A case for decreasing plastic production to reduce the European Union's dependence on fossil fuels and Russia

Executive Summary

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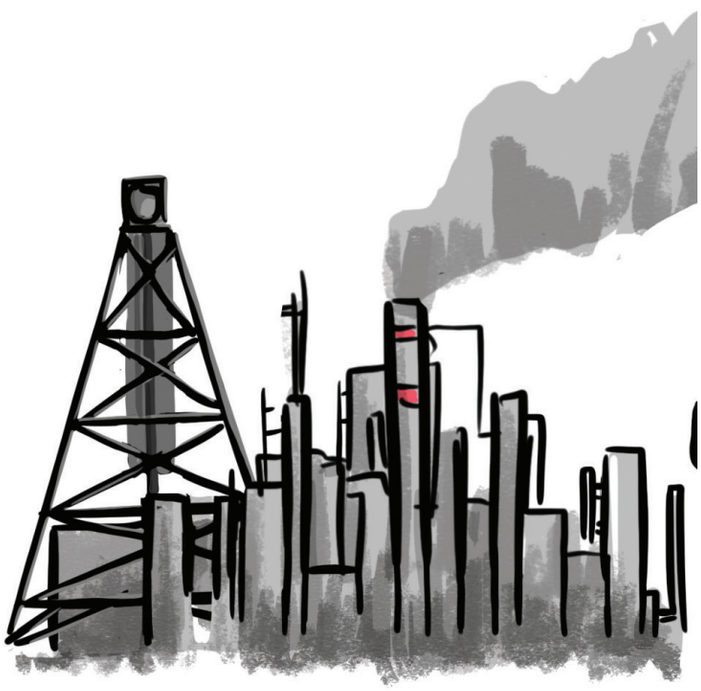

EXECUTIVE SUMMARY

Russia's invasion of Ukraine has revealed, in a brutal way, Europe's dependence on fossil fuels, particularly Russian oil and gas.

In August 2022, as the European Union (EU) faced the harsh reality of having reduced access to Russian fossil fuels, EU Member States committed to reducing gas consumption by at least 15% by 31 March 2023. While in Member States like Germany, the general public is being told that they should take cold showers and use less heat to reduce the overall fossil fuel consumption, the EU is concluding or exploring new trade deals to secure supply for the colder months of the year, in particular with the United States (US),[1] and African countries like Senegal.[2] Not only do EU governments demand far more action – and adaptation – from individual citizens than from industry sectors that consume the lion's share of fossil feedstock and energy, they also completely overlook the huge potential to reduce fossil fuel consumption by tackling unnecessary use.

The case of petrochemicals and plastics is emblematic of this problem. If the global petrochemical producers were a country, they would be the third-largest oil consumer in the world[3] and the fourth-largest gas consumer.[4] Today, the industry is the largest driver of the increased demand for oil and gas globally,[5] fuelling the climate crisis and its disastrous impacts on the most vulnerable populations and ecosystems. Yet, this extremely high fossil fuel-consuming industry remains a complete oversight in the EU public energy and climate debates, even as Europe confront a violent war within its borders as well as an unprecedented energy crisis and catastrophic climate impacts. This is despite clear and feasible pathways to reduce consumption of one of its main products: plastic.

Meanwhile, since the publication of its Plastics Strategy[6] in 2018 and the adoption of the groundbreaking Single-Use Plastics (SUP) Directive in 2019, the EU and several of its Member States have been a leading voice in the global fight against plastic pollution. This leadership was particularly evident during the United Nations Environment Assembly (UNEA) process that led to the March 2022 adoption of a historic resolution to advance negotiations on a binding global agreement to end plastic pollution along the full life cycle of plastic.[7] Yet, of all the measures that the EU has taken to tackle plastic pollution at its source, none address plastic production directly. Plastic production was responsible for nearly 9% and 8% of the EU's final consumption of fossil gas and oil in 2020, respectively. Taking ambitious reduction measures across all sectors could contribute to reducing the demand for fossil fuels within the EU and from countries importing into it. Simultaneously, such measures would contribute to tackling the plastic pollution, energy, and climate crises. Since the biggest share of plastics produced and consumed in the EU is packaging, boosting the pace and ambition of implementing the SUP Directive – as well as advancing transformative measures through the revision of the Packaging and Packaging Waste Directive (PPWD) – constitutes a critical first step.

MAJOR FINDINGS

- Plastic production is by far the largest industrial oil, gas, and electricity user in the EU, overshadowing other energy-intensive industries such as steel, automobile manufacturing, machinery, and food and beverages. It was responsible for nearly 9% and 8% of the EU's final consumption of fossil gas and oil, respectively, in 2020. This is about as much as the final gas consumption of the Netherlands and almost as much as the final oil consumption of Italy in 2020.[8]
- Plastic production is also the most energy- and feedstock-intensive of all the processes of the petrochemicals industry. It accounts for a fifth (21.98%) of industrial gas and two-fifths (37.58%) of oil consumption in the EU. The largest part of this energy was used to produce plastic packaging, which accounts for 40% of the end market for plastic products in the EU. This represents about 10 billion cubic metres (bcm) of fossil gas and 14 million tonnes (mt) of oil. This is about as much as Hungary's final gas consumption in 2020, and Sweden and Denmark's combined oil consumption in 2020.
- Nearly 15% of the final gas consumption and 14% of the final oil consumption in 2020 in the EU 27 was used to manufacture petrochemicals.
- In the EU in 2020, 38% of the gas and 22% of the oil came from Russia, making the energy-intensive petrochemical industry significantly reliant on Russian fossil fuels.
- Together, Belgium, Germany, Spain, France, Italy, the Netherlands, and Poland are responsible for 77% of all plastic packaging waste in the EU. Achieving reductions of 50% in plastic packaging and 90% in recycling would lead to a reduction of 6.2 bcm of fossil gas and 8.7 million tonnes of oil at the EU level compared to 2020. These figures are the equivalent to the Czech Republic's final oil and gas consumption in 2020.[9,10]

A business-as-usual scenario, where the plastic production industry plans on doubling its gas- and oil-based production is incompatible with achieving the goals of the Green Deal, binding climate targets to keep global warming under 1.5°C, and addressing our urgent need to reduce our oil and gas consumption and dependency. The EU cannot buy its way out of the multiple current crises by simply replacing Russian fossil fuels with imports from other regions. Every barrel of oil or cubic metre of fossil gas that goes towards plastics is a major roadblock towards the goals of tackling the climate and plastics crises and breaking free from the fossil dependency that foments instability and fuels wars. To regain international leadership in fighting the climate and plastic pollution crises and to protect its citizens from escalating prices and resulting conflicts, the EU needs to confront the petro-elephant in the room: plastics.

9%

In 2020 plastic production was responsible for 9% of the EU's fossil gas consumption and 8% of its oil consumption.

POLICY RECOMMENDATIONS

- A first and easy step in achieving a drastic reduction of virgin plastic production is for the EU Member States to accelerate and expand the implementation of the Waste Framework and Single-Use Plastics Directives, increasing the level of ambition, notably by adopting prevention and reuse targets. Such action will also reduce oil and gas consumption.
- The EU and its Member States need to seize the opportunity of the revision of the PPWD, to adopt ambitious measures on packaging reduction. These should include a cap on overall packaging put on the EU market that would decrease over time, and the development of reuse systems, powered by ambitious and binding reuse targets. The EU should, in particular, consider using the PPWD vehicle to ban further unnecessary packaging such as single-serving sachets and wrapping of fruits and vegetables, and to prohibit overpackaging.
- The EU cannot afford to wait another three decades to reduce by 40% its virgin plastic use in the packaging and household goods, automotive, and building sectors, as put forward even in industry-sponsored proposals by Plastics Europe and SYSTEMIQ.[11] Reducing production from 50 to 29 megatonnes (Mt) should be achieved by 2030.
- Reacting to the threat of a supply cut from Russia, EU Member States have agreed to reduce gas consumption by at least 15% by 31 March 2023. But this measure falls far short of what is needed. For the immediate future and in light of expected gas shortages over the coming months, the EU and its Member States need to ensure that emergency measures restrict non-essential industry oil and gas use, for example, the share that would typically go to producing unnecessary single-use plastics and packaging. The scope of such restrictions needs to mirror the scale of the crisis and be implemented in a way that protects workers and low-income households.
- The EU and its Member States need to push for ambition on upstream measures within the negotiations of the Global Treaty to End Plastic Pollution, including the following: recognition of sourcing and feedstocks in defining the full plastics life cycle, a global cap on overall plastics production, and recommendations to begin phasing down plastics production with initial limitations on the production of particularly problematic or unnecessary plastics.
- The EU and its Member States must stop building new fossil fuel infrastructure, including petrochemical facilities, starting with a moratorium or freeze on permitting of new virgin plastic production facilities (such as crackers).
- EU and Member State attempts to secure oil and gas from Africa, the US, and elsewhere, offer only a short-term fix for a long-term problem, while deepening the climate crisis and imposing significant environmental and health costs on the countries and communities where extraction occurs. Attempts to address the crisis must be rooted in lowering all fossil fuels consumption while laying the foundation for a just transition, not enabling the building out of new infrastructure. Thus, the EU's climate and energy diplomacy should be based on securing climate-friendlier energy access and climate justice, and be used to fulfil its commitments, including financial ones, under the EU Green Deal, the United Nations Framework Convention on Climate Change (UNFCCC), and the Paris Agreement.
- The EU and its Member States must engage with the European petrochemical industry to set up decarbonisation plans and a fossil-free future pathway, and a needed just transition for this sector.

Considering that the EU's seven biggest oil- and gas-consuming countries for plastics production are also responsible for 77% of all plastic packaging waste in the EU, these measures should be implemented in priority in Belgium, Germany, Spain, France, Italy, the Netherlands, and Poland.

ANNEX
SOURCES AND NOTES

1 **European Commission (2022).** Joint Statement between the European Commission and the United States on European Energy Security.

2 **International Energy Agency (2022).** Africa Energy Outlook 2022.

3 **Statista (July 2022).** Leading oil-consuming countries worldwide in 2021.

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5 **International Energy Agency (2018).** The Future of Petrochemicals: Towards a more sustainable chemical industry.

6 **European Commission (2018).** A European Strategy for Plastics in a Circular Economy.

7 **United Nations Environment Assembly of the United Nations Environment Programme (2022).** Resolution adopted by the United Nations Environment Assembly on 2 March 2022.

8 **Eurostat (2022).** Final consumption oil.

9 **Eurostat (2022).** Final consumption gas.

10 **Eurostat (2022).** Final consumption oil.

11 **SYSTEMIQ (2022).** ReShaping Plastics: Pathways to a Circular, Climate Neutral Plastics System in Europe.

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