened](#) a federal program to sell oil and gases leases on federal land and eventually [oversaw](#) one of the largest lease sales in the nation’s history. Adding to that, an [analysis](#) conducted late last year by advocacy group Public Citizen determined the Biden administration had approved more fossil fuel leases on public lands than Trump had in any year of his presidency other than 2020.



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While Biden’s climate policies certainly represent a step back from Trump’s “drill baby drill” edict, they’re still a far cry from an oil-crushing boogeyman. Even in the face of emerging pro-climate policies, the new analysis demonstrates how oil executives can still find paths to turn a profit when pressed.

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“The actions of these oil executives make it clear that no matter how much they groan about the Biden Administration’s environmental policies and blame Putin for high prices, their focus remains entirely on lining their own pockets,” BailOutWatch data analyst Christopher Kuveke said in a statement. “There’s no use looking for other answers in the industry’s school of red herrings.”

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3/12/22 4:00pm

Here I am thinking “Oh, not big news. I bet it was part of a 10b5-1 trading plan.”

I look up Form 4 for the transactions on EDGAR and am sadly disappointed.

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Attachment X



Regaining Europe's Energy Sovereignty

15 Priority Actions for RePowerEU

IMPULSE

Matthias Buck
Alexander Dusolt
Fabian Hein
Christian Redl
Andreas Graf
Michaela Holl
Oliver Sartor
Claudio Baccianti

253/04-I-2022/EN
Version 1.3
March 2022

Agora Energiewende | Regaining Europe's Energy Sovereignty

Dear reader,

Russia's full-scale invasion of Ukraine on 24 February 2022 massively escalates its illegal war of aggression that began in 2014 and that has unleashed terrible suffering on the Ukrainian people. The war also presents a historical turning point for European energy and security policy as it casts a harsh spotlight on the EU's current reliance on Russian fossil gas imports.

On 11 March 2022, EU heads of state agreed to phase out EU dependency on Russian fossil fuel imports as soon as possible. To this end, the European Commission will prepare a "RePowerEU" plan by the end of May 2022.

First ideas on RePowerEU give little consideration to reducing fossil gas demand and remain vague on scaling renewable energies. This is regrettable, as actions to meet EU climate targets also reduce fossil gas consumption, and are therefore worth taking, no matter what the future may hold.

The fifteen priority actions on energy efficiency and on renewables developed in this report should thus be at the heart of Europe's efforts to regain its energy sovereignty.

Sincerely yours,

Matthias Buck
Director Europe, Agora Energiewende

Key findings

1

The escalation of Russia's war against Ukraine has created a fossil energy crisis and has exposed the EU's dependency on fossil gas imports. If the EU fully mobilises all available means to reduce energy demand and switch to renewable energy, Europe can regain its energy sovereignty by 2027. Energy efficiency in buildings and industry as well as a fast ramp up of wind and solar PV can permanently reduce fossil gas demand by 1200 terrawatt hours in the next five years, allowing to avoid 80% of today's Russian gas imports and enabling a 100% displacement when combined with alternative supplies such as LNG.

2

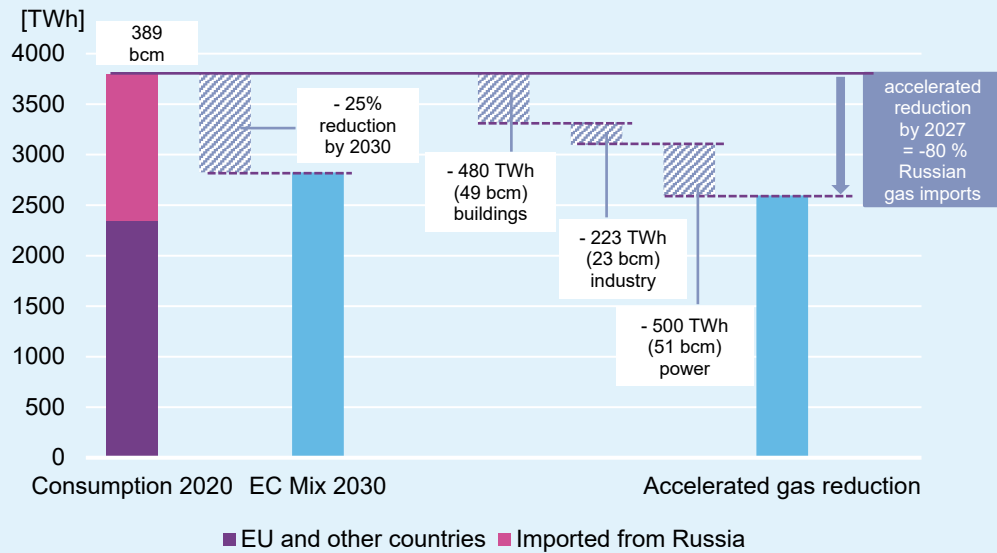
Climate protection and energy security go hand in hand, as actions to meet the EU climate targets also reduce fossil gas consumption. Until 2027, energy efficiency, district heating and a heat pump revolution can save 480 TWh in buildings; efficiency and electrification in low and medium temperature heat processes can provide for 223 TWh savings in industry, and a ramp up of wind & solar PV combined with more system flexibility will contribute 500 TWh in the power sector.

3

Regaining Europe's energy sovereignty by 2027 requires a collective European effort based on joint commitments and solidarity. The RePowerEU plan needs to mobilize the reductions identified in this study. Similar to the COVID recovery efforts, the plan must be embedded in a strong political framework overseen by the European Council to ensure its swift and full implementation. Helping Ukraine build back better after the war should be part of the efforts.

4

A new EU Energy Sovereignty Fund, modelled on NextGenEU and equipped with 100 bn EUR until 2027, should be set up as part of a dedicated investment framework to deliver RePowerEU. The framework also needs to ensure that existing EU funds are re-purposed wherever possible and governments smartly combine price signals and protection for poor households and industry.

EU-27 fossil gas consumption and reduction potentials

Results EC mix scenario 2030 and Agora calculations based on Artelys, TEP, Wuppertal Institute

15 Priority Actions for REPowerEU**Buildings**

1. Introduce an EU-wide Check & Act campaign and mobilize a Civilian Energy Corps
2. Make the training of skilled professionals for the energy transition a key priority
3. Stop installing new gas boilers
4. Rapidly scale up the production and installation of heat pumps
5. Rapidly scale up building renovation
6. Connect more homes to district heat networks and make them greener and more efficient

Industry

7. Don't regulate industrial gas and energy prices, let the demand signal work.
8. Take emergency measures to avoid irreversible reduction in EU industrial and agriculture production
9. Accelerate the uptake of renewable solutions for low and medium-temperature industrial heat
10. Regulate industry to ensure all cost-effective energy savings measures are taken
11. Rapidly scale material efficiency and enhanced recycling of energy-intensive materials

Power

12. Pull all stops for renewables deployment and manufacturing in Europe
13. Mandate solar rooftops, solar on the built environment and maximize PV self-consumption
14. Fully and ambitiously transpose existing electricity market rules to enhance power system flexibility
15. Strike a smart balance between direct electrification and green hydrogen production

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1 Reducing gas demand to eliminate Europe's dependence on Russian gas and regain energy sovereignty

In 2014, Russia started an illegal war of aggression against Ukraine by annexation of Crimea and continued low-scale warfare in the Donbas region in Eastern Ukraine. On 24 February 2022, Russia launched a full-scale invasion of Ukraine that shocked the world community and unleashed terrible suffering on the Ukrainian people. The war has cast a harsh spotlight on Europe's current reliance on Russian fossil gas, coal and oil imports.

As part of a broader discussion concerning European energy and security policy, EU leaders have vowed to phase out Russian energy imports as soon as possible. To this end, the European Commission will prepare a "RePowerEU" plan by the end of May 2022.¹

While oil and coal are globally traded commodities that can be sourced from other countries, it will be far more difficult for Europe to procure fossil gas from alternate sources. Over the last twenty years Europe has increased its structural and economic dependence on pipeline gas from Russia, which today accounts for 40% of fossil gas consumed in Europe, with some countries (including Estonia, Finland, Bulgaria, Latvia) almost entirely reliant on Russian gas. Accordingly, addressing Europe's dependence on pipeline gas imports from Russia will necessarily play a central role in the RePowerEU plan.

The European Commission has already sketched out initial ideas for the RePowerEU plan, and has invited

Member States to begin a dialogue on the most suitable projects and reform measures at the national, regional and EU levels.²

Concrete measures proposed by the Commission to date include substituting Russian gas with ship-borne LNG imports and alternative sources of pipeline gas (e.g. from Azerbaijan). The Commission has also proposed increasing the 2030 production target for biomethane from 17 to 35 bcm. However, the Commission has been much less specific regarding measures to permanently and structurally reduce fossil gas consumption in industry and in buildings, and for accelerating the expansion of renewable energy capacity. Prioritising reduction of gas demand is, however, necessary since fossil gas cannot anymore be considered as a 'bridge fuel'.

Additional attention must be devoted to these topics during the further development of the RePowerEU plan. Rapidly reducing demand for fossil gas will not only strengthen European energy security, but also help the EU to meet its climate targets for 2030.³ Furthermore, reducing fossil gas consumption is far preferable to replacing one fossil fuel dependency with another.

A supplementary benefit of reducing fossil gas consumption will be to reduce expenditures on fossil gas imports. The estimated 1200 TWh reduction in gas consumption by 2027 would save an estimated 127–318 billion euros between now and 2027, and generate additional savings going forward (see Table 1).

1 Versailles Declaration of 10 and 11 March 2022, para. 16., available at <https://www.consilium.europa.eu/media/54773/20220311-versailles-declaration-en.pdf>.

2 COM (2022) 108 final of 8 March 2022.

3 In 2020 the Commission projected that reaching the EU's 2030 climate target would imply reducing fossil gas use in Europe by 25% by 2030 relative to 2020 levels.

Table 1: Cumulative savings from reducing fossil gas consumption by 1200 TWh up to 2027

Fossil gas price	Savings
Future prices for 2023 to 2027*	127 billion euros
Current average price over last 6 months of 80 EUR/MWh	318 billion euros
Current maximum price of 200 EUR/MWh	795 billion euros

* TTF Prices from Feb 28th, rounded. To calculate cumulative savings we assume linear reduction of fossil gas consumption up to 2027 year over year and multiply the overall amount saved by the gas price

This report focuses on measures to permanently reduce Europe's structural dependency on fossil gas within the next five years. Section 2 describes current fossil gas demand in Europe. Section 3 quantifies the main options for reducing fossil gas use in buildings, industry, and the power sector from now up to the end of 2027. Sections 4–6 develop potential elements of the RePower EU plan, including its political framework, priority actions, and investment measures. Section 7 describes associated trade, employment and economic effects.

2 Status quo of fossil gas use in the EU

In 2020, the EU-27 consumed approximately 3800 terawatt hours of fossil gas, 90% of which was imported. By far the largest share of imports comes from Russia (~40%), followed by Norway (~20%) and North Africa (~10%). The domestic production share fell by half over the past decade to approximately 10% of demand,⁴ such that the EU is now more dependent on Russian gas than it was in 2014, when Russia illegally occupied Crimea and invaded the Donbas region of Eastern Ukraine.

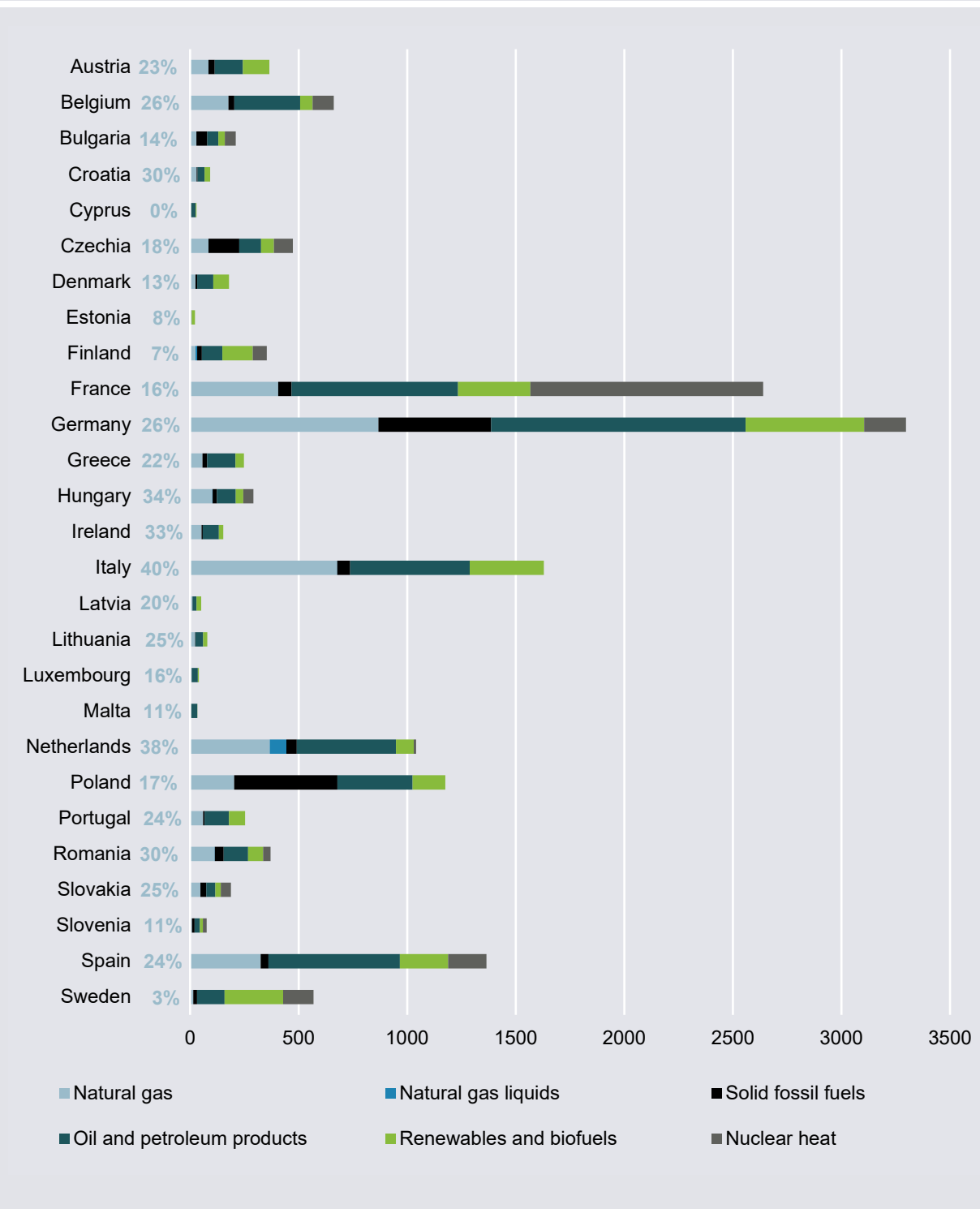
European countries diverge considerably in their reliance on fossil gas as an energy source. Germany and Italy are the largest absolute consumers of fossil gas, while in the Netherlands, Hungary, Croatia, Germany and Romania, fossil gas covers the highest shares of total energy demand (see Figure 1 below)

Fossil gas plays an important role as an energy source for heating buildings and as a feedstock and source of energy in industry. In some countries, the power sector is also strongly reliant on fossil gas (see Figure 2 below)

In this way, efforts to rapidly reduce fossil gas demand will pose divergent challenges for each European country, based on their current consumption patterns. Furthermore, as fossil gas can no longer be considered a "bridge fuel", some countries will need to re-assess plans to achieve climate neutrality.

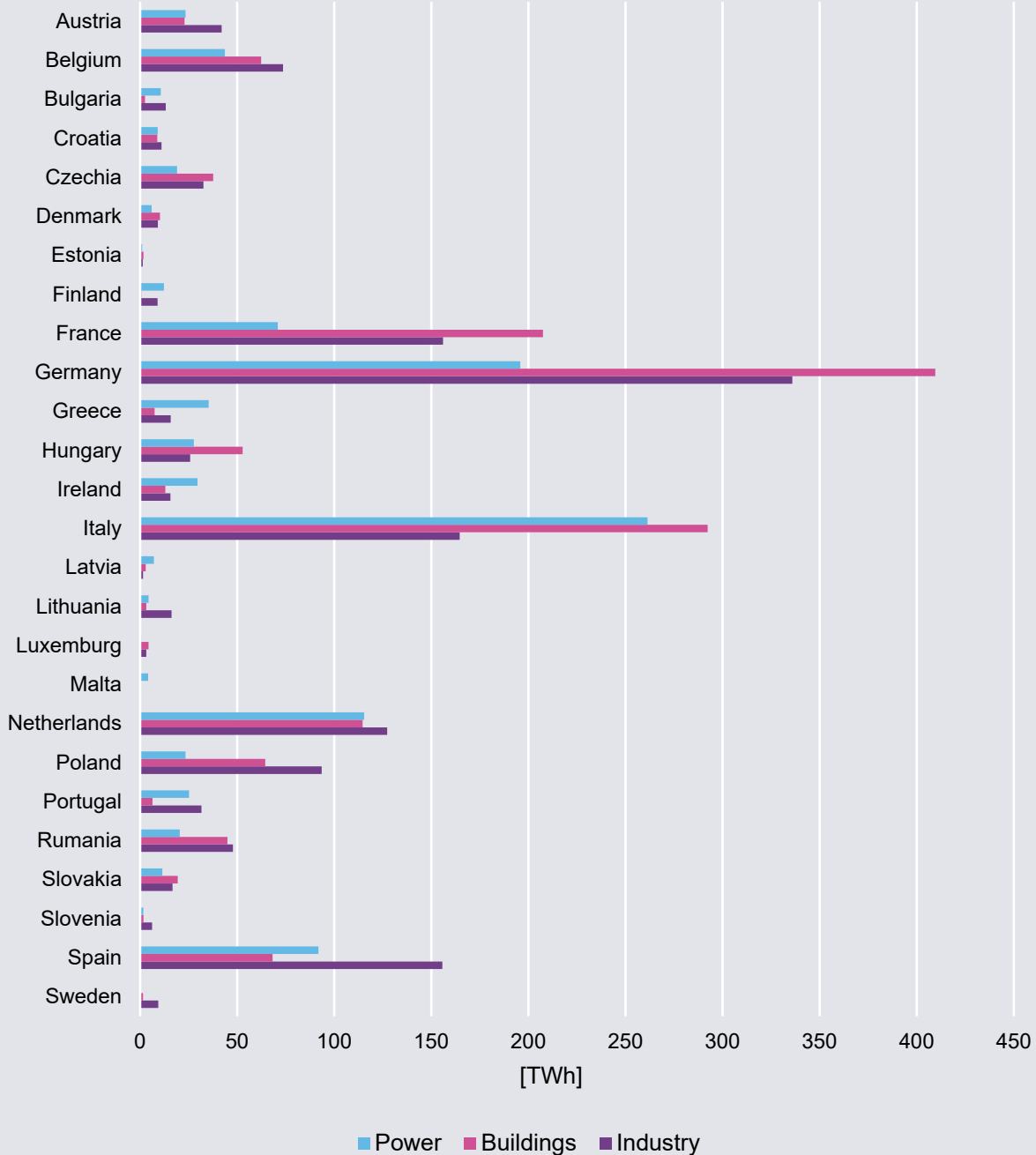
4 See <https://www.acer.europa.eu/gas-factsheet>

Figure 1: Total available energy in EU member states in terawatt hours and fossil gas share in % for 2020

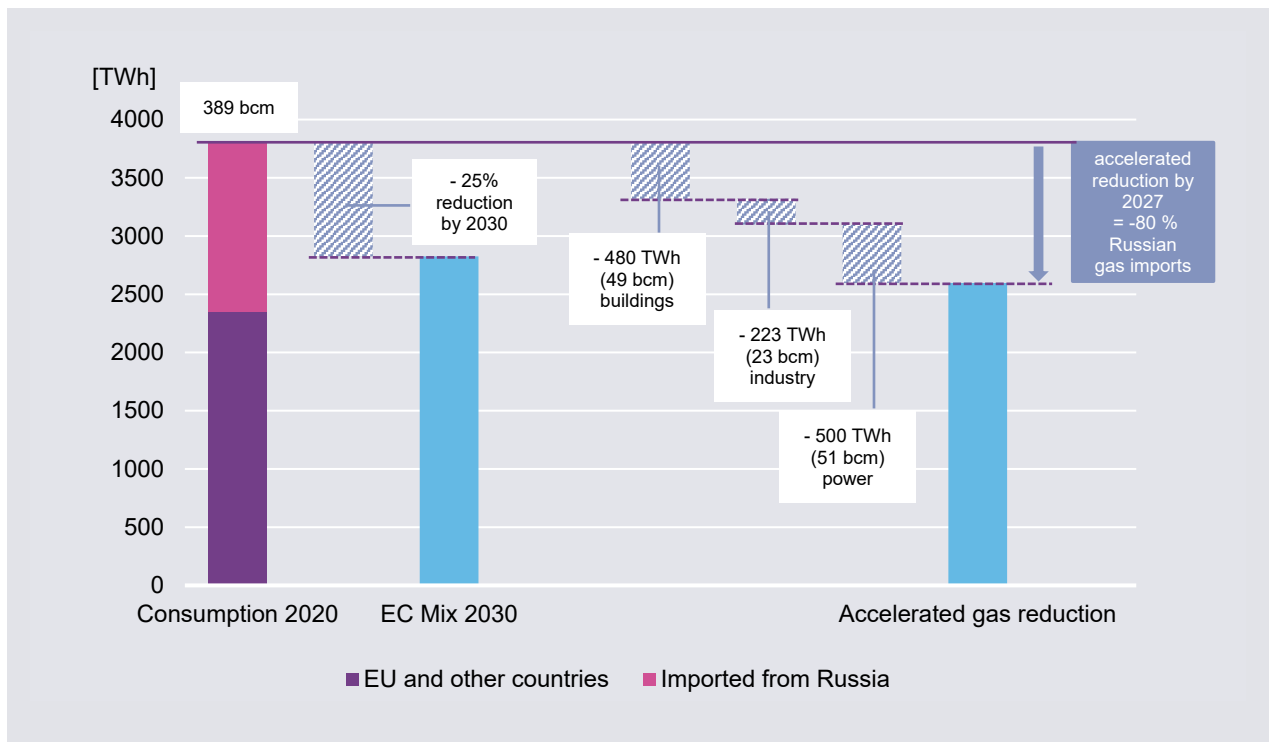


Source: Eurostat (2022)

Figure 2: Fossil gas consumption by sector in EU member states in 2020



Eurostat (2022). Numbers converted to terawatt hours from terajoule (gross calorific value).

Figure 3: EU-27 fossil gas consumption and reduction potentials

Source: Results from the EC mix scenario 2030 and Agora calculations based on Artelys, TEP, Wuppertal Institute

3 Achieving a structural reduction in fossil gas demand by 1200 TWh by 2027

In 2020, fossil gas consumption in the EU-27 stood at 3800 TWh. As part of current EU planning for a 55% reduction in greenhouse gas emissions by 2030, fossil gas consumption is projected to decline 25% between 2020 and 2030. However, Russia's war on Ukraine makes it essential to reduce fossil gas consumption in Europe even faster. But how quickly can fossil gas demand be reduced? And how do we avoid merely replacing one dependency with another?

Based on modelling performed for Agora Energiewende by Artelys, TEP Energy and the Wuppertal Institute and discussions with experts, we estimate

that the EU-27 could reduce fossil gas consumption by 1200 TWh up to the end of 2027. This reduction would avoid 80% of today's Russian gas imports, enabling a 100% displacement when combined with alternative supplies such as LNG reduction. This figure is based on modelled fossil gas reduction pathways for the industry, buildings and the power sector in line with the EU's 2030 and 2050 climate targets.

Importantly, the estimated reductions would be of a *structural nature* and *thus permanently reduce fossil gas consumption in Europe*, irrespective of where fossil gas is sourced. It should be noted that this discussion of how to reduce structural dependency on fossil gas over the mid-term is distinct from the issue of immediate measures to reduce fossil gas

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consumption in order to prepare for winter 2022/23 and a potential interruption of the gas supply from Russia (see Infobox 1).

As shown in Figure 3, the largest potential for reducing demand exists in the power sector (-500 TWh). This is followed by the buildings sector (-480 TWh) and by industry (at least -223 TWh and up to -410 TWh).

These estimates of fossil gas reduction potential pertain to the EU-27 as a whole. We have not yet broken them down to the country level. However, it is evident from Figure 2 that each EU country has a divergent reduction potential, and that the attendant challenges will be different for each country.

The modelling underpinning our estimates nevertheless provides a robust indication of priority measures that should be developed as part of the EU's RePowerEU plan.

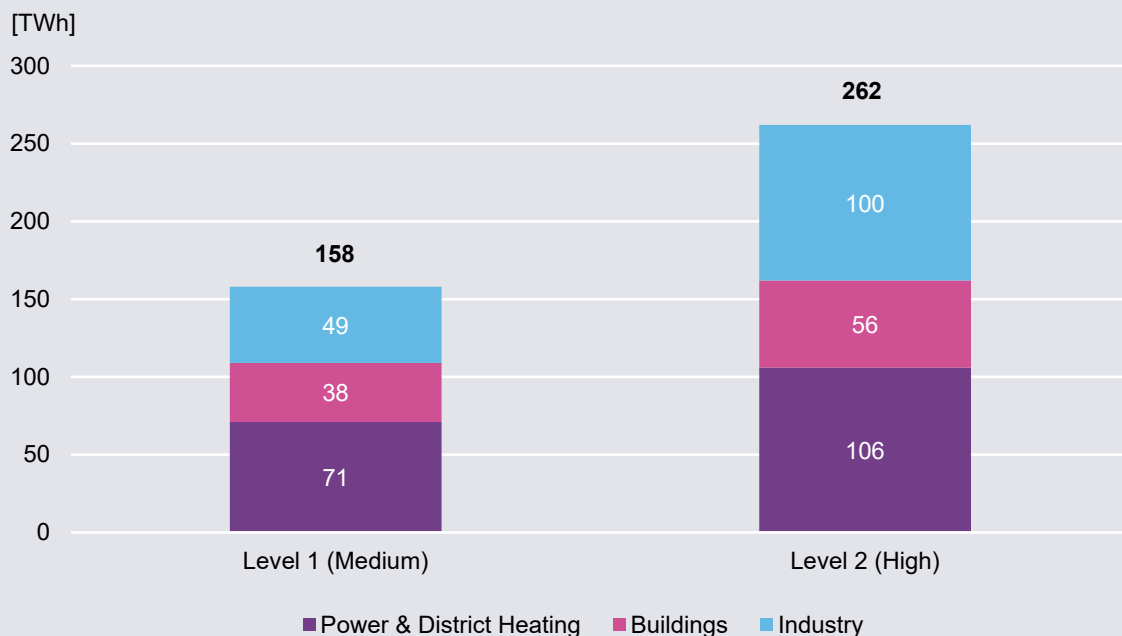
The remaining part of this section describes the technical reduction potentials, including the main levers for reducing and/or substituting fossil gas in industry, buildings and the power sector. We also provide an estimate of investment needs and identify challenges to reducing demand.

INFOBOX 1. Immediate actions to reduce fossil gas consumption in run-up to winter 2022/23

Any reduction in fossil gas consumption before winter 2022/23 leaves the EU in a better position with regards to storage levels, demand pressure on gas markets, and other impacts from potential supply disruptions resulting from Russia's war against Ukraine. Our recommended immediate actions to reduce fossil gas consumption in the run-up to winter 2022/23 include:

1. Fuel switching in the power sector, district heating and buildings (e.g. use of oil in gas CHP plants).
2. Short-term operational efficiency improvements for wind turbines and biomass plants.
3. Encouraging citizens and business owners heating with gas to save energy, e.g. by turning off heating in unused spaces, reducing room temperature by 1-2°C (-10 bcm for each degree of reduction) or installing smart heating controls, at cost of normally less than €250.
4. A broad campaign to invest into low-cost and highly beneficial energy savings measures, e.g. attic, roof or top floor ceiling insulation, draught-proofing of windows and doors, reflective radiator panels, water tank and heating pipes insulation, water-efficient showerheads, and energy-efficient LED light bulbs and household appliances.
5. An initiative to incentivise industry to save and substitute fossil gas in low temperature heat applications of 100°C or less, which currently constitute 40% of industrial gas usage, e.g. rapid installation of higher temperature heat recovery units and the adoption of industrial heat pumps, e-boilers, geothermal and solar thermal solutions.

A recent analysis by Agora Energiewende and Prognos estimates that between 158 and 262 TWh in fossil gas can be saved in Germany with such short-term measures.

Short-term gas savings potential in Germany across different sectors (in TWh)

Agora Energiewende (2022) und Prognos (2022)

Buildings: Reducing fossil gas use by 480 TWh by 2027 through energy efficiency and a heat-pump revolution.

The fossil gas consumption in the buildings (residential and tertiary) sector could be reduced by 480 TWh from around 1400 TWh today.

Improving the efficiency of existing gas boilers (-15% or 72 TWh): Significant gas savings can be achieved by optimising the operation and installation of existing gas boilers so that they achieve their full technical efficiency potentials. Modern condensing gas boilers often have rated efficiencies of higher than 90%, but rarely achieve these values in practice. Measures that can be taken to improve the performance of gas boilers include reducing set temperatures for boilers to no-higher than 60°C, avoiding the installation of oversized boilers, installing load or weather compensation as well as occupancy controls and performing a hydronic balancing to optimise system pressure hydronic (water-based) heating and cooling systems. In non-residential buildings the operation of ventilation systems can also be significantly improved by adjusting set-points and adopting occupancy controls (e.g. based on CO₂ concentration), improving health and well-being.

Building renovation (-15% or 72 TWh): It is estimated that roughly one-third of the EU's building stock was built before energy performance requirements were introduced into building codes (from 1970s onwards). As requirements in the next decades were fairly low, the vast majority of buildings are currently energy inefficient. However, both the weighted EU renovation rate and the rate of new construction are estimated at roughly 1%, far below the rate of 2–3% required to achieve the EU's 2030 climate target. Accelerated and targeted building renovation with low-investment-cost solutions can reduce fossil gas demand significantly in the next five years. Achieving these reductions will first and foremost require significant improvements in the thermal envelope of buildings in order to reduce heating and cooling

losses and minimise investment costs associated with the electrification of heating & cooling. Associated refurbishment measures include improving roof, ceiling and wall insulation, draught-proofing and the installation of efficient windows and doors to create an airtight enclosure of the building shell.

Replacing existing gas boilers with renewable heat-technologies (-65% or 312 TWh): In 2017, an estimated 59% of installed capacity for individual heating systems in the EU relied on fossil gas, nearly two-thirds of it is either older than the technical lifetime (11%) or in the 2nd half of its technical lifetime (47%).⁵ More than half of existing gas boilers are relatively inefficient.⁶ The EU is thus in the midst of a significant refurbishment cycle that could either help significantly reduce the EU's gas consumption or lock it in for decades to come. In 2021, German households alone installed an estimated 929,000 new heating appliances, of which 653,000 were new gas boilers – an increase of 5% compared with the year before.⁷ At the same time, alignment with ambitious decarbonisation and fossil gas phase-out scenarios will require all systems aged more than 15 years to be replaced by non-fossil alternatives in the upcoming years. Significant reductions in fossil gas consumption could thus be achieved through an accelerated replacement of the existing stock of gas heating systems older than 15 years with heat pumps, district heating and, to a more limited extent, biomass:

5 (Forthcoming) Fraunhofer ISI, Öko Institute, TU Wien: Description of the heat supply sectors of individual EU Member States Space heating market summary 2017-European Union (EU-27)

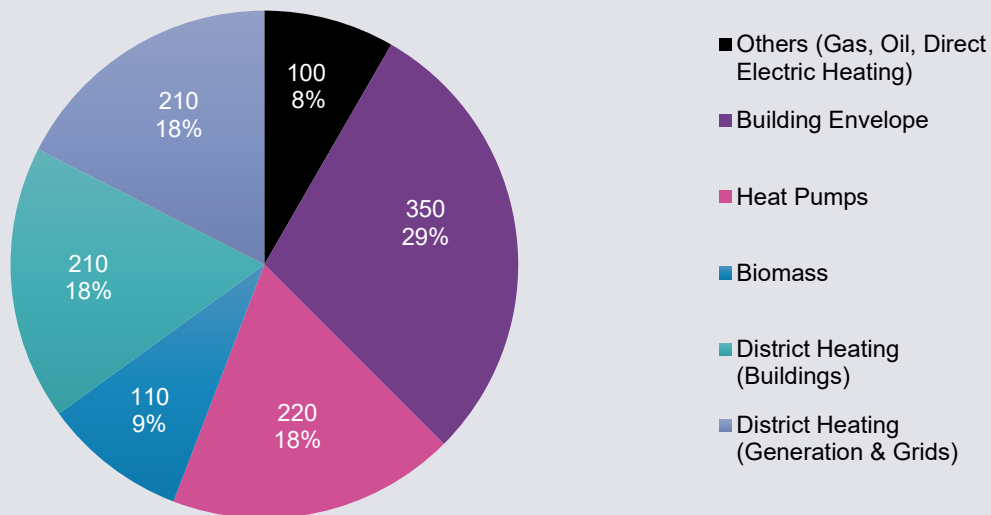
6 ECOS (2020) Five Years Left: How ecodesign and energy labelling can decarbonise heating.

7 BDH (2022): Marktentwicklung Wärmemarkt 2021

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-
- **Heat pumps (~140 TWh):** Small-scale heat pumps for space and water heating in residential and commercial buildings are inherently more efficient than fossil gas boilers, and can convert 1 kWh of electricity into between 2.5 and 5 kWh of useful heat depending on the climate, heat pump technology and the performance of the technical heating system. On average, the installation of a heat pump will lead to reductions in fossil gas consumption, even in cases where the power used by a heat pump is fully generated by a fossil gas power plant. The electrification of heating also allows heat pumps to achieve reductions in fossil gas consumption through fuel switching to alternative energy sources (e.g. renewables, nuclear, oil, coal). As a result, roughly doubling the stock and floor area supplied by heat pumps between 2022 and 2027 could help to significantly reduce overall fossil gas consumption.
- **District heating (~125 TWh):** District heating and cooling networks provide roughly 10% of heating and cooling in buildings in the EU, serving some 70 million EU citizens, including more than half of the population in Latvia, Denmark, Estonia, Lithuania, Poland, Sweden and Finland. While roughly one-third of these sales are supplied by fossil gas, district heating systems are generally more efficient than individual fossil gas heating systems and enable a fuel switch to both alternative fossil fuels, as well as renewables and waste heat. District heating systems could thus help to significantly reduce fossil gas demand through densification (i.e. new connections to existing grids), the spatial expansion of existing grids to service new customers and the building of new district heating networks. Combined, these measures could increase the floor area supplied by district heating by ~50% between 2022 and 2027, while only increasing energy demand in district heating by ~30%. Even if this growth in demand increases fossil gas consumption in district heating slightly in the short-term, it is still projected to reduce fossil gas consumption in buildings overall by displacing significantly more fossil gas in individual fossil gas boilers. This significant switch to district heating is achieved while decreasing emissions by: (1) phasing-out coal, (2) significantly increasing the supply of renewable energy and waste heat sources and (3) implementing short-term operational energy-efficiency measures, i.e. by decreasing supply temperatures, managing customers needs and dismantling inefficient boilers and co-generation systems.
- **Biomass and biogas (~47 TWh):** Additional individual biomass and biogas heating systems can also help to reduce the fossil gas demand in both the short and medium term. However, their installation must be weighed against significant concerns about the limitations on the sustainable supply of biomass.
- Switching fuels in existing gas boilers (~5% or 24 TWh):** Additional reductions in fossil gas consumption can also be achieved through the use of heating oil or LPG in existing boilers (mainly large non-residential buildings).
- Required investments:** The investments for a faster decarbonisation of the buildings sector are around 1200 billion euros. This implies the replacement of gas heating systems after 15 years and should be compared with a base scenario where gas boilers are replaced at the end of their technical lifetime (after 20–30 years), which already requires spending 840 billion euros. Investments can be complemented with enhanced maintenance and efficiency improvement measures (10 to 15 billion euros per year, about 65 billion more than in 2027). Most investment must go into district heating, the building envelope and heat pumps (see Figure 4).
-

Figure 4: Investments between 2022-2027 in the EU27 in buildings sector in billion Euros, including district heating. Biomass includes solid and gaseous biomass.



TEP Energy (2022)

Key challenges:

- **Labour and skills shortages:** A sharp rise in demand for heating replacements – roughly one-quarter of all gas and oil boilers need to be exchanged in the next 5 years – combined with the need to optimise the remaining gas heating systems and accelerate insulation improvements, presents a real challenge for the availability of skilled labour. The biggest challenge is likely to be the rapid expansion of heat pumps, which will require a doubling of both the current stock and the annual installation rate over the next five years.
- **Price effects:** The rapid increase in demand will also lead to price effects for the planning, installing and purchasing of heating systems, as well as for all other renovation works.
- **Integrated planning:** The accelerated phase-out of gas boilers will require a rapid development of integrated local heating and cooling plans to identify priority targets for building renovation and heating replacement, zone areas for district heating and synergies with other infrastructure investments (e.g. electricity grids) to reduce infrastructure investment costs.
- **Existing buildings and heating systems:** The efficiency of the building stock and the performance of existing technical systems could be a bottleneck for both the deployment of heat pumps and the expansion of new and existing district heating and cooling networks.
- **Stranded assets:** Many heating systems and gas grid investment won't reach their technical lifetime, leading to financial losses for building and gas-grid owners.

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→ **Growing demand for biomass and fossil fuels:**
 Without guardrails, the EU's new climate targets could push demand for bioenergy beyond sustainability limits and jeopardise the EU's 2030 climate target by increasing coal and heating oil consumption in heating & cooling.

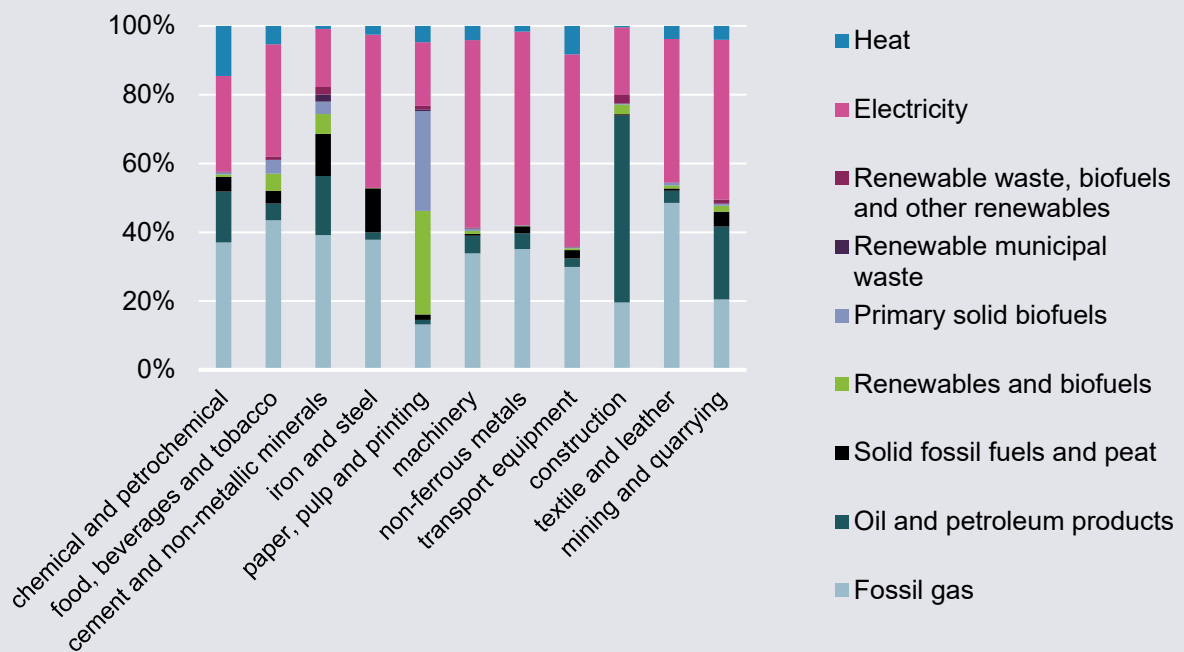
feedstock for non-energy purposes (e.g. in the chemicals and petrochemicals sectors). Gas reduction strategies must tackle both of these usages. As shown in Figure 5, in all of these sub-sectors there is fuel switching potential to either heat, electricity, renewables or even light petroleum products as a temperature solution.

Industry: Reducing fossil gas use by at least 223 and up to 411 TWh by 2027

Industry is responsible for around 20.5% of annual EU fossil gas use as energy (around 860 TWh in 2019). This figure rises to 25% if gas use as a feedstock is included (1060 TWh in 2019). Some 84% of industrial fossil gas is used as an energy source for heat and for steam production, while 16% is used as a

Low-temperature heat (up to 150°C): The largest short-term potential to reduce fossil gas demand in industry is from energy savings and fuel switching for low-temperature heat applications. In 2018, 40% of industrial gas use (343 TWh) was used in fossil gas boilers for temperature levels of 100°C or lower (i.e. space heating, hot water supply and steam). A further 10% was used for steam and low-grade process heat up to 200°C (86 TWh). Given robust – but not

Figure 5: Share of gas in final energy consumption by industrial sub-sector in 2020



Eurostat, Energy Balances, Energy Flow statistics (2020 data). Notes: The main consuming industrial sub-sectors are: Chemicals and petrochemicals production (21% of industrial gas energy consumption), food beverages and tobacco (14%), cement and non-metallic minerals (14%), steel production (8%), pulp paper and printing (7%) and machinery manufacturing (6%).

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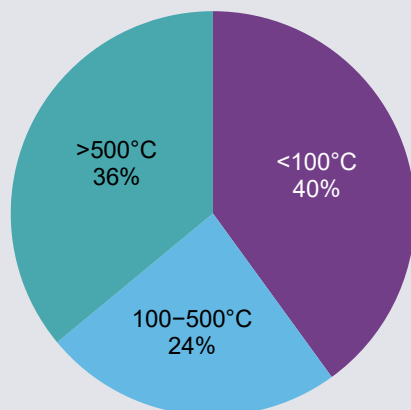
impossible – policy ambition, up to 75% of this gas for temperatures below 150°C could plausibly be replaced within 5 years. Depending on the extent to which this goal is achieved, this could create direct gas demand reduction savings of 170 to 283 TWh under the best case scenario.

The main measures available to industry are:

- Widespread deployment of industrial heat pumps
- Better insulation of industrial buildings
- More efficient recovery of waste heat from high temperature processes
- Fuel switching to electricity and other renewables for steam and low-process heat production, including to solar thermal and geothermal.

These measures would reduce gas consumption and total primary energy consumption in industry.

Figure 6: Share of industrial gas use as energy, by heating temperature (2018)



Agora Energiewende and AFRY Management Consulting:
No-regret hydrogen (2021)

Medium temperature heat (150–500°C) accounts for a further 19% of industrial gas use for energy. Significant potentials also exist here to structurally reduce gas demand. This gas is used both for steam, medium temperature process heat and in combined heat and power (CHP) units. We estimate that fossil gas demand could be reduced in medium temperature industrial heat use by 30–80TWh by 2027 under a best case scenario.

Key levers to reduce gas consumption in these categories include:

- Replacing gas boilers with high temperature industrial heat pumps (most efficient)
- Installing small-scale concentrated solar thermal power units (most efficient)
- Replacing gas boilers with e-boilers in hybrid systems
- Reducing electricity production in CHP from fossil gas
- Switching gas for light fuel oil in existing gas boilers

Constraints: An important constraint on some medium temperature heat processes, such as e-boilers, is that they are less energy efficient than heat pumps or local renewable solutions. Thus, if they draw grid power, they must be operated during times when they do not induce net increases in total system-wide energy and fossil fuel demand. In member states where coal or gas is still used at the margin in the power market, electrified solutions such as e-boilers should thus be part of hybrid systems where their use is either limited to certain load hours where gas is not used at the margin, or else they must be integrated into real time power markets.

High temperature heat (>500°C): Around 36% (308 TWh) of energetic fossil gas used in industry in the EU is used in high temperature heating applications, such as cement kilns, in steel production and in crackers in the chemicals sector. Key levers to

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reduce gas consumption for high temperature energy use in these categories include:

- Expanding high-temperature direct electrification solutions (e.g. replacing gas-based naphtha crackers with e-crackers in the chemicals sector, increasing existing Electric Arc Furnace and high-quality scrap recycling capacities, investments into induction furnaces, resistance furnaces, electric ovens, and other electric heating systems)
- Replacing fossil gas with solid biomass waste (e.g. in paper, glass, lime, foundries and ovens) or biogas and biomethane (e.g. in the chemicals or steel sector)
- Replacing fossil gas with non-recyclable mixed solid waste (e.g. in cement kilns)
- Expanding chemical and mechanical recycling of plastics
- Increasing enhanced copper and alloy sorting and separation technologies for closed loop recycling of primary steel and aluminium

Constraints and potentials: The fossil gas reduction potential in the area of high temperature heat is much more limited in the short term than for low and medium temperature heat. For high temperature heat, solutions must be tailored to the sector and to individual sites. Broadly applicable requirements are therefore more difficult to formulate. In some sectors, such as steel, an increase in gas use will potentially be needed to accompany the transition to hydrogen, making total reductions of gas consumption in this segment more difficult to estimate. Thus gas use in this segment may increase in some industries and decline in others. Our estimate is of potential savings of 3–20TWh by 2027; which represents only 1-5% of the total estimated potential.

Replacing fossil gas used as a feedstock via circular economy, material efficiency and substitution measures: Around 16% of fossil gas demand in industry is for use as a feedstock, most notably in chemicals production. The following options must be

pursued as part of the transition to climate neutrality and could be accelerated during the next 5 years:

- Reduce consumption of virgin plastics (especially single-use plastics). By 2030, up to 149 million barrels of oil equivalent worth of naphtha and 2.7 billion cubic meters of gas-derivative feedstock inputs into plastics could be saved. For gas, this would be roughly equivalent to 28 TWh of fossil gas in terms of energy content.⁸
- Prioritise clean and fossil free hydrogen as an alternative to grey or blue hydrogen. 50% of gas used for grey hydrogen to produce ammonia could be replaced by 2030, according to the European Commission. A 20% replacement of gas-based ammonia with electrolysis by 2027 and a 50% replacement would be equivalent to savings of 9.6 TWh and 24 TWh of fossil gas by 2030.
- Increase the use of alternative organic fertilisers. Replacing 10% of industrial fertilisers with organic fertilisers could save around 3.8 TWh of fossil gas currently used for EU ammonia production.
- Reduce wasteful ammonia-based fertiliser consumption. Up to a 5% reduction could be incentivised by allowing for higher prices for gas-based ammonia fertilisers in a short time frame. This would be equivalent to a 1.9 TWh of gas savings within the next 1-5 years.

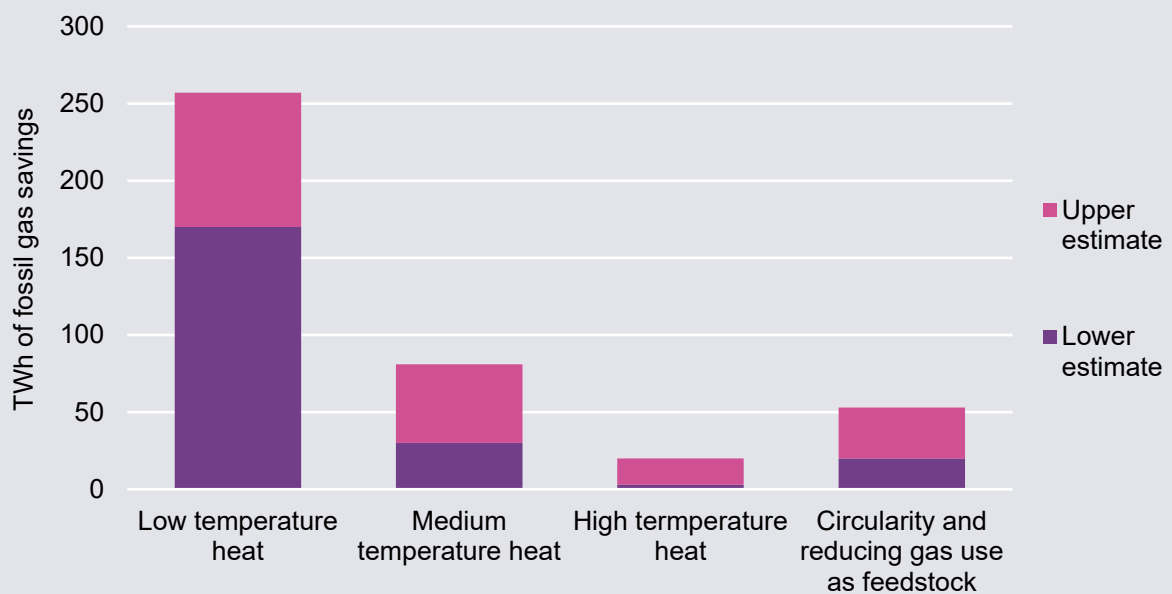
Summary of industrial potentials: In total, we estimate that the industrial sector in the EU has the potential to reduce fossil gas consumption between 223 and 411 TWh up to 2027. The wide range of this estimate reflects uncertainties surrounding the strength of policy incentives, the effectiveness of

⁸ Since here the majority of the inputs saved are fossil gas derivatives, they are not direct substitutes for fossil gas for all end-usages. Nevertheless, total fossil gas consumption in the EU's regional market and EU imports of fossil gas and its derivatives would be saved by such measures, thus helping to ease overall supply and demand constraints.

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policy implementation, and the creation of sufficient economic incentives for the supply and installation of necessary technologies within the required timeframe. The vast majority of this potential pertains to total fossil gas demand (including non-fossil gas). The main exception would be the expanded use of hydrogen as a feedstock in the steel and ammonia sectors. We estimate that this increase in *non-fossil* gas demand could be met based on the hydrogen quota of 50% for Renewable Fuels of Non-Biological Origin that is discussed as part the Update of the EU Renewable Energy Directive, with production reaching 32.6 TWh by 2027 and 81.5 TWh by 2030.

Figure 7: Potential fossil gas demand savings of 223–411 TWh in industry across the four main categories of measures



Agora Industry (2022)

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Power: Reducing fossil gas use by 500 TWh through ramping up wind & solar PV faster, reducing the share of gas in baseload and increasing system flexibility

From 350 to 900 GW within 8 years – a true European industry project. Scenarios that achieve climate neutrality by 2050 typically feature a carbon-neutral power system by 2035, mainly based on wind and solar. A decarbonised power system is also a key element to reduce fossil gas dependency, because clean power can go a long way in decarbonising the areas where fossil fuels are still dominant.

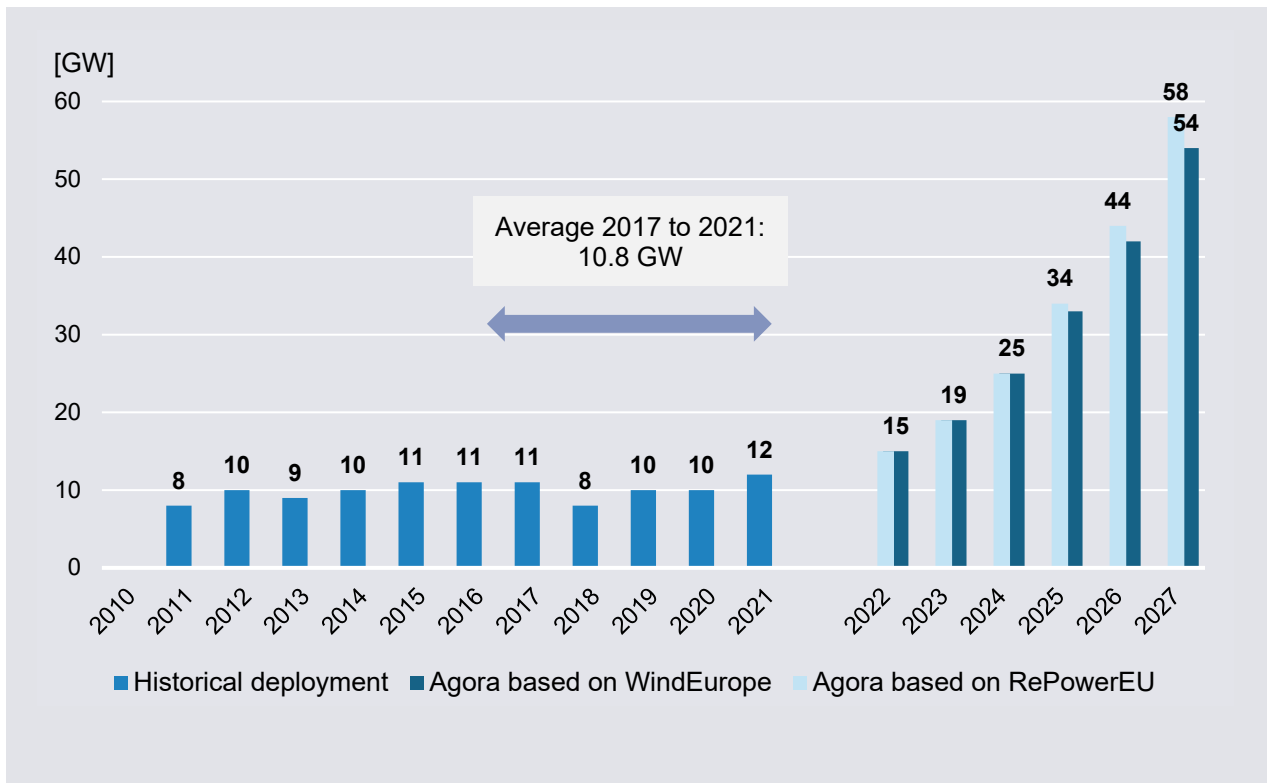
The current EU ambition set out in the Fit-for-55 package would see Europe reach 427 GW of installed wind power capacity and 383 GW of installed solar power capacity by 2030. The RePowerEU Commu-

nication raises these figures by a further 90 GW to 480 GW of wind capacity and 420 GW of solar capacity by 2030, with 80 GW earmarked for additional green hydrogen production. In 2021, the EU had 192 GW of wind power capacity and 158 GW of installed solar power.⁹

The new targets under RePowerEU would more than double (by a factor of 2.5) installed capacity by 2030, reaching in 2027 approximately 377 GW of installed wind capacity and approximately 329 GW of solar PV. We estimate that this share of renewable power in the mix would lead to a corresponding reduction of fossil gas for power production by 500 TWh by 2027 (see Infobox 2).

Notably, the wind capacity deployment projected by the Commission is consistent with what the wind

Figure 8: Historical and projected deployment rates for wind (onshore and offshore)



Adapted from the European Commission (2021) and WindEurope (2022)

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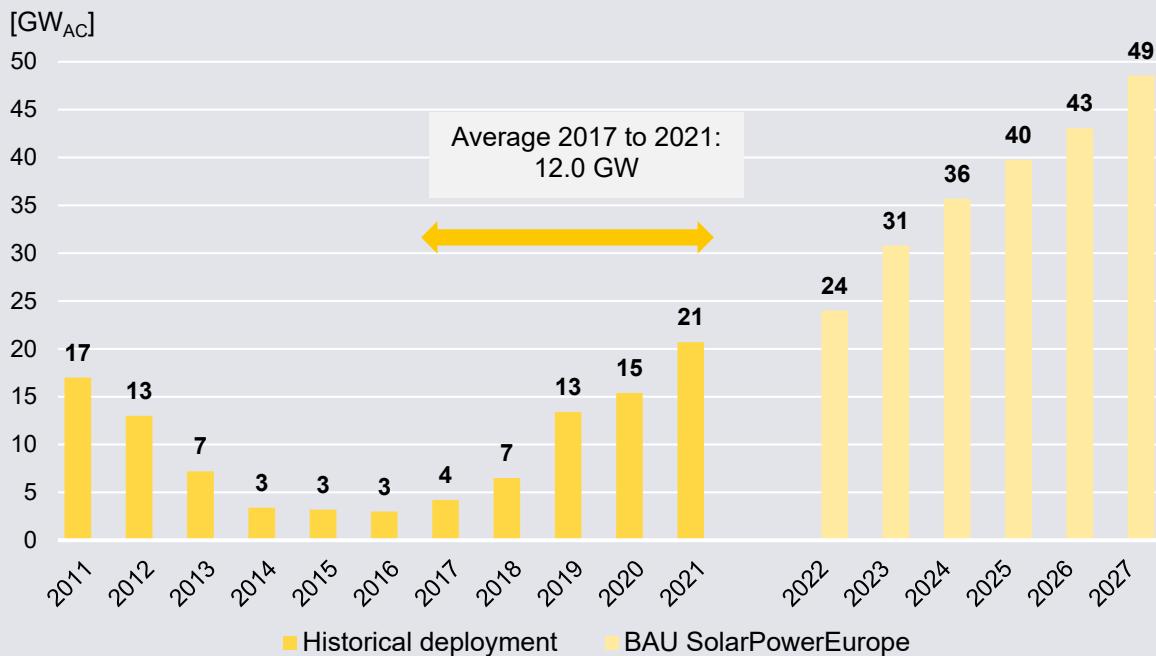
industry considers feasible (see Figure 8), whereas the solar PV figures projected by the Commission remain below what market see in the current project pipeline and far below what the industry believes is feasible with the right conditions in place (see Figure 9).

Technical feasibility: The updated wind power installation target of 480 GW by 2030 is aligned with the industry's estimates for the end of the decade, provided an enabling regulatory framework and favourable funding conditions are in place. Around 80% of the new wind turbines will be built onshore, the rest offshore. **However, an instant and real gear-shift in scaling new wind turbines is needed to reach the projected deployment pathway.**

While the RePowerEU target for wind reflects the upper end of industry's potential, the solar PV industry could see Europe reach an installed solar capacity of around 600 GW by 2027 under its "accelerated high scenario" – assuming that the EU were to follow an ambitious high policy support regime mirroring China's approach to solar PV expansion.

For example, much more than the 15 GW additional rooftop PV featuring in the RePowerEU strategy seems achievable because more than 90% of European rooftops suitable for PV deployment are still unused.¹⁰ Other options include early re-powering of existing solar installations with more efficient modules. In addition, solar PV could be expanded to new areas along transport corridors, other unused built environments and as agrivoltaics. Unlike biogas, agri-

Figure 9: Historical and projected deployment rates for solar PV



Solar Power Europe (2022); numbers in AC converted from DC numbers with a factor of 1.25

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voltaics would allow the continued use of the land for harvesting, avoid additional pressure on soils and provide an additional income source for farmers.

Investment needs and public support

A research project by Aurora Energy Research for Agora Energiewende estimates that the solar and wind power installations added to meet the Fit for 55 ambition by 2030 (hence not yet the additional ambition of RePowerEU) will need support of circa 118 billion euros. This is the amount needed to make the new installations investible and stabilise their revenue streams. The support would be disbursed over the lifetime of the installation, to a large extent after 2030. Support contracts can be financed through either levies or government budgets. This estimate significantly depends on future gas, ETS, wholesale and capture prices and future power demand. Commitments could be as low as 30 billion or as high as 285 billion euros. The bulk of support would be required for offshore wind, where investment sums and project risks are high.

With only 20 billion euros committed in all recovery plans for renewables support, it is clear that additional funding at both the EU level and the national level will be required to meet the EU's higher ambition on renewables. Notably, the faster scaling of offshore wind energy also means that more than 6.5 billion euros projected in the EU's offshore strategy for upgrading ports to become offshore hubs and for transmission network capacity are needed.

For PV, the amount of support needed also depends on the type of capacity installed – i.e. rooftop PV or more innovative PV such as PV integrated into buildings or agriPV, which is still more costly.

Another factor determining necessary support levels is the effect of very high shares of renewable electricity on market revenues. Depending on the extent of power system flexibility periods of low or even negative prices are reduced.

A high share of renewables however reduces wholesale prices overall to the benefit of all power users.

Electricity Grids: Power cables, not pipelines will constitute the backbone of the future energy system. Numerous studies have shown that renewables expansion and the growing electrification of buildings, industry and transport will need strengthened and modern power grids. The bulk of these investments will occur at the distribution grid level. Transmission and distribution grid investments were not modelled as part of this analysis. Based on various scenarios (Goldman Sachs, McKinsey, Eurelectric and EC modelling), estimates range from 0.9 billion euros to 3 billion euros of grid investments per additional GW of RES in the EU, resulting in 470–1650 billion euros of cumulative grid investments for this decade. This compares to 130 bn between 2011–2020 according to Commission data.

INFOBOX 2. Renewables and fossil gas consumption in the power sector

The amount of fossil gas displaced in the power sector is estimated to be 500 TWh. This estimate is subject to assumptions on renewables deployment, fossil gas prices, coal prices, ETS prices and their relations. With increasing volumes of renewables, the additional amount of fossil gas displaced decreases, because the full load hours that fossil gas power plants operate are expected to decrease: From 2800h in 2018 to around 1400h in 2025. Fossil gas power plants will mainly run during hours when renewable production is low or to provide balancing and system services. Renewable electricity on the other hand will power additional electricity demand from electrolysers, heat pumps, electric vehicles, electric industry applications and also replace mainly coal, lignite and nuclear generation.

Flexibility, demand response and security of supply

Our modelling indicates that overall gas turbine capacity in the power sector will remain almost constant until 2030. However, as renewable electricity continues to penetrate the market, the use pattern will increasingly shift to peak supply with an average of 1400 full-load hours in 2025 and further decreasing thereafter. In view of the policy objective – a climate-neutral power system by 2035 – any new gas-power investment needs to be 100 % hydrogen-ready by the end of this decade.

Safeguarding system adequacy is an increasingly dynamic issue. It is not only about the quantity of capacity installed, but also about the kind. Similarly, cross-border system integration lowers the costs of achieving a reliable power system. The recent rejection of the first EU system adequacy assessment by ACER – which argued that achievable market revenues were underestimated and the value of demand-side response is not fully captured in ENTSO-E's modelling – suggests that more is possible with measures that avoid adding new cabling.

Demand response will need to get more attention amid reduced dependency and increased industrial electricity demand. Technically it would be possible in many cases to shift demand by a few hours, adapt production accordingly and, increasingly, add storage capacity for intermediate products and hot air. Similarly, the retail sector can shift power demand by, say, controlling store heat or cold for short periods of time. Such peak shaving together with further deployment of storage ensures that peak gas use in the power sector remains as low as possible. Finally,

heat pumps and EVs can contribute to balancing supply and demand in power grids. However, current buildings, electric vehicles and charging stations often lack the technical systems required to fully exploit such potential.

Battery storage: Although battery costs have significantly declined in the past years (-89 % since 2010), Lithium-ion batteries are not cheap enough to profitably store power. This said, the Commission projects that deployment of large-scale stationary batteries will increase from 3 GW today to more than 11 GW in 2026.¹¹ But that would not be enough: Our modelling suggests that 27 GW of stationary batteries will be needed in 2027 for RePowerEU. This comes with an investment of -11 billion euros per year. Goldman Sachs estimated that annually around 8 billion euros need to be invested for battery storage to support grid flexibility in Europe by 2030. Unlike hydrogen, batteries have not been present in RRFs so far.

Renewable hydrogen: Finally, more electrolyzers will also add flexibility capacities to the power system. The REPowerEU communication places a strong focus on hydrogen over other flexibility options. It envisions an increase of the EU's hydrogen production to 20 million tonnes by 2030, which represents 15 million tonnes to in addition to the 5.6 million tonnes projected to be produced under the Fit-for-55 package. These are very ambitious objectives, indeed, and with blue hydrogen no longer available (see Infobox 3 below), larger quantities of renewable hydrogen will thus be needed and they will be needed a lot earlier than previously assumed. Our calculations suggest the need for 22 GW of electrolyzer capacity by 2027, which seems to align with the Commission's objective of 6 GW of installed electrolyzer capacity by 2024 and 40 GW by 2030 and plans of Member States announced in their economic recovery plans. Three things are now more important than ever: Steering green hydrogen only to applications that cannot decarbonise

11 See https://energy.ec.europa.eu/system/files/2019-06/report-_battery_storage_to_drive_the_power_system_transition_0.pdf

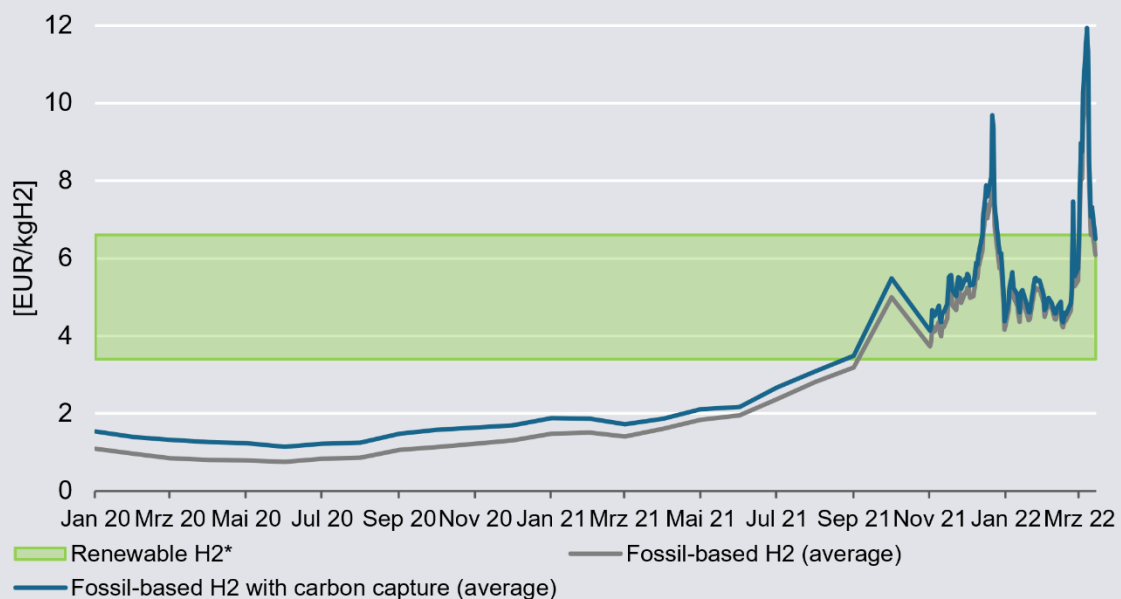
INFOBOX 3. The changing economics and geopolitics of blue hydrogen and the even higher pressure on green hydrogen to emerge

'Blue' hydrogen produced from fossil gas with carbon capture and storage plays a prominent role in many decarbonisation scenarios, in particular as a transitional fuel until 'green' hydrogen produced from renewable electricity becomes widely available. Considering the current objective of reducing Europe's dependence on (Russian) fossil gas, fossil gas-based hydrogen can no longer be considered part of the solution. On the contrary, next to concerns over its compatibility with net-zero ambitions, the inevitable conversion losses in the production process of blue hydrogen means that its scaling would tend to increase the EU's reliance on fossil gas in a time of great market scarcity. Prevailing gas prices have also decidedly undermined the business case for blue hydrogen while significantly enhancing the competitiveness of green hydrogen (see figure below).

With blue hydrogen unlikely to feature as a viable and competitive alternative for the foreseeable future, renewable hydrogen will be in increasingly scarce supply relative to growing demand, especially for applications that currently rely on fossil gas and fossil hydrogen, and which cannot achieve climate neutrality with alternative pathways such as direct electrification. Therefore, an accelerated deployment of renewable hydrogen must be accompanied by an equally strong commitment to prioritise and target deployment of renewable hydrogen in no-regret applications (e.g. steelmaking, basic chemicals, aviation and shipping), to abandon ideas for inefficient applications (e.g. grid-based blending) and to emphasise the additionality of renewable electricity production when hydrogen is supported.

Failing to achieve this prioritisation and reorientation would put parts of EU industry at considerable risk of offshoring, not least those already reliant on hydrogen produced with fossil gas (e.g. ammonia). Uncertainty regarding the sufficient availability of renewable hydrogen could also risk reinvestment in fossil technologies with considerable lock-in effects, in particular in industries (such as steel) facing significant reinvestment cycles over the next decade.

Cost of renewable H2 and fossil-based H2 with carbon capture 2020-2021



Agora Energiewende and Guidehouse (2022)

* Renewable H2 production based on RES direct connection / RES PPA

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with other means (industry, high-temperature uses, maritime and aviation), prioritising green hydrogen across all Fit-for-55 areas, and adhering to state aid rules as long as provisions for low carbon hydrogen are not yet fully defined.

Key challenges

Permitting: Long, complex and uncertain permitting processes for both new and repowered wind and solar PV projects are a serious obstacle across Europe.¹² Better staffing and training of planning and permitting authorities and some restrictions on legal challenges against renewable energy projects, considering the overriding public interest in ramping up renewables as fast as possible, are the most important levers to accelerate.

Spatial planning for renewables: Another problem is the currently insufficient designation of areas for developing renewables in spatial planning, resulting in lack of available land. Available seaspace is also a major issue for offshore wind projects.

Grid-related issues: Several aspects of grid planning and policies stand in the way of faster renewables uptake. There is still a significant amount of uncertainty around the awarding of grid connections. In around half of EU Member States, the costs of grid connection are also an issue. Infrastructure development is not fast enough and often unpredictable whether it will happen and by when. Moreover, infrastructure planning often does not factor in future consumption and production centers.

Revenue stabilisation, de-risking and funding volumes: The projected massive scaling of new solar and wind capacities to regain energy sovereignty in Europe constitute an energy and industry project

comparable in scale and ambition to the expansion of nuclear power in Europe in the 1960s and 70s. It will require substantial investment volumes, including for grid expansion. Renewable energy companies will not be ready to invest at the required scale unless governments offer a robust investment framework in the form of revenue stabilisation and de-risking investments.

Supportive legislative environment: Not all discriminations for wind and solar have been removed from EU legislation and the Fit-for-55 proposals, such as renewables heating not being based on bioenergy. Clear rules are also needed for hydrogen deployment. In particular, the EU needs fully prescribed standards for low-carbon production based on lifetime emissions. These standards must underlie state aid and the EU budget and rules for green hydrogen that minimise fossil gas use in production.

Supply chain issues: Even if the dependence on input material for wind and solar is only an issue during the manufacture of generation equipment – in contrast to fossil fuels, where dependency occurs throughout the operation period – the scale of the ramp-up will put pressure on supply chains. Steel, copper, aluminium and raw materials will need careful monitoring. In the case of solar energy, a full re-establishment of solar manufacturing is a possibility, as was laid out by the Fraunhofer institute in 2020.¹³

¹² See <https://resmonitor.eu/en/>

¹³ See <https://www.ise.fraunhofer.de/de/veroeffentlichungen/studien/sustainable-pv-manufacturing-in-europe.html>

4 RePowerEU must be developed as a European political project based on joint commitments and solidarity

The European Council has entrusted the Commission with developing a RePowerEU plan by the end of May 2022. It is critical that this plan becomes a European project based on joint commitments and solidarity, underpinned by the necessary political, human and financial resources to fully see through the implementation of the plan.

There are two main reasons why this is critical:

Widely differing dependencies and means: As shown above, the specific challenges of rapidly reducing fossil gas consumption differ widely between countries in Europe. The share of households depending on fossil gas for heating whose energy bills are impacted by rapidly rising prices is much higher in some countries than in others. And similarly, the necessary investments for replacing fossil gas for heating are very unevenly spread across countries, many of which have below-average GDP per capita. Europe's uneven dependence on fossil gas will become even more visible should gas imports from Russia be interrupted by the EU or by Russia due to the sanctions.

If phasing out dependency on Russian gas is a common political objective of the EU, Member States with particular exposure to Russian gas (e.g. the Baltic countries) and with lower-than-average GDP and fiscally fragile countries will need support.

Need to anticipate Russian interference: In the run-up to and during its full-scale invasion of Ukraine, the current Russian leadership has used Europe's dependency on Russian gas as a political and economic weapon. Based on this experience, we cannot expect the Russian leadership to stand by idly over the course of five years while we gradually eliminate our dependence on Russian fossil fuels – and thereby

eliminate large parts of the revenue base that keep the regime alive.

The EU-27 countries have shown remarkable unity when putting in place the sanctions package against Russia. However, the widely differing impacts of the energy security and energy price crisis resulting from the war already pose a challenge to maintaining political unity. European unity will also be put to the test after the war, when the Russian leadership will try to achieve an early lifting of the sanctions.

A robust governance framework to deliver RePowerEU

The challenge of maintaining unity is arguably greater than during the COVID-19 pandemic. But important lessons can be learned:

Joint commitments in the RePowerEU plan must be concrete and actionable, they must be embedded in a dedicated process that drives full and effective delivery, and it must be supported by a dedicated investment framework.

- Policy direction by EU heads of state and government is essential. The European Council in June 2022 should formally launch the RePowerEU plan. Thereafter, heads of state and government should regularly take stock of progress and set new priorities moving forward.
- EU Energy and climate ministers as well as EU Finance ministers should regularly discuss the challenges in implementing RePowerEU and agree on concrete steps to resolve them.
- Senior officials of energy and climate ministries of Member States, supported by the Commission, should cooperate on the exchange of information and experience and offer support.
- The Commission should establish a dedicated Energy Sovereignty Task Force modelled on the EU Recovery Task Force with the sole task of supporting Member States in delivering their planned national contributions to RePowerEU.

→ The European Parliament's ITRE, ENVI and BUDG committees should regularly organise hearings on the state of RePowerEU and its implementation.

Solidarity also means helping Ukraine build back better

While writing this report, the Ukrainian people are fighting a heroic battle for their freedom as the Russian army not only targets the Ukrainian military, but also deliberately kills civilians and destroys energy and industrial infrastructure.

After the war ends, countries in the European Union owe it to the Ukrainian people to help them rebuild. This commitment should be an explicit component in the RePowerEU plan.

5 Fifteen priority action areas for RePowerEU

In the following, we propose 15 priority action areas for the RePowerEU plan: six for buildings, five for industry, four for power.

Each of these priority action areas highlights a key technological, regulatory or behavioural lever for achieving the gas savings described in this report, as well as some concrete actions that policymakers can take to harness them. Some of the actions require EU-level action others need a firm national commitment. All should be addressed as potential priority actions for inclusion in the national contributions to the RePowerEU plan.

With energy prices at record levels and the EU's energy sovereignty in jeopardy, governments must act swiftly and with determination to protect their citizens and companies. Yet it would also be a failure not to recognize the power of exactly these price signals to reduce fossil gas consumption. Governments should therefore smartly use price signals to

reduce gas demand and mobilize the needed private investments in clean technologies, while protecting vulnerable households and critical parts of the industry with targeted support.

Priorities for the buildings sector

Action Area 1. Introduce an EU-wide 'Check & Act' campaign and mobilise a Civilian Energy Corps

- Launch a large 'Check & Act' media & communications campaign to promote energy saving measures and mobilise citizens to take action on reducing gas consumption supported by communication material to promote energy savings, introduce free online energy savings consultations in all EU languages and create a platform to share best practices in communication on energy savings. The campaign should include communication activities that help bust common myths about heat pumps.
- Require utilities, district heating companies and providers of thermal billing services to identify clusters of buildings with high thermal demand via a central data platform in order to identify buildings to be targeted for priority demand reduction and boiler replacement.
- Develop and launch Citizen Energy Corps that support cities and regions across the EU in quickly training and mobilising teams of professionals, students, apprentices and civil service volunteers to help citizens in achieving energy savings. Trained members of the Citizen Energy Corp should be provided thermal imaging cameras to go door to door to identify cold spots and help install simple energy savings measures, set heating and boiler controls and provide information on cost-effective 'do-it-yourself' measures.
- Where possible, train members of the Citizen Energy Corps to identify the relative suitability of the roofs of the buildings they are visiting, as well as provide information on the benefits of so-

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lar rooftop PV and support programs available in the community (see Action Area 13).

- Launch a campaign to install thermal insulation in all attics and roofs in the next 5 years.
- Help towns, regions and cities by bulk-ordering energy saving materials and equipment and helping to finance energy audits, vouchers and green technology showcase events.
- Adopt energy efficiency obligations for commercial and public sector office buildings and aim for the adoption of energy management systems in all commercial and public sector buildings heated by fossil gas in the next two years, supported by public grants and loans.

Action Area 2. Make the training of skilled professionals for the energy transition a key priority

- Develop national plans and training programs to ensure that enough trained and qualified energy auditors, electricians, construction workers, engineers and installers are available to meet the accelerated deployment pathways for the key clean technologies needed to reduce the EU's dependence on Russian gas, especially in the areas of wind, solar, building insulation, heat pumps and district heating.
- Establish an annual EU "skills summit" to make sure that all Member States address the number and level of skilled workers. The summit should serve as an event for stock-taking and best practices exchange, focused on both training and making maximise use of existing capacities.
- Use the EU Citizen Energy Corp as an opportunity to introduce citizens of all ages, and especially all genders, to professions relevant for the decarbonisation of buildings, power and industry and for which there are labor shortages.
- Support training programs for heating appliance installers to ensure that the remaining gas boilers that are installed between now and 2025 are properly sized and fitted to ensure maximum efficiency.

- Explore ways to improve installation capacities through the optimisation of processes, including the synergistic effects between the installations of PV, heat pumps, batteries and charging points.
- Enhance national quality control measures to ensure that the fast deployment of building efficiency measures, heat pumps and rooftop solar does not come at the expense of lower energy performance and the failure to deliver promised outcomes.

Action Area 3. Stop installing new gas boilers

- Revise the proposed Ecodesign and Energy Labelling rules for space and water heating appliances to remove all heating appliances with an efficiency below 110% as early as 2024, effectively banning non-hybrid oil and fossil gas boilers from the EU single market.
- Immediately act to remove all remaining subsidies for boilers operating on fossil gas and introduce bonus-malus schemes that tax the installation of non-hybrid oil and gas boilers and use the revenues to support the uptake of clean heating technologies.
- Immediately prohibit the installation of new oil and gas boilers in all new buildings.

Action Area 4. Rapidly scale up the production and installation of heat pumps

- Introduce a CO₂ standard for heating appliance manufacturers modelled on CO₂ standards for cars (max. CO₂ emission per kWh of thermal heat provided) for which heat pumps would be given a zero rating. This policy would help to ensure that boiler manufacturers operating on the EU market sell a minimum share of heat pumps in line with this trajectory and send a clear political signal to industry leaders to scale their associated supply chains to the needed levels.
- Introduce an EU Heat Pump Accelerator, similar to the EU Clean Hydrogen Alliance, that coordi-

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nates strategic policy actions for scaling heat pump manufacturing and installation and serves as a one-stop-shop for information sharing.

- Increase financial support for the installation of heat pumps in line with the accelerated pace of installation via upfront grants, subsidised loans, a temporary elimination of the VAT on heat pumps and other renewable heating technologies for the next 5 years and an accelerated depreciation of heat pump investment costs for businesses.
- Take immediate measures to balance electricity and gas prices in favour of heat pumps and ensure that heat pumps are, on average, cheaper to operate than fossil gas boilers in terms of operating costs (by, say, reducing electricity taxes and funding support programs for renewables).

Action Area 5. Rapidly scale up building renovation

- Quickly establish a 'Renewables Ready' building standard for existing buildings that defines the measures and operational performance needed to enable the efficient and flexible operation of renewable heating systems such as heat pumps and low-temperature district heating.
- Quickly adopt minimum energy performance requirements for existing buildings and aim to renovate the lowest-performing 25% to the 'Renewables Ready' Standard by 2027 and all buildings by 2030.
- Commit to achieving an average annual renovation target of 3% over the next five years for all public-sector buildings (including healthcare, education and public housing) and develop building renovation action plans in line with this goal.
- Introduce a comprehensive roll-out of energy audits and building renovation passports accompanied by a campaign to train emergency experts (i.e.: architectural/construction engineering students), who could issue building renovation passports under the supervision and guidance of professional experts.

- Require all building owners with a gas or oil boiler older than 15 years to undergo a free energy audit and develop a building renovation roadmap within the next five years.
- Launch a new initiative to support the rapid creation of industrial-scale building renovation programmes by providing special financial assistance to the first 100,000 housing units renovated before 2027.
- Ensure that all building owners required to carry out renovations for meeting new building standards are eligible for state aid, while linking the level of eligible costs to the depth of renovation, choice of heating technology, early action and use of low-GHG-intensive building materials.

Action Area 6. Connect more homes to district heat networks and make them greener and more efficient

- Municipalities with a population higher than 20,000 should immediately start developing local heating and cooling plans. These plans are needed to identify local renewable energy and waste-heat potentials, establish zone areas for future heat supply via district heating and prepare the orderly phase-out of fossil fuels in buildings by no later than 2040, including the decommissioning of existing gas grids.
- Provide dedicated funding to local governments to support the development of local heating and cooling plans (in the form of, say, per-capita support payments) and to regional governments to develop the capacity of regional energy agencies for heating and cooling plans.
- Provide a dedicated financial support programme to help district heating companies develop plans for achieving full decarbonisation (100% renewables and waste heat) by 2040 within strict sustainability constraints (e.g. biomass potential).
- Develop and strengthen existing financial support programs for the modernisation and growth of existing district heating grids, the development of new low-temperature district heating

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networks and the accelerated deployment of investments in renewables (e.g. large heat pumps, geothermal, solar thermal), thermal heat storage and industrial waste heat.

- Accelerate the deployment of geothermal in power and district heating by streamlining regulatory and permitting frameworks and developing a European financial risk mitigation framework that helps to de-risk the deployment of large-scale geothermal projects for local authorities and private investors.
- Take into account all major sources of waste heat (e.g. data centres, metro stations, supermarkets and waste-water treatment plants) when developing local heating and cooling plans and require them to feed into district heating systems wherever cost-efficient.

Priorities for the industry sector

Action Area 7. Don't regulate industrial gas and energy prices; let the demand signals work.

- Allow higher gas prices to work through the industrial sector value chain in order to incentivise efficient fuel switching, virgin material reductions, substitutions and demand decreases. For sites using large amounts of energy, for consumers of products rich in fossil gas as a feedstock (such as agricultural usages of fertiliser), and for reducing excess plastic use in packaging, etc, price signals are the most effective way to incentivise the rapid curtailment and switching to more circular and more materially efficient solutions.
- When caps must be placed on gas, power or fertiliser prices, ensure they are sufficiently high so as to send industry strong price signals before they kick in.
- Ensure that all medium- and high-temperature heat consumers with electric heating systems have real-time price incentives and variable price contracts for responding to demand. Real-time incentives for demand response on the

wholesale power market can encourage medium- and high-temperature industrial heat consumers to install e-boilers and other electric systems alongside existing fossil-fuel-based units and to avoid drawing on power from the grid at times when gas (or coal) is used at the margins.

Action Area 8. Take emergency measures to avoid irreversible reductions in EU industrial and agricultural production

- Grant liquidity support and state aid for energy-intensive industries to temporarily curtail (but not shut down) production as a temporary measure during the next 12–24 months to assure provisions for the coming winter. Similar aid should be granted to vulnerable agricultural producers.
- Accept a temporary increase in imports over the next 1–2 years to limit inflation and shortages in critical materials; and assess potential structural measures to take in the event that energy prices remain persistently high so as to limit the financial burden on the state while protecting the domestic production of critical raw materials.

Action Area 9. Accelerate the uptake of renewable solutions for low- and medium-temperature industrial heat

- Require a full phase-out of fossil gas for all industrial applications using heat levels below 200C within 3 years (i.e. by 2025).
- Require the implementation of either full-electric or hybrid-electric and fossil-fuel systems for all industrial heating applications below 500C by 2027.
- Provide accelerated depreciation, zero-interest loans and capex aid to accelerate payback periods on investments in direct electrification, renewables, hydrogen and enhanced recycling technologies and ensure that price and regulatory signals translate into speedy investment.

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- Streamline permitting for new sites, site extensions and fossil-free energy infrastructure linked to industries aiming to reduce fossil gas consumption.

Action Area 10. Regulate industry to ensure that all cost-effective energy savings measures are taken

- Immediately ramp up all existing national energy efficiency savings targets to raise the value of across-the-economy energy savings.
- Require all energy-intensive companies to undergo (renewed) energy audits and implement all energy savings measures with a payback period of 10 years or less.

Action Area 11. Rapidly scale material efficiency and enhanced recycling of energy-intensive materials

- Require all plastic, steel and aluminium sellers to increase the minimum content of recycled materials in their products by 3% per annum by 2025.
- Immediately implement deposit refund schemes for plastic and aluminium recycling.
- Require all recyclers of energy-intensive materials to adopt best-available techniques for ex-post sorting, separating impurities, and recycling scrap.
- Immediately introduce a ban on the export of scrap and plastic in energy-intensive sectors outside of the EU/EFTA region.

Priorities for the power sector

Action Area 12. Pull all stops for renewables deployment and manufacturing in Europe

- Encourage Member States to re-orient planned spending in RRF, CAP, cohesion spending, etc. towards wind and solar and away from bioener-

gy. Push Member States to pay into the EU Renewables Financing Mechanism, even when it comes to unused RRF.

- Identify minimum staffing levels and ensure sufficient capacity in public authorities responsible for RES planning and permitting to manage the anticipated increase in additional permits sought. Fast-forward permitting for repowering.
- Make the scaling of domestic solar PV manufacturing a core focus of the EU's upcoming solar strategy. This should include a target of at least 20 GW of PV production by 2025, covering the entire value chain from polysilicon to modules.
- Establish industrial initiatives modelled on the EU Battery Alliance for solar PV manufacturing and floating offshore wind and for the launch of a green critical raw material strategy, including recycling for key inputs to renewables technologies.
- Establish a Renewables Investors Group following the successful example of the Energy Efficiency Financial Institutions Group (EEFIG), as well as a de-risking instrument for emerging renewables technologies under InvestEU.
- Enable and make use of financing from the EU's Common Agricultural Policy for deployment of agrivoltaics and green ammonia production. Establish a target of 5 GW of agrivoltaics in the EU by 2027 to be co-financed through CAP.
- Ensure that 'windfall profits' obtained in the energy market through the high prices set by expensive gas power plants are re-invested into scaling renewables deployment in accordance with the new Commission guidance on the matter.
- Make operational the legal principle to consider renewable energy projects and related infrastructure as in the overriding public interest to accelerate renewables permitting, whilst ensuring that public support and other environmental aspects do not suffer.
- Update EU public procurement guidelines for electricity contracting so as to support municipalities and companies in contracting green elec-

tricity from additional wind and solar projects without the need for guarantees of origin.

- Apply additionality principles for all EU and MS investments in hydrogen.

Action Area 13. Mandate solar rooftops, solar on built environments and maximise PV self-consumption

- Introduce solar rooftop obligations requiring all building owners in case of new construction and major rooftop renovations to either install solar PV or solar thermal by a set date, or enter the rooftop into a lease register that allows others to exploit the potential.
- Provide additional incentives (e.g. subsidised loans) to ensure that the rooftop area of each building is exploited to maximum extent, as well as sanctions (e.g. penalties once a certain number of offers are rejected) to ensure obligated parties do not circumvent the obligation. Consider PV deployment along transport corridors, including via CEF.
- Mandate manufacturers of PV inverters to provide a communication interface to heat pumps, batteries and EV chargers to maximise the consumption of PV energy on each respective building or lot.
- Review and adapt national laws to enable renters to install micro scale solar modules.

Action Area 14. Fully and ambitiously transpose existing electricity market rules to enhance power system flexibility

- Issue an ACER/Commission guidance for ENTSO-E on how to better reflect the now even higher value of demand response and flexibility and actually available capacity for cross-border trade in the European Resource Adequacy Assessment (ERAA) to correctly depict the state of play and outlook for security of supply.

- Carry out a comprehensive stocktaking and re-evaluation of capacity mechanisms approved so far and their performance and develop minimum criteria to be respected to allow for proper demand-side, storage and renewables participation in capacity mechanisms.
- Ensure an ambitious transposition of all wholesale electricity market flexibility provisions to ensure improved integration of renewables and minimized need for fossil gas based balancing energy, e.g. reduced cross-border intraday gate closure times, integrating the liquidity from the replacement reserves market in intraday, remove exceptions from procuring all balancing capacity volumes in the day-ahead timeframe and 15-minute products on the day-ahead market.
- Require hourly cross-border intraday auctions to correctly depict the value of cross-border flows and optimise the utilisation of available cross-border transmission capacity
- Fully transpose the demand-side flexibility provisions of the Electricity Directive, establish minimum flexibility requirements (e.g. bi-directional charging for EVs) and consider common standards for communication with flexible assets (e.g. EVs, aggregated heat pumps). Consider mandatory installation of smart electricity meters and smart thermostats for all consumers.
- Establish rules in the forthcoming renewable hydrogen delegated act to ensure that electrolyzers are operated in view of power system flexibility needs (rather than exacerbating bottlenecks) that will increase with the faster than anticipated ramping of renewable power production.

Action Area 15. Strike a smart balance between direct electrification and green hydrogen production

- Immediately review the EU and national hydrogen strategies, EU spending programmes, the Fit-for-55 package and the EU's gas and hydrogen package to remove all incentives for inefficient

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applications of hydrogen outside of no-regret sectors.

- Adapt state aid rules to prohibit support for hydrogen in inefficient applications, including the provision of low-temperature industrial heat and fossil-based hydrogen production.
- Re-establish the priority on green hydrogen from the 2021 Hydrogen Strategy and introduce it the Gas Package, the Energy Taxation Directive and the application of state aid rules. Establish a phase-out date for grey hydrogen by 2030.
- Ensure that all Member States integrate investments in flexibility, batteries, industrial and residential heat pumps and district heating into cohesion spending and RRF.
- Complement the prioritisation of hydrogen applications in the Renewables Directive with a sunset clause for gas in low temperature uses below 200 C and a sunset clause for grey hydrogen by 2030.
- Establish a planning process for hydrogen infrastructure, steered by the future users and producers of hydrogen, that integrates hydrogen and electricity planning as well as local heat plans. Ensure that national, regional and local heating and cooling plans take into account the limited sustainable potentials of hydrogen and biomass.
- Implement renewable additionality rules for publicly funded hydrogen investment, ensuring that 3-4 MW of RES-E are developed for each MW of green hydrogen.

6 An investment framework for RePowerEU based on European solidarity

The necessary investments in Europe's clean-energy sovereignty must occur at a time of increased military spending, aid to Ukrainian refugees, and rising costs of energy and food hitting poor households.

The mobilisation of the required investment in renewable energy, infrastructure and energy efficiency will not happen without a robust policy framework that combines regulation with public grants and other kinds of public financial support. Moreover, a just transition with public ownership of key assets will require a high degree of public financing.

Table 2 shows our assessment of the public share of the investment needs for the identified RePowerEU priorities. The figures only cover grants and not repayable instruments or guarantees. It is clear that, in spite of the presence of the Next Generation EU (incl. RRF) complementing the EU budget, the lion's share of public financing will need to come from national budgets.

The RePowerEU plan increases ambition for all Member States, while not expanding the resources available for EU support. The starting point is a situation in which investments in national Recovery and Resilience Plans (RRPs) were already insufficient to significantly advance the EU economy towards the 2030 climate targets.¹⁴

Public finances of many Member States are constrained by high public debt levels, that increased significantly during the Covid-19 crisis. Before the

Table 2: Public funding needs of the 15 priority actions

bn EUR (2022–2027)	Public funding needs (total)	Public funding needs (per year)	National budgets	EU funds (EU budget, RRF, other)
Power sector and H2	103	11	31	72
District heating	210	35	176	34
Building and heating renovations	337	56	253	84
Industry	30	5	4	26
TOT	680	113 (0.81% EU GDP)	464	216

Agora Energiewende (2022)

Note: includes only RRF funding in the 22 plans approved by the Council. Percentage of 2019 GDP

14 See our analysis published on Social Europe, accessible at <https://socialeurope.eu/building-back-greener>.

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war, the debate on EU fiscal reform had highlighted the need for more EU solidarity to support pre-defined green spending in fiscally fragile countries.

Green golden rules leave the burden of financing the necessary public spending on national governments, not helping when a country has little fiscal space. The public spending gap from the 2030 EU climate targets is at least 1% GDP in the EU¹⁵ and the RePowerEU plan increases the bill by frontloading green investment. At the same time, high energy prices reduce the space for carbon pricing, the main source of fresh revenues for governments.

Leaving Member States to their own devices when financing bolder EU-wide ambitions increases the likelihood that they will fall to achieve common targets and increases the risk of widening sovereign spreads in the euro area and another severe public debt crisis. Moreover, the common benefits of the RePowerEU plan, both environmental and geopolitical, are another reason for more European solidarity, including through common borrowing.

It thus critical that RePowerEU be complemented by an investment framework that can stand up to these challenges. Such a framework must:

- confirm political targets for clean energy investments under RePowerEU;
- commit governments to re-assess national spending plans under the RRF and the EU budget (incl. the Common Agricultural Policy) to maximise the use of existing funds for investing in clean energy sovereignty;
- establish a European Energy Sovereignty Fund equipped with at least 100 billion euros to support investment needs not covered by existing

EU funds, especially in fiscally fragile Member States;

- update investment needs estimates by the European Commission to reflect high commodity prices, the sanctions on Russia and the concrete clean energy investment targets of RePowerEU;
- commit governments to smartly combine price signals with measures to protect low-income households and energy-intensive industries;
- update Commission guidance on energy markets interventions, on protecting vulnerable consumers and industry and on state aid;
- launch new Important Projects of Common European Interest (for heat pumps, serial renovation, district heating, etc.); and
- establish a dedicated Energy Sovereignty Task Force in the European Commission, modelled on the EU Recovery Task Force, to help governments leverage all available EU-level tools for delivering the RePowerEU plan.

15 See Agora Energiewende, 'How to align the EU fiscal framework with the Green Deal', 2022.

Table 3: Employment in the gas, clean energy and heating equipment sectors

Sector	EU27 employment, thousands (*)
Fossil gas (2018)	
Extraction of gas	15
Manufacture of gas	12
Distribution and trade of gas and gaseous fuels	104
Electricity generation ¹⁷	28
Total natural gas	159
Clean energy (2019)	
Energy efficiency	1,104
Renewables	617
Renewables (direct and indirect employment, 2020) ¹⁸	1300
Of which: solar and wind power	453
Heating equipment manufacturing (2018)	
Manufacture of central heating radiators and boilers	56
Heat pumps (direct and indirect employment, 2020) ¹⁹	319

Eurostat, IRENA, EurObserv'ER and Agora Energiewende (2022)
 (*) Direct employment otherwise stated.

7 Effects of RePowerEU on trade, employment and economic activity

Regaining energy sovereignty in Europe in the next five years requires a full-scale mobilisation of efforts in the industrial, buildings and power sectors to cut energy waste and rapidly scale investments in clean-energy technologies – heat pumps and renewables, first and foremost.

The effort will be huge, but its economic benefits stand to be real, large and enduring. And they are preferable to paying many billions of euros every year to autocratic regimes to purchase and burn fossil fuels.

Effects on trade

A 32% reduction of fossil gas consumption by 2027 through energy efficiency and renewable energy technologies will have a sizable effect on the EU trade balance. Thanks to the reduced consumption, savings worth 130–320 billion euros are likely to accrue in the 2022–2027 period – the same amount could finance the full renovation of 3 to 8 million homes.

Europe depends on international value chains for solar photovoltaics and storage technologies, but the value of such imports would be far lower than what the EU currently spends on gas imports. From 2019 to 2021, the import content of solar PV capacity additions was 0.44 billion euros per GW.¹⁶ In 2021, 25.9 GW of new solar PV capacity were added to the grid; between January and November, imports of components and panels totaled 10 billion euros. The import content of wind turbines is significantly lower. In fact, the EU has a trade surplus in that market.

¹⁶ This calculation is based on data from Solar Power Europe and Eurostat.

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Overall, the shift from fossil gas to renewable energy will benefit EU trade and its strategic position. While the reliance on foreign production for essential metals and intermediate goods for clean-energy capital expenditures still poses security of supply risks, the EU economy will be less dependent on foreign inputs for normal business operations and residential heating.

Effects on employment and economic activity

The gas industry directly employs 159,000 people across the EU, most of them in the areas of distribution and trade. The renewable energy sector already today employs almost four times as many people (617 thousand), with 1.3 million jobs supported directly and indirectly in the EU. Activities related to the conservation of energy, such as building renovations, directly employed more than 1 million people in 2019. This figure has likely increased as building renovations over the past two years have scaled up.

Investing in renewable energy and energy efficiency has the potential of boosting employment in Europe.²⁰ We estimate that adding 418 GW of solar and wind power can create 418 thousand new jobs (FTE) in the construction of new plants and 46 thousand new jobs in operation and maintenance by

2027. Investing 350 billion euros in the renovation of building envelopes over the 2022–2027 period can support 1 million jobs per year across the EU.²¹

Moreover, thousands of jobs can be created with the investment in power grids, district heating and the replacement of millions of fossil fuel boilers with heat pumps. Job losses in the gas industry will be concentrated in the area of distribution and trade, as in our modelling the installed capacity of gas-fired power plants stays largely unchanged throughout this decade. These workers could find new employment in the expanding areas of the buildings and energy industry, for instance among the rapidly increasing number of district heating technicians and heat pump installers or in activities related to hydrogen and biogas.

Phasing down gas consumption across sectors will have the benefit of reducing the exposure of households and firms to fluctuations in international fuel prices, reducing the risk of disruptive energy price shocks. Bijnens et al. (2021) find a negative impact of electricity and gas prices on employment in European manufacturing. Their results indicate that a power price increase of 20%, well below what Europe has experienced during the recent gas crisis²² puts at risk around 3% of the employment in key manufacturing

17 This figure was estimated using employment factors for O&M from Malik et al. (2021) and EU27 installed capacity for gas power in 2019 from Eurostat.

18 See IRENA (2021): Renewable Energy and Jobs: Annual Review..

19 See EurObserv'ER.

20 See for instance Fragkos and Paroussos (2018): Employment creation in EU related to renewables expansion; McKinsey (2020): Net Zero Europe; Cambridge Economics (2022): Modelling the socioeconomic impacts of zero carbon housing in Europe.

21 This estimate is based on results from the analysis by BPIE, "Building renovation: a kick-starter for the EU recovery", 2020.

22 The gas price increase in 2021 was the main determinant of the steep rise in power prices in Europe. According to the European Commission's communication "Tackling rising energy prices: a toolbox for action and support", published in October 2021, "the effect of the gas price increase on the electricity price is nine times bigger than the effect of the carbon price increase", which occurred during the same period.

sectors.²³ Other jobs are lost with the direct effect of higher gas prices on industrial production. Investing in renewables and energy efficiency is more effective in addressing this concern than switching from Russian gas to LNG from other countries.

8 Conclusions

Russia's war against Ukraine has brutally exposed Europe's high dependence on fossil-fuel imports. And it is absolutely critical that we not simply replace our dependency on fossil fuels from Russia with dependency on fossil fuels from elsewhere.

Efforts to regain Europe's energy independence must prioritise the reduction of fossil gas consumption as fast and as much as possible. This means cutting energy waste and substituting fossil gas mostly through direct electrification. If Europe is to regain its energy sovereignty, the efficiency and electrification investments needed to reach Europe's 2030 climate targets must be accelerated.

This report proposes fifteen priority actions that should be included in the RePowerEU plan. When combined, these actions would eliminate 1200 TWh of fossil gas consumption by 2027, which is 80% of the fossil gas currently imported from Russia.

RePowerEU should also include dedicated measures to help Ukraine rebuild its destroyed energy infrastructure after the war.

RePowerEU should be embedded in a robust policy framework to oversee and steer the implementation of the actions. This framework would help ensure that EU funds are used to facilitate the necessary investments in a spirit of solidarity.

RePowerEU is a tool to maintain and deepen the sense of togetherness that Russia's invasion of the Ukraine has created in the European Union. It will help to make sure that, if all goes well, in five years' time, EU citizens and the Ukrainian people will be in a better place than they are today.

23 We calculate that this corresponds to ca. 141 thousand jobs in the sectors and countries analysed in the paper. They are the paper, chemical, machinery, metals, computer and pharma industries in Belgium, Germany, France, Italy and the Netherlands (the UK is excluded here).

9 Annex: Potential fossil gas savings in buildings, industry and power

Table 4: Potential savings of fossil gas in buildings, industry and power

Sector	Minimum potential (TWh)
Buildings	480
Improve energy efficiency of existing gas boilers	72
Renovate buildings	72
Replace gas boilers with heat pumps	140
Replace gas boilers with district heating	125
Replace gas boilers with biomass	47
Switch fuels for existing boilers	24
Industry	223
Install heat pumps for low temperature heat (<150°C)	170
Install hybrid electricity/fuel systems for medium temperature heat (150-500°C)	30
Switch fuels for high temperature heat processes (>500°C)	3
Reduce and replace natural gas as feedstock in fertilisers and plastics	20
Power	500
Increase wind onshore deployment	160
Increase wind offshore deployment	212
Increase solar roof deployment	64
Increase solar ground deployment	63

Agora Energiewende (2022)

Note: These potentials were estimated based on modelling by Artelys, Wuppertal Institute, and TEP Energy for Agora Energiewende that takes 2018 as base year. Nevertheless our estimates relate to gas consumption in 2020 (Eurostat Code [NRG_CB_GAS - IC_OBS]), as overall gas consumption in 2018 and in 2020 differed by less than 1%. From a modelling perspective some reduction potential will have been captured between 2018 and 2020.



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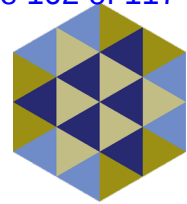
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Attachment Y



E3G

BRIEFING

EU CAN STOP RUSSIAN GAS IMPORTS BY 2025

ACCELERATING CLEAN ENERGY AVOIDS FOSSIL LOCK-IN



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ACCELERATING CLEAN ENERGY AVOIDS FOSSIL LOCK-IN

As organisations we stand with the people of Ukraine in their suffering and defence against the senseless aggression by the Russian government. Its decision to invade Ukraine puts into sharp contrast the deep entanglement between energy, security and geopolitics. Now more than ever the European Union needs unity and resolve in its response and a focus on resilience in the face of interlinking crises.

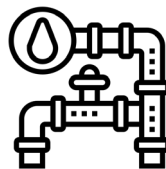
This briefing identifies the indispensable role clean energy solutions play in rapidly ending the EU's reliance on fossil gas imports from Russia.¹

KEY FINDINGS:



CLEAN ENERGY AND ENERGY EFFICIENCY CAN REPLACE TWO-THIRDS OF RUSSIAN GAS IMPORTS BY 2025.

Russian gas imports can be cut by 66% by delivering the EU's Fit for 55 package and accelerating the deployment of renewable electricity, energy efficiency and electrification. This is equivalent to a total reduction of 101 billion cubic meters (bcm). An urgent uplift in policy is now required to achieve the necessary level of implementation.



NEW GAS IMPORT INFRASTRUCTURE IS NOT REQUIRED.

Security of supply and reduction of Russian gas dependence does not require the construction of new EU gas import infrastructure such as LNG terminals. Alternatively sourcing 51 bcm of gas imports via existing assets is sufficient.

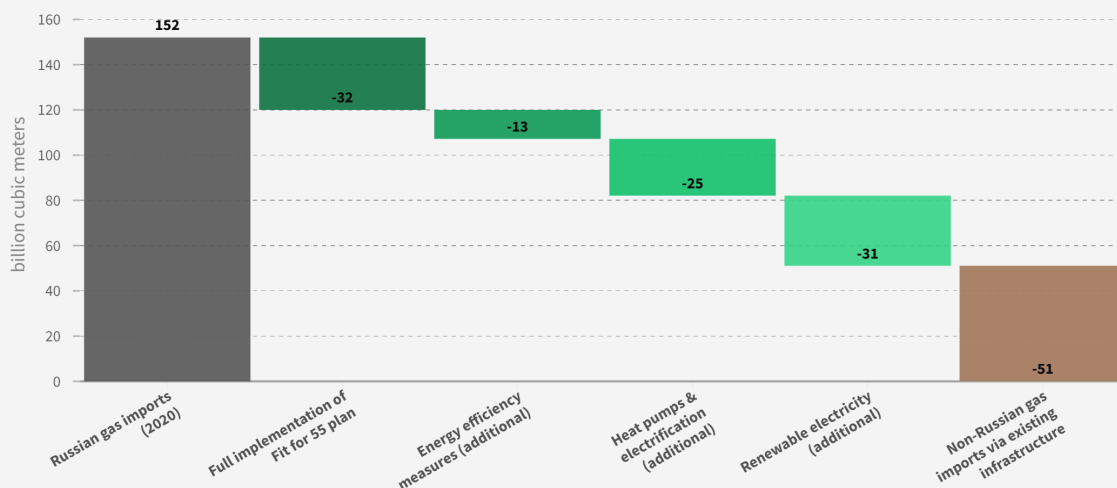


COAL POWER DOES NOT NEED TO BE EXTENDED.

The above measures would enable the EU to achieve the necessary decrease in fossil gas demand without slowing the decline of coal-fired electricity generation.

EU can stop Russian gas imports by 2025

Russian gas imports cut by 2025 through the implementation of Fit for 55 plus additional clean energy solutions



Sources: Analysis by Bellona, E3G, Ember and Regulatory Assistance Project (RAP) • EU Commission model-based projections supporting the Fit for 55 policy initiatives (MIX scenario)

KEY RECOMMENDATIONS



01 // POLICY

Make investments in energy efficiency an energy security priority and increase the ambition of and fast track key renewable energy and efficiency policy in the EU “Fit for 55” package.² Identify latent reduction potential that can be fast tracked in line with climate targets, in particular in industrial end use of gas, inefficiencies in gas use (transformation losses, methane leakage), and through electrification of end-uses.



02 // SUPPORT

Support the roll out of renewables and electrification with investment programmes, administrative streamlining and a better market for demand side flexibility as well as long-term contracts. Clarify financial resources available to clean energy solutions under REPowerEU. Ensure that recovery funding allocated for clean energy is used to that effect.



03 // CAPACITY

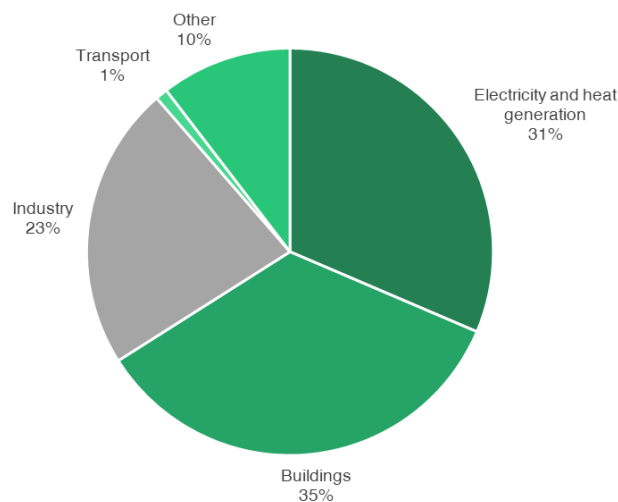
Put in place capacity to monitor and respond to low carbon supply chain risks and scale skilled workforce. Put in place European Commission capacity for a whole economy approach to driving and monitoring progress. Ensure equity in the energy response.

Counterproductive policies should be identified and tackled. Incentives that currently deepen or perpetuate gas consumption need to be replaced with investment support for clean heating. It is of paramount importance to avoid infrastructure or contractual gas lock-in, as the “substitution” effect is expected to decline sharply post 2025.

001. // SITUATION

EU gas imports totalled 400 billion cubic meters (bcm) in 2020,³ of which 152 bcm came from Russia (38%).⁴ Most of this gas is supplied via pipeline, although Russia has expanded its liquified natural gas (LNG) export business over the last few years. EU consumption of gas for energy use is dominated by buildings (35%) and electricity and heat generation (31%), with most of the remainder used for industry (23%).⁵

2020 GAS CONSUMPTION BY SECTOR (EUROSTAT)



In 2020, just under two-thirds of gas consumption was available for final end use, the rest was required for transformation and energy sector input. The relative share of gas available for final use has declined significantly over the last seven years, from 71% in 2014 to 64% in 2020, pointing at an overall efficiency loss in the EU gas sector.⁶ Final EU gas demand is expected to decrease by 32%-37% by 2030 as a result of “Fit For 55” climate targets.⁷

EU fossil gas imports totalled 400 bcm in 2020,⁸ out of which 152 bcm came from Russia (38%).⁹ Most of this gas is supplied via pipeline, although Russia has expanded its liquified natural gas (LNG) export business over the last few years. EU final consumption of gas for energy use is dominated by households (41% - cooking, heating) and industry (38%), with most of the remainder used for power generation (18%).¹⁰

The current crisis has multiple origins. Already in summer 2021, gas prices in Europe were surging due to low reserves after the winter of 2020-2021 and fast economic recovery after the COVID downturn in 2020. The skyrocketing gas prices also drove up electricity prices. To a lesser extent, increased CO2 prices and unusually low renewables output also played a role.¹¹ This comes amid a tight LNG market, in which 70% of LNG supply is tied up by long-term contracts.¹² Many in Europe have for years looked at the degree of

dependence on gas from Russia as an over-reliance, strictly from the point of view that single point risks on any energy system are best avoided if possible. The Russian invasion of Ukraine and the role of fossil fuel exports in funding the Russian political elite and its aggressions, have converted this into a strong imperative to cut dependence on Russian gas.

Compared to previous threats to EU fossil gas supply (2009, 2014), **the EU has a much broader range of response measures available. Clean solutions are now mature and have become mass markets.** Renewable energy costs have plummeted and the heat pump markets reached annual sales of about 1.8 million installations,¹³ which is 25% of the EU heating market. This momentum comes just as substantial financial resources – a response to COVID – are being injected into the economy via the EU’s Recovery and Resilience Facility (RRF). This has created an opportunity to direct those funds into the solutions that have the most positive impact for the recovery and that tackle the EU’s gas dependence and price exposure. It also comes with challenges – notably labour shortages and supply chain constraints already visible during COVID but in part exacerbated by the complete isolation of Russia from global markets and the devastation the war causes in Ukraine.

002. // SCOPE OF THE ANALYSIS

The scope of this briefing is to analyse the accelerated reduction of fossil gas dependence, on a medium-term time horizon: one to four years. This briefing is intended as input for ongoing policy discussions in the European Council, Parliament and Commission as well as for national level responses to the crisis. Therefore, we focus on the EU27.

Russia is an important supplier of oil, coal and minerals to Europe. Yet, fossil gas imports pose specific challenges due to the EU's high dependence on pipeline gas imports and the tight global markets

when it comes to flexible supply.¹⁵ Gas prices directly impact EU citizens given the high share of gas in home heating, at a time when energy poverty is already significant. We identify a clean energy policy portfolio to accelerate gas demand reductions by 2025. As recent analyses underexplored the potential contribution of demand side efficiency and electrification, this analysis includes demand side actions such as energy efficiency investments, electrification of heating and demand side flexibility. On the electricity generation side, the focus is on scaled up and accelerated solar and wind.

SOME LIMITATIONS OF THIS ANALYSIS INCLUDE:



It focusses on final consumption for energy use only. Final consumption for non-energy use accounted for 4% of gas use in 2020 and accounts for 14% of all gas use in industry.¹⁴ Options to reduce reliance on gas exist, such as hydrogen as a feedstock or establishing more circular and material-efficient supply chains. They may however be slower to ramp up.



This is a stylised analysis looking at replacement potential. It makes some simplified assumptions around energy system interactions to conclude where replacement of gas takes place (explained in the annex). The assumptions are conservative but cannot replace a whole energy system model.

This analysis incorporates an approach focussed on clean energy solutions creating permanent gas savings. This provides additional insights compared to recent analyses by the European Commission,¹⁶ the International Energy Agency¹⁷ or Bruegel.¹⁸

003. // ASSUMPTIONS BEHIND THE ANALYSIS OF GAS IMPORT SAVINGS

The identified measures to accelerate clean energy deployment reflect existing “Fit for 55” plans and commitments but accelerate and enhance them to rise to the current challenge of rapidly reducing the EU’s fossil gas dependence. The assumptions have been checked with relevant industry bodies and take into account what can realistically be delivered in the short to medium term over and above “Fit for 55 ambitions”. We deliberately focus on clean solutions on both the supply and the demand side, as the latter have the largest potential to immediately reduce costs to consumers and increasingly insulate them from price volatility.

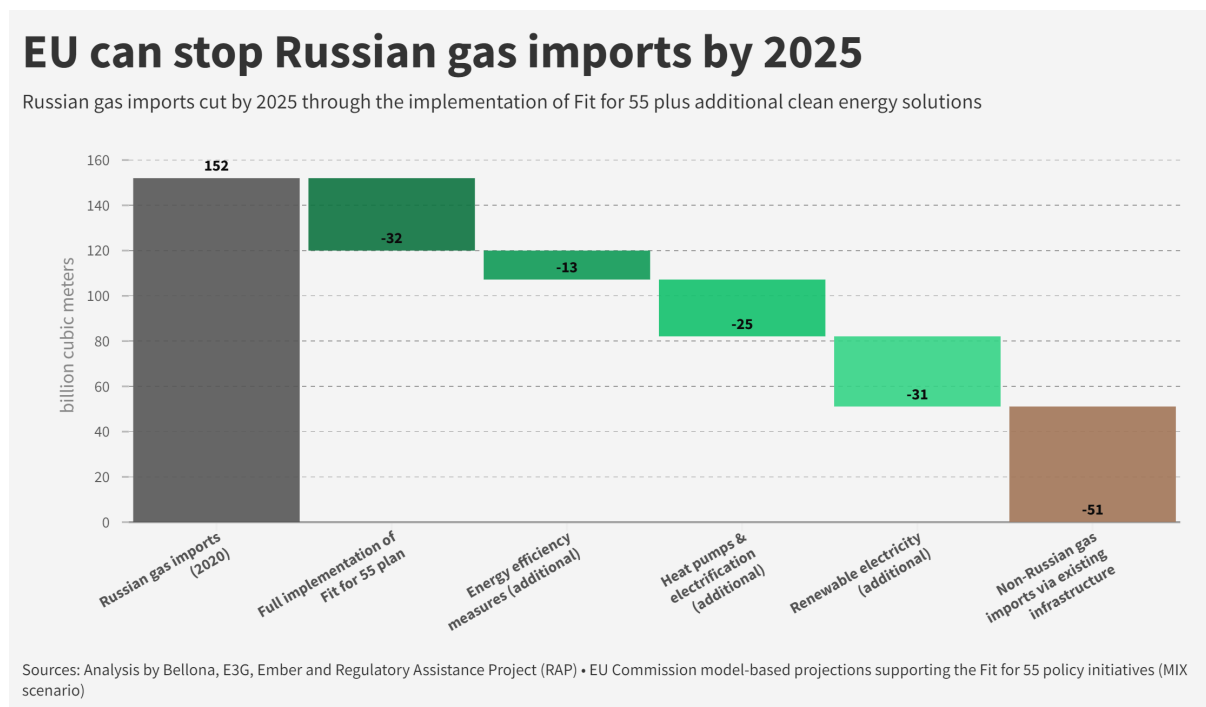
Over-reliance on fossil fuels, import dependence and international market volatility have contributed to the current geopolitical crisis. The effects of this are felt first and foremost by the most vulnerable in our societies. It is therefore of paramount importance to reduce our economies’ reliance on fossil fuels and avoid further lock-in, such as could be the result of rushed decisions to build new LNG-import terminals, speed up new gas transmission pipelines, or reconsider fossil fuel extraction in Europe or scaling it in partner countries.

THERE ARE SOME DIFFERENCES BETWEEN OUR AND PREVIOUS ANALYSES:

- ◇ Campaigns aiming for behavioural change such as **“turning down the heat”** can be important to deliver a short-term demand reduction, e.g., by next winter. But their effectiveness is expected to fade over time. We therefore do not include reductions from behaviour in the analysis for 2025.
- ◇ We **achieve the necessary decrease in fossil gas demand in 2025 without compromising the EU coal phase out or extending the lifetime of nuclear power plants**. The intention of the Belgian government¹⁹ to extend 2GW nuclear power for 10 years only impacts gas demand after 2025.
- ◇ The additional actions do not include the **scaling of hydrogen and biomass, which both play a central role in the European Commission scenarios and in the IEA 10-point-plan (biomass)**. While they have their place in decarbonisation, they both come with significant risks, and hydrogen cannot deliver impact in the short term. Biomass scale up may enter into conflict with food production at a time when food prices are already soaring. In the short to medium term, gas savings can be maximised if direct electrification is prioritised to accelerate gas phase out in power rather than using it for renewable hydrogen production.²⁰

See the technical methodology section for more details.

004. // FOSSIL GAS IMPORT SAVINGS



According to our analysis **there is sufficient potential via clean energy solutions alone to remove 66% of gas demand from Russia by 2025**. This requires increasing the ambition and fast tracking of “Fit for 55” targets as well as additional actions, detailed in the next section.

Net imports of fossil gas are projected to reduce by 32 bcm from 2020 levels by 2025 with the full implementation of the “Fit for 55” policy package (MIX scenario). **We find that this can be further decreased by 69 bcm through clean and efficiency solutions.**

Renewable energy sources, predominantly wind and solar, are critical to weaning the EU off Russian gas and fossil fuels. The current “Fit for 55” target for wind and solar capacity by 2025 is 533 GW (229 GW above 2020 levels). **We have identified that this can be increased by 158 GW to 691 GW by 2025. This equates to 31 bcm of reduced fossil gas demand, 20% of Russian imports.** Accelerated solar deployment is responsible for this substantial gain. Solar Power Europe has stated that permitting is key to enable the necessary huge uptick in solar installations. Our scenario also assumes wind capacity hits the target set out in the “Fit for 55” proposal, however deployment is currently lagging, and this must be addressed by the EU as a matter of urgency.

For comparison, the EU Commission’s REPowerEU plan only envisages an additional 80 GW of additional wind and solar capacity deployed by 2030 (solely to enable higher production of renewable hydrogen), half the amount we identify as deliverable by 2025 with the right policy framework. The direct use of these additions for electricity would, at this stage, be most effective in reducing gas use – with a switch to renewable hydrogen as and when direct electrification potentials are maxed out. A much stronger and more immediate focus on removing delivery obstacles is required, alongside ensuring that the “Fit For 55” renewable targets are met. We welcome the Commission’s initiative to provide guidance on speeding up renewables permitting due to be announced in May 2022, but more can and must be done at an EU and Member State level.

This analysis identifies significant potential for additional action on the demand side. Energy efficiency measures can deliver an additional 13 bcm by 2025 – with each unit of gas avoided directly translating into cost savings for consumers. Heat pumps in buildings can reduce gas demand by an additional 19 bcm. Ramping up the electrification of space heating and low- to medium- temperature heat processes can deliver an additional reduction of 6.5 bcm by 2025. **It is clear that these potentials are underleveraged in the REPowerEU plan and need more concrete measures to bring forward savings, alongside more ambition under “Fit for 55”.**

The “Fit for 55” MIX scenario already assumes a 39% (152 TWh) decrease in coal generation from 2020 to 2025. Unlike other recent analysis, **our accelerated clean solutions pathway achieves the necessary decrease in fossil gas demand without slowing the decline of coal power.** This brings both climate and energy security benefits, as the EU is a large importer of Russian coal.

Our analysis also identifies that security of supply and reduction of Russian gas dependence **do not require the construction of new EU gas import infrastructure such as LNG terminals.** The 51 bcm of alternatively sourced gas imports can be channelled via existing, underutilised assets.²³ It is also less than the 60 bcm stipulated in REPowerEU. In this context, it is important that actions to bring in alternative fossil gas supply anticipate the temporary nature of this step, as ramping up clean measures will fast erode gas demand.

Between the “Fit for 55” package, expected to deliver 100 bcm in gas savings by 2030²⁴, and our analysis demonstrating that a 69 bcm reduction can already be achieved by 2025, the “substitution effect” away from Russian gas to other imports sources will likely evaporate fast after 2025. This means there is no justification for the EU **to lock in high price fossil gas contracts beyond this time horizon and new infrastructure would be unlikely to come online before then.** If fossil fuel commitments extend beyond this, they risk burdening consumers with high-cost imports and simply replacing one fossil fuel dependency with another.

005.// BOLD GOVERNMENT ACTION IS NEEDED TO UNLOCK GAS SAVINGS

Over the last decade, the tools available to the EU to respond to high gas prices and supply risks have diversified significantly. Renewables, heat pumps and energy efficiency have the added benefit to also build a more resilient Union in light of other crises – climate change, economic growth and health.

The EU has done this before. Without the efficiency measures of the last two decades, the EU's energy demand would be approximately 1,000 TWh (87 million tonnes of oil equivalent) higher today, equivalent to about a quarter of pre-COVID gas demand.²⁵ We must apply the same rigour and foresight today, while taking advantage of the tailwinds from a much more mature suite of clean energy solutions.

This will not happen autonomously and requires bold government action. The current “Fit for 55” package will not be sufficient to realise the full energy security potential from clean energy solutions by 2025. The ambition of “Fit for 55” proposals for the Renewables and Energy Efficiency Directives needs to be increased.

TEN KEY MEASURES TO REALISE THE ADDITIONAL POTENTIAL IDENTIFIED IN OUR ANALYSIS

- 1. Increase ambition and fast track adoption of the “Fit for 55” package.** This is relevant in particular for the Renewables Directive, Energy Efficiency Directive, Emissions Trading System and the Energy Performance in Buildings Directive.
- 2. Clarify financial resources to support clean energy solutions.** Ensure that allocated funding under the Recovery and Resilience Facility is used to that effect. Establish a facility for early, front-loaded release of Multiannual Financial Framework funds where delivery of gas savings can be accelerated.
- 3. Make energy efficiency an energy security priority and scale action.** Energy efficiency has the largest potential to reduce cost impacts on consumers.²⁶ Consider opening existing funding resources such as the Connecting Europe Facility for scaling national energy efficiency programmes.
- 4. Remove any incentives that currently deepen or perpetuate gas consumption.** It is a tragedy if government programs promote families to invest in ways that cement reliance on Russian gas on top of creating a stranded asset in their home which they may come to regret long before the end of its useful life. Examples include financial support for gas heating systems and special tax regimes or exemptions for industry. Replace them with investment support for clean heating, in particular for low- and middle-income families. Support innovative schemes such as on-bill financing, tax credits or heating appliance lease schemes.
- 5. Support the roll out of renewables and heat pumps.** Establish concrete investment programmes, reduce administrative burdens and accelerate support for critical enablers such as grid infrastructure, demand side flexibility and better use of transmission networks and storage. Integrated regional markets can buffer fluctuating renewable resources across larger regions.

6. **Make low carbon supply chains an energy security priority.** A skilled workforce and input materials to the low carbon supply chain are critical to delivering this vision. The EU can enhance and scale Member States' efforts and can establish a cooperative approach with the United States and other partners on scaling supply chains.
7. **Ensure equity in the energy response.** Governments must ensure the costs and benefits of the transition are shared fairly among consumers. Increased carbon revenues or windfall profit taxes can be earmarked for investments in renewables and efficiency, as well as bill support for vulnerable customers. Enabling access to energy services can unlock bill savings for low-income families. Regulators should address energy poverty by designing fair network tariffs and ensuring suppliers of last resort are properly financed.
8. **Put in place a European Commission task force.** This could drive and monitor a whole economy approach so that supply chain bottlenecks can be anticipated and efforts streamlined across different parts of the Commission.
9. **Conduct analysis to identify latent potential that can be fast tracked.** In line with climate targets, in particular, analysis should be identified for industrial end use of gas, or inefficiencies in gas use (transformation losses, methane leakage) to line up even higher gas savings post 2025. Examples include increased monitoring, reporting, and best practices to reduce methane leakage from production to distribution, including identification of pipelines that can be decommissioned or upgraded.
10. **Avoid gas infrastructure or contractual gas lock-in.** The "substitution" effect from Russian gas to other sources is expected to decline sharply after 2025, meaning that additional import or other gas infrastructure will face rapidly declining utilisation.

DETAILED CRITICAL ACTIONS

Descriptions	Cross-cutting	Efficiency and fuel switch - residential	Renewable energy	Efficiency and fuel switch - industry
PREREQUISITES	Make securing supply chains for low carbon materials and critical raw materials a security priority (e.g., steel, semi-conductors).	<p>End financial support for gas and hybrid heating systems.</p> <p>Scale up renovation advice with the Building Renovation Passport.</p> <p>Issue best practice guidance to Member States on potential savings from and mechanisms for promoting the rapid adoption of best-in-class energy efficient electrical appliances.</p>	Streamline and reduce administrative and regulatory barriers: Solar: solar PV roof mandate. Wind: accelerated auctions for new capacity (on-/offshore)	Conduct analysis of potential for faster gas phase out in EU energy-intensive industries.
CRITICAL ENABLERS	Enhance the targets in the "Fit for 55" RED and EED legislation and fast track adoption and implementation. Reissue gas package proposal to support managed phase down of gas use.	<p>Require Member State programmes supporting switch away from coal heating to exclude switch to gas.</p> <p>Ensure mandates reflect efficiency as security priority (product design, building codes).</p> <p>Deploy programme for quick building passports training and mobilise skills in army to deploy towards installation of heat pumps/renovation.</p> <p>Launch a dedicated Heat Pumps Accelerator or 'Sector Compact' to boost the market, skills and supply chains for heat pump manufacturing and deployment beyond business as usual.</p>	<p>Policies and regulations to support industrial customers to invest in additional renewables capacity, power purchasing agreements and on-site distributed generation.</p> <p>Auction for double sided contracts for difference, providing upside for governments in times of high energy prices.</p> <p>Support long-term contracts (Power Purchase Agreements) and better functioning forward markets.</p> <p>Set timeline for establishing integrated North Seas Grid infrastructure to enable effective trading of resources.</p>	<p>Allocate funding under the new Temporary Crisis Framework and the Innovation Fund to electrification of low-temperature heat processes.</p> <p>Invest in skills and workforce training to increase confidence in and enhance access to engineering expertise in electrification technologies.</p> <p>Expand national energy audit schemes and allocate funding to cost reducing energy efficiency measures for small- and medium-sized enterprises.</p>
SOCIAL PROTECTION & COHESION	<p>Secure sustainable financing of supplier of last resort.</p> <p>Invest in strengthening low carbon industrial base in Eastern Europe.</p>	Target financial support towards vulnerable consumers with gas connection or those planning to switch away from coal or oil heating.	<p>Unlock financial benefits of investing in distributed renewables via energy communities.</p> <p>Consider government backed long-term contracts (Power Purchase Agreements) for aggregated vulnerable consumers.</p>	
PROCESS	<ol style="list-style-type: none"> Clarify financing of frontloading and scaling clean measures, consider mobilising fiscal resources. Untapped potential lies within the Recovery and Resilience Facility, of which large shares have not been disbursed yet and where Member States did not max out potential for energy efficiency¹³. Increased Emissions Trading System auction revenues as well as net increased VAT revenues can be an important source of funding. Clarify process for identifying priority measures in line with EU objectives: <ul style="list-style-type: none"> Use transparent, science-based principles for identifying projects with Member States, ensure civil society participation is possible where long-term choices or commitments are made. Use contribution to wider resilience (longer price development, energy poverty, health, climate etc.) as key metric for prioritising funding and fast tracking. Prioritise options that do not create fossil lock-in effects. Establish an energy transition task force that works cross-Commission, linking together security, poverty, industrial strategy, external action and climate perspectives and focus on delivering time bound energy transition outcomes. 			

006. // MID- TO LONG-TERM CONSIDERATIONS THAT REQUIRE DECISIONS NOW

The analysis set out above is focused on medium-term measures that will decrease EU fossil gas consumption in the next one to four years. However, there are policy decisions that need to be taken in the short term that are critical to maintaining the momentum behind reducing EU dependence on fossil gas imports beyond 2025. These include how we accelerate the deployment and optimal use of renewable hydrogen, scale up fuel and feedstock shifts in EU industrial processes, secure access to critical materials for the clean economy expansion, and maximise the potential from circularity, material efficiency and recycling.

- ◇ **Renewable hydrogen for use as industrial feedstock and energy storage.** Hydrogen has a key, strategic role to play in providing replacements for gas as feedstock, in high temperature heat processes and in long-term storage. Given its resource intensive production in a world where energy is scarce, a key challenge for the EU will be to find ways of allocating this strategic energy vector where it can provide the most value to energy security and decarbonisation.
- ◇ Renewable hydrogen is a key decarbonisation option for industrial sectors, where it is used as a feedstock or can provide high-temperature heat (e.g., chemicals and steel production), and for seasonal energy storage. For those sectors, the EU should continue to support the deployment of renewable hydrogen, focused on industrial clusters. Given the inefficiency of the hydrogen production process, however, it should be **carefully targeted to the sectors where no other viable decarbonisation alternatives, such as direct electrification, material and energy efficiency, are available.**
- ◇ **The role of circularity, material efficiency and enhanced recycling.** New approaches to design and improved efficiency of materials and fertilizers hold strong potential for fossil fuel demand reduction. In addition, increasing the share of materials that are reused and recycled would reduce how much steel, plastic and fertilizers we need in the first instance, displacing demand for gas as a feedstock in these sectors. Accelerating phase out timelines, bringing forward relevant regulations and investing in recycling infrastructure and processes could lead to significant additional reductions in gas demand.
- ◇ **The extent of EU interdependence with trade partners.**²⁷ In the wake of pandemic-driven supply chain disruptions and a major geopolitical shock to energy markets, there has been a tendency towards rhetoric focused on autonomy, self-sufficiency and sovereignty. This would however, merely change the type of risks and exposure (from global supply chain risks to exposure to disruptive events in Europe) instead of enhancing resilience. Moreover, the reality of limited access to raw materials to fully decarbonise an industry-heavy economy means that the EU will likely continue to be dependent on international supply chains for the transition. Investing in better low carbon supply chain risk management structures would enhance resilience and maintain Europe's global influence built on trade relationships.

007. // TECHNICAL METHODOLOGY

01 // FIT FOR 55 AS BASELINE

We have used “Fit for 55” data and targets, including energy consumption, electricity generation and installed capacity for 2020 and 2025, to determine a baseline from which we have calculated our accelerated clean energy solution pathway.

02 // BUILDING EFFICIENCY

Buildings are the largest gas-using sector in the EU27. There is significant scope to reduce heating demand through better energy efficiency, with potential savings through building fabric efficiency alone of 37%.²⁸ The rapid deployment of loft insulation could deliver a 14% reduction in gas demand of gas-heated homes.²⁹

Total gas demand in buildings in 2020 was 1,315 TWh.³⁰ We assume 2.5% of this is used for cooking. The current renovation rate in Europe averages around 1% per year. Only 0.2% per year of the building stock undergoes a deep renovation.³¹ In our scenario, we assumed doubling the pace of renovations as foreseen in the “Fit for 55” MIX scenario, assuming an average renovation depth of 50% demand reduction.

03 // HEAT PUMPS

In 2021, almost 2 million heat pumps were installed in Europe.³⁰ For 2022, market growth of 25% to 2.5 million heat pumps is assumed, with figures to increase to 3.5 million in 2023 at 40% growth, 5.3 million in 2024 at 50% growth, and 7.4 million in 2025 at a 40% increase in unit sales. These figures were validated by the European Heat Pump Association as challenging but achievable with significant effort and policy support.

Assumed efficiency of new heat pumps in domestic buildings is a Seasonal Coefficient of Performance (SCoP) of 3.3 and 3 in non-domestic buildings. We assumed the same electricity mix as in 2020, with a share of 20.6% of electricity from gas³¹, and factored in line losses in transmission and distribution using an average from the top five gas using countries in the EU27³². The additional gas demand is factored into the savings calculated, assuming an average efficiency of gas plants of 50%.

Moving from gas heating systems to heat pumps and district heating powered by renewable electricity could reduce gas consumption by approximately 80%, if accounting for the current electricity mix and the additional gas-fired power generation required for electrification.³³

For the baseline we assumed the same level of deployment as modelled in the Impact Assessment of the “Fit for 55” proposals.

04 //
INDUSTRY
– ENERGY
EFFICIENCY, HEAT
PUMPS AND
ELECTRIFICATION

Total gas demand for energy use in industrial sectors ³⁴ was 858 TWh in 2020. ³⁵ Based on available literature, we assume that 25% of this total gas use goes to space heating, 4% to low-temperature heat processes (<100°C), 29% to medium-temperature heat processes (100°C - 500°C) and 42% to high-temperature heat processes (>500°C). ³⁶

While considerable energy efficiency improvements have been made in recent decades, significant potential remains. The energy savings potential of measures with a 5-year payback time amounts to 7%-13.5%, depending on the industrial sector in question, while implementing measures equal to the full technical potential would increase this to 17%-26%. ³⁷ In our scenario, we assume that those measures with a 5-year payback time are rolled out in full by 2025. As the saving potential for improvements in final energy demand does not differentiate between energy carriers, we assume that realised savings are proportional for each energy carrier. While the payback time is considerably shorter under current gas prices, we do not factor in energy savings beyond the 5-year payback time.

Electrification of processes that operate at low and medium temperatures, including cooling, space heating, steam generation and drying, could displace over half of EU industries' gas consumption. ³⁸ The technologies required, such as heat pumps, chillers and electric boilers are mature, cost-effective, especially at current gas prices, and readily available. They require, however, much faster deployment, investment in installation, the skills needed to operate them and, in some cases, redesigning industrial plants and processes to accommodate them.

In our scenario, we assume the same deployment rate for heat pumps for space heating in industry as for heat pumps in other use cases (domestic, commercial), see section above. We further assume a ramp-up of the electrification of low- and medium-temperature heat processes over time (annual growth rate of 50%), in total replacing 8.13% of gas use for these purposes by 2025.

05 //
RENEWABLE
POWER

There is significant potential to accelerate the deployment of wind and solar, above what current market forecasts expect to be delivered by 2025. This could meaningfully reduce EU gas demand by displacing the use of gas in the power sector. Solar Power Europe have indicated that current market trends are already set to deliver more solar capacity by 2030 than the European Commission is targeting in Fit for 55. This business-as-usual scenario would see 158 GW of new solar added by 2025 which, according to a recent analysis, could be increased to 320 GW if immediate measures are taken to streamline permitting and incentivise deployment. On the other hand, wind power additions are lagging behind the required pace for Fit for 55, expected to reach only 18 GW per year by 2025, compared to a required average this decade of 30 GW per year.

Geothermal: data of the European Geothermal Energy Council (EGEC) identifies a pipeline of around 1 GW of geothermal power plants by 2026. We did not include this potential as there are remaining hurdles to overcome in planning, permitting and operations processes. But it shows innovative technologies can materialise and contribute additional gas savings.

REFERENCES

- 1 This briefing has been authored by Sarah Brown (Ember), Domien Vangenechten, Johanna Lehne and
Lisa Fischer (E3G), Bram Claeys and Jan Rosenow (RAP) and Marta Lovisolo and Keith Whiriskey (Bellona).
- 2 In particular: the Renewable Energy Directive (RED), Energy Efficiency Directive (EED), Energy Perform-
ance of Buildings Directive (EPBD)
- 3 https://ec.europa.eu/eurostat/databrowser/view/nrg_ti_gas/default/table?lang=en
4 https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_GAS_custom_2273651/default/table?lang=en
5 Eurostat, NRG_CB_GAS, 2020 figures, accessed March 2022
- 6 This may be due to the increasing share of LNG imports over the same time period, which entails additio-
nal conversion losses. <https://www.eia.gov/todayinenergy/detail.php?id=51258>
7 <https://www.e3g.org/publications/phasing-down-gas-use-in-europe/>
8 https://ec.europa.eu/eurostat/databrowser/view/nrg_ti_gas/default/table?lang=en
9 https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_GAS_custom_2273651/default/table?lang=en
10 Eurostat, NRG_CB_GAS, 2020 figures, accessed March 2022
11 <https://www.raponline.org/knowledge-center/responses-to-fossil-gas-price-volatility/>
12 BNEF (March 2022), Europe will struggle to replace gas from Russia
13 https://www.linkedin.com/posts/thomas-nowak-ab735511_heatpumps-heatpump-epbd-activi-ty-6905831922413420544-rkvF?utm_source=linkedin_share&utm_medium=member_desktop_web
- 14 Over 70% of global LNG markets are tied up in long term contracts, meaning spot volumes are hard to
obtain and pricey.
- 15 Eurostat, NRG_CB_GAS, 2020 figures, accessed March 2022
16 https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511
17 <https://www.iea.org/reports/a-10-point-plan-to-reduce-the-european-unions-reliance-on-russian-natural-gas>
18 <https://www.bruegel.org/2022/02/preparing-for-the-first-winter-without-russian-gas/>
19 <https://www.premier.be/nl/verlenging-levensduur-kerncentrales-doel-4-en-tihange-3>
20 <https://bellona.org/news/fossil-fuels/gas/2022-03-using-repowereu-at-its-full-potential-the-role-of-hydro-gen-and-direct-electrification-in-displacing-fossil-gas-demand>
- 21 Rystad (2022), Rystad Energy Impact Report: Russia's Invasion of Ukraine: "Assuming all European im-
port terminals (excl. Iberia) run at 100%, 70 Bcm of additional gas supplies can be sent into the market" - some
limited regasification investment may be needed.
- 22 According to REPowerEU
- 23 Rystad (2022), Rystad Energy Impact Report: Russia's Invasion of Ukraine: "Assuming all European im-
port terminals (excl. Iberia) run at 100%, 70 Bcm of additional gas supplies can be sent into the market" - some
limited regasification investment may be needed.
- 24 According to REPowerEU
- 25 <https://www.odyssee-mure.eu/publications/efficiency-by-sector/households/household-eu.pdf>
- 26 Research by Cambridge Econometrics shows meeting the goal of 35 million renovated buildings by 2030
reduces gas consumption by about 43,000 GWh annually.
- 27 European Commission (2021), Strategic dependencies and capacities
- 28 Fraunhofer ISI, 2019. Study on Energy Savings Scenarios 2050, Karlsruhe: Fraunhofer ISI.
- 29 <https://www.bpie.eu/publication/solidarity-and-resilience-an-action-plan-to-save-energy-now/>
30 https://ec.europa.eu/eurostat/cache/infographs/energy_balances/enbal.html
31 https://www.bpie.eu/wp-content/uploads/2021/11/BPIE_Deep-Renovation-Briefing_Final.pdf
30 https://www.ehpa.org/fileadmin/red/03_Media/Publications/The_European_Heat_Pump_Outlook-2021_2M_heat_pumps_within_reach_01.pdf
31 <https://op.europa.eu/en/publication-detail/-/publication/41488d59-2032-11ec-bd8e-01aa75ed71a1/language-en>
32 <https://data.worldbank.org/indicator/EG.ELC.LOSS.ZS?locations=FR-ES-NL-DE-IT>
- 33 Based on RAP analysis of five largest gas-using countries in Europe (France, Germany, Italy, Netherlands,
Spain) using current electricity mix (<https://ourworldindata.org/energy-key-charts?country=>) and assuming a Sea-
sonal Coefficient of Performance of 3.0.
- 34 as defined by Eurostat
- 35 https://ec.europa.eu/eurostat/cache/infographs/energy_balances/enbal.html
36 https://heatroadmap.eu/wp-content/uploads/2019/03/Brochure_Heating-and-Cooling_web.pdf
37 https://www.seenergies.eu/wp-content/uploads/sites/25/2020/04/sEEnergies_WP3_D3.2_Beta_version_of_the_model_IndustryPLAN.pdf
38 <https://iopscience.iop.org/article/10.1088/1748-9326/abbd02>