

ISSUE DESCRIPTION

COMMITTEE Economic and Social Council
ISSUE Solving the Energy Crisis in Europe
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Introduction

In 2022, energy prices hit an all-time high in Europe. Today it is the main cause of inflation, since it influences the heating of buildings, transportation, electricity usage and the production of factories. In the last 10 years overall energy prices showed an increasing tendency, however, the situation worsened considerably after Russia's invasion of Ukraine. Russia used the energy carriers as a weapon of war. Despite the remarkable drop in Russian energy supplies, Europe managed to find alternative supplies to fulfil the demand. This year it was considered as an emergency case and European countries spent a significant amount of money on refilling their storages.

It seems that in the next years, this needs to be done without any Russian energy imports and the cost of implementation should also be reduced to normalise energy prices in Europe.

Definition of Key Terms

Energy crisis - Shortage of energy causing high energy prices and inflation

Energy carrier - Coal, Oil, Natural gas, etc.

Renewable energy - Solar, wind, hydro (water), geothermal, bio energy

Natural gas - The name of the mixture of gases used for heating

LNG - Liquid Natural Gas

EU - European Union

Solid Fossil Fuel - Used in power plants as fuel (mainly coal)

Import - Bringing goods (this case: energy carriers) into a country from abroad for sale.

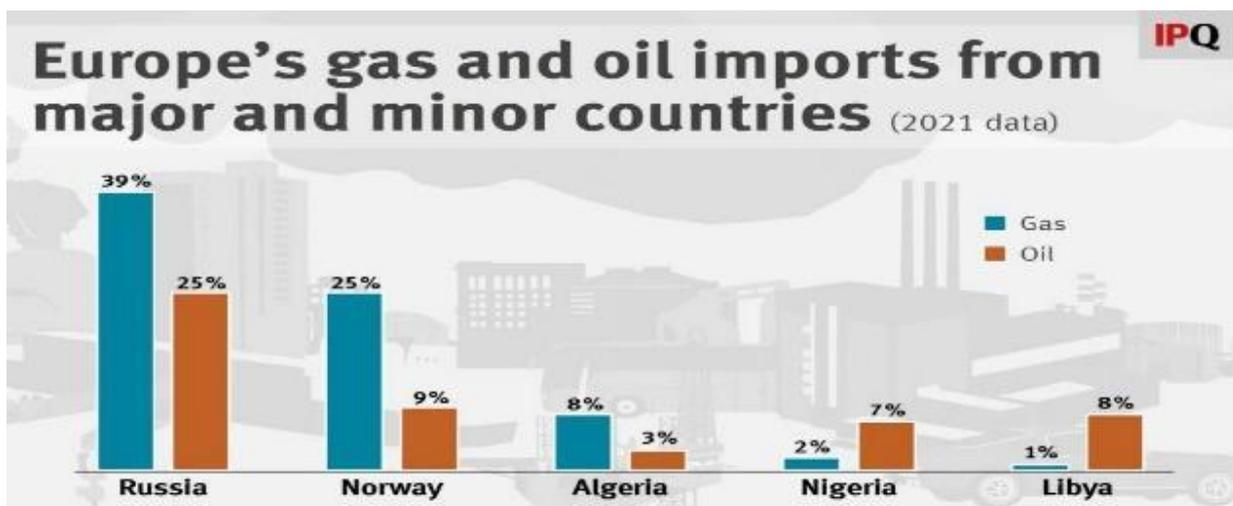
Sanctions - A threatened penalty for disobeying a law or rule. (In this case: not financing Russia's war by paying for energy)

General Overview

In Europe, energy prices have hit all-time highs in 2022. The origin of the problem is rooted in many different reasons:

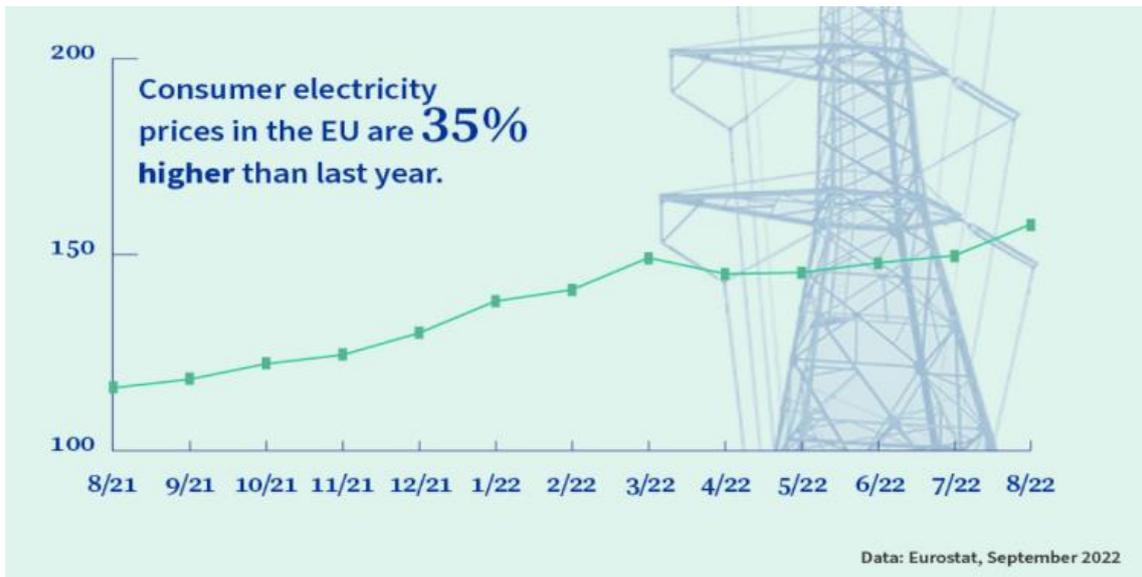
- Europe had a particularly cold winter in 2021, which meant the depletion of natural gas supplies;
- Germany's new policy of abandoning nuclear energy, therefore they must rely on other and more expensive energy carriers. Because of the crisis, Germany allows the operation of three nuclear power plants until April 15, 2023, but it cannot fulfil the demand.
- After the COVID-19 pandemic, countries in Europe (and worldwide) fully reopened their economies. Markets are now competing as energy demand rises after the shock of the pandemic.
- However, the most significant problem is the dependence of European countries on Russian fossil fuels. In the past 20 years Europe had become dependent on cheap Russian energy carriers. Today, economic systems with factories, power plants and households as well rely on Russian energy import. The distribution of European energy import is shown below:
 - 25% Oil
 - 39% Natural gas
 - 54% Solid Fossil Fuel (mainly black coal)

These are the percentages of the full import from Russia. (Data measured in 2021)



As a consequence of Russia's unjustified invasion of Ukraine, the prices of Russian natural gas and oil supplies skyrocketed, and the EU also sanctioned imports from Russia including all

energy carriers. The shortage of gas and oil prevents approximately 30% of power plants from functioning, therefore the crisis also extends to electricity.



Different energy carriers affected by the crisis:

Natural gas:

Europe has the most worrying shortage of natural gas, since almost half of it was imported from Russia. In August 2022, it reached its highest market value. (In some countries it was seven times more expensive than it had been in the previous years.) Natural gas is the most common energy carrier when it comes to heating households, public buildings (schools, town halls, public hospitals, etc.), and it is also a precious energy source in the sector of industry.

Oil (petroleum):

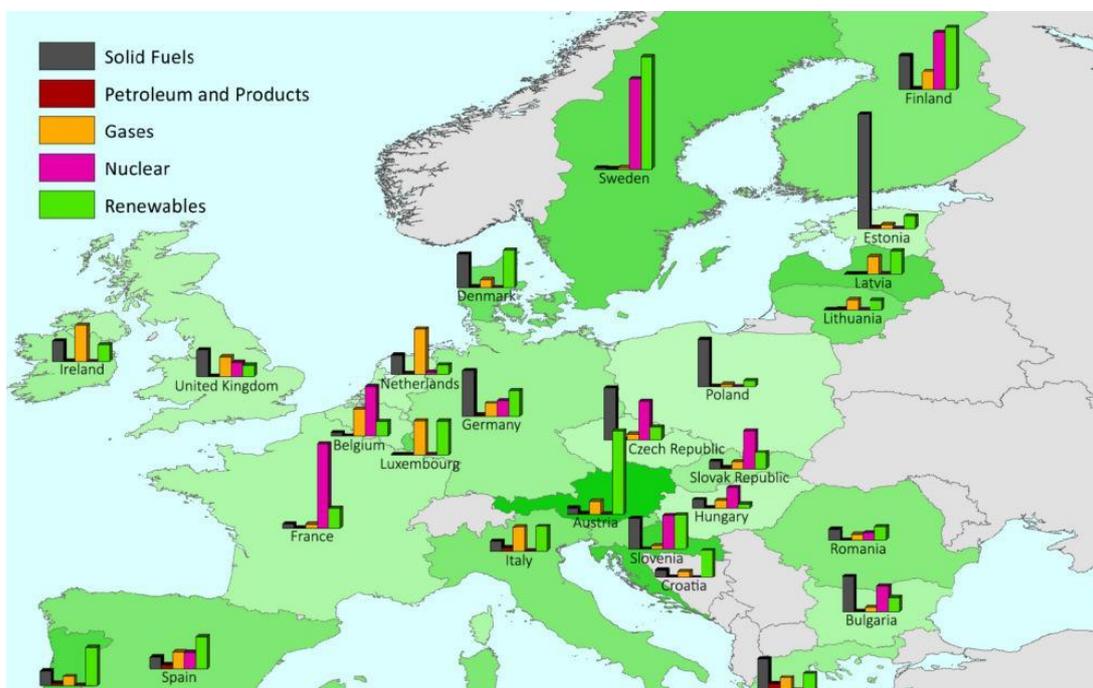
The fuel of cars, trucks, diesel locomotives, ships, tanker ships and planes is produced by crude oil refining. Since approximately a quarter of crude oil import was also from Russia, Europe suffered the second biggest shortage of this carrier. Petrol, diesel, and kerosene prices skyrocketed with the market value of crude oil. Mostly travelling and transportation is affected by this change, therefore it significantly contributes to the inflation experienced in Europe. Besides that, not really a considerable number, yet still some power plants use oil as a source of electricity production.

Solid Fossil Fuels:

Burning coal or wood is the least environmentally friendly solution when it comes to energy sources. However, the Netherlands, Germany and Italy also agreed on continuing financing investments in this field because of the crisis. In Europe, many power plants use coal as an energy source. 54% of coal used in the EU was also imported from Russia.

Electricity:

As technology develops there is and there will always be an increasing tendency in the demand for electricity. The crisis extends to electricity as well, as it is also produced by the fossil fuels mentioned above. The picture shows the EU 's electricity consumption by country and fuel source.



Fortunately, Europe was able to tackle the difficulties for the winter of 2022/2023, since every country managed to fill their natural gas storages before winter. The problem will be the next winter (2023/2024). All the storages will have to be filled without any Russian import. Demand for electricity will have to be also fulfilled in the next year. Petrolane prices should also be pushed back to acceptable prices.

Major Parties Involved

Germany: They are increasingly turning to solar energy. They have also resorted to using more coal or LNG to offset its reduced imports of natural gas from Russia.

France: The government is trying to protect households by limiting the increase of energy prices for them. (Limit on maximum energy prices)

UK: They are also trying to protect households. The UK has a very limited gas storage capacity, which makes them more dependent on accessing gas in the short-term markets. The UK has the worst insulation of homes in Europe.

Spain: Spain aims to source 74% of its power from renewables by 2030.

Italy: Reducing scheduled heating hours in homes and offices alike and capping indoor temperatures to 19° C.

Austria: They are trying to be more self-sufficient by supporting wind and solar power projects. They think support for companies is also required.

Hungary: They suggest reconsideration of sanctions against Russia, because they are not efficient enough, while on the other hand, it keeps energy prices high.

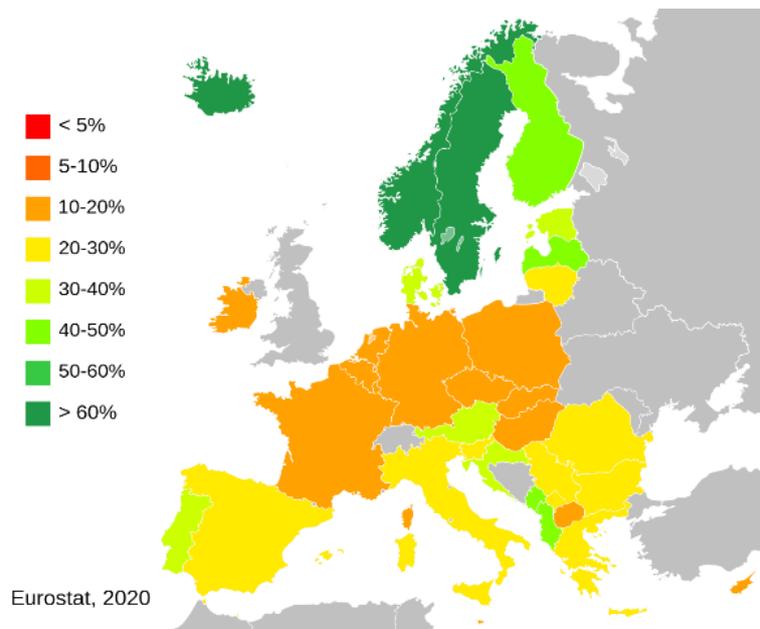
Timeline of Events



Source: IEA

Previous Attempts to Solve the Issue

The Climate Action (initiated by the United Nations) started before the crisis to invest in renewable energy. It states that about \$3 trillion a year needs to be invested in renewable energy – including investments and infrastructure – to allow Europe to reach net-zero emissions by 2050. It was a slow process and now the crisis highlighted other reasons why Europe should minimise dependence on fossil fuels as soon as possible.



Source: Eurostat

Share of renewable energy in gross final energy consumption in European countries.

Europe tried to replace its Russian natural gas and oil imports with imports from the USA, Norway, Qatar and Nigeria. Although oil import could be replaced, the import of natural gas is more problematic. There is not enough time to build pipelines, so the remaining solution is Liquid Natural Gas. However, that way is much more expensive via its transportation methods and the infrastructure in Europe is also unprepared for transporting the gas from the harbours.

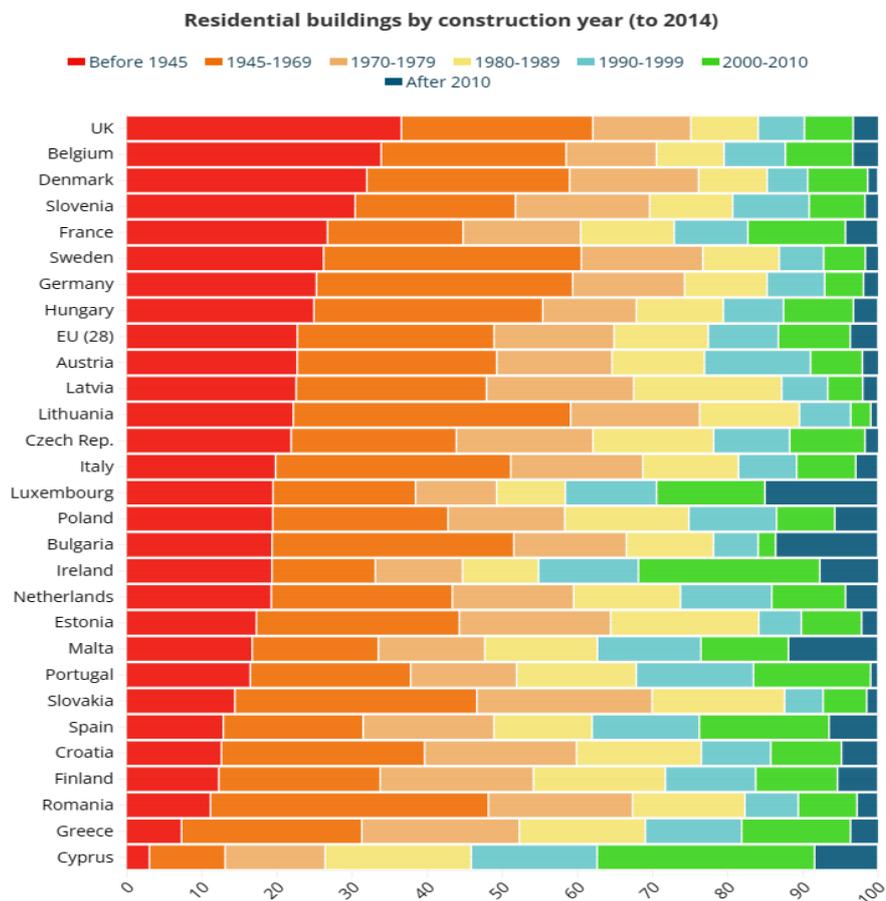
Possible Solutions

Decreasing demand for energy:

- Improving the insulation of households
- Capping the thermostat of public buildings around 18° C - 20° C

Combining these two could reduce natural gas consumption by even 30% or more. Heating buildings up to more than the temperature outside squarely increases the amount of energy needed.

- Transportation via ships and trains (They are much more energy-efficient than trucks.)
- Decreasing lighting hours in towns and in villages as well. For example: Turning public lighting on after an hour before it used to be and same for turning them back off in the morning.



Buildings built later usually have better insulation as well.

However, older homes can be insulated later.

Investing in renewable energy:

- Solar panels
- Wind turbines
- Hydroelectric power plants (dams)
- Geothermal energy

Solar panels are accessible to households, so that savings of the citizens can be involved. By investing in renewable energy future energy stability can be based. It is better to have continuous energy sources rather than buying from the ever-changing global market.

Investing in nuclear energy:

- Building or improving nuclear power plants
- Investing in the development of Fusion power (long-term solution)

Replacing fossil fuel imports:

- Importing LNG
- Trying to find other countries to import from
- Withdrawing sanctions on Russia and agreeing on acceptable prices (Considering the political situation)

These are really beneficial in case of emergency, but in the long run LNG imports will not be worth it, since the money, which would be needed to invest in an infrastructure supporting LNG, could be spent on other more stable and cheaper energetical developments.

Bibliography

A quick overview of the topic:

https://www.youtube.com/watch?v=joh_XQsamnU&t=31s

Which countries have the best and worst insulated homes?

<https://www.euronews.com/green/2022/12/09/europes-energy-crisis-in-data-which-countries-have-the-best-and-worst-insulated-homes>

European Council: Three EU-coordinated measures to cut down bills:

<https://www.consilium.europa.eu/en/infographics/eu-measures-to-cut-down-energy-bills/>

A more briefly explaining video on the topic:

<https://www.youtube.com/watch?v=AySC0LbRP7M>

Sources of the issue description:

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