VISUALIZING

THE EUROPEAN UNION'S ENERGY DEPENDENCY

Europe's dependence on energy imports has become a major source of criticism in **2022**, but is it actually a cause for concern?

This infographic visualizes the EU-27's energy dependence, as well as its top import partners.

Energy dependency

0% 100%

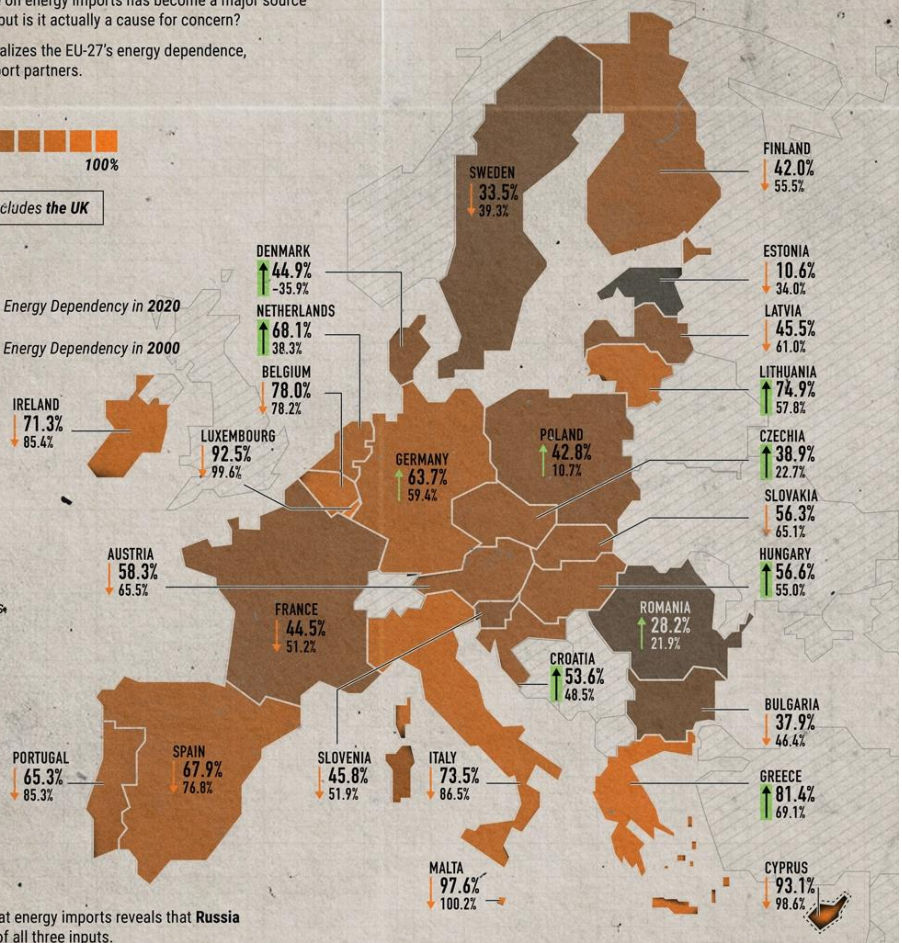
*The EU-27 excludes **the UK***

EU AVERAGE

57.5% *Energy Dependency in **2020***

56.3% *Energy Dependency in **2000***

***Energy dependence** measures the extent to which a country relies on imports to meet its energy needs.*



Taking a closer look at energy imports reveals that **Russia** is the main supplier of all three inputs.

EU IMPORTS

CRUDE OIL

ALGERIA 2.4%

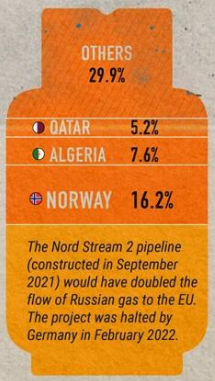
RUSSIA 26.9%

SOLID FUEL (COAL)

SOUTH AFRICA 2.8%

RUSSIA 41.1%

NATURAL GAS



Source: Eurostat, eia, Statista

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VISUALCAPITALIST.COM

Visual source/link- https://www.visualcapitalist.com/visualizing-the-eus-energy-dependency/

Name- Tirtha Tilak Pani

Title of the Visualization-

'The European Union's Energy Dependency

The creator aims to answer whether Europe's energy imports have become a significant concern in 2022. We can see that the website created this visualisation on March 22, 2022. The Russian invasion of Ukraine began on February 24, 2022. Hence, it is safe to assume that the website presented this visual in the context of the Russian invasion of Ukraine.

Pros-

1. Several elements in the visualisation, such as the lightning symbol at the top right corner and the containers of crude oil, solid fuel and Natural Gas, all cater to the viewer's mental model regarding energy.
2. Each encoding in the visualisation is visible, and the arrows convey the message regarding the increase or decrease of energy imports.
3. A proper explanation for all the complex terms and colours used has been provided.
4. Suppose we recall the Metro station map (Harry Beck,1933). In this case, we see a similar scenario where creators have chosen to let go of geographical accuracy to make a point. It has worked well because geographical accuracy does not play any role in the context in which this visualisation has been presented.

Cons and Suggestions-

We know that good visualisations provoke thoughts in the mind of the viewer. They tell a good story. I feel that we must also critique all visualisations concerning the point that they are trying to convey. So, if we look at this from the context of the Russian invasion-

1. It is common knowledge that increased energy dependency is unsuitable for a country. But, over here, it has been represented by an arrow highlighted green. Similarly, the decrease has been described by orange arrows. The colours used do not reflect reality.

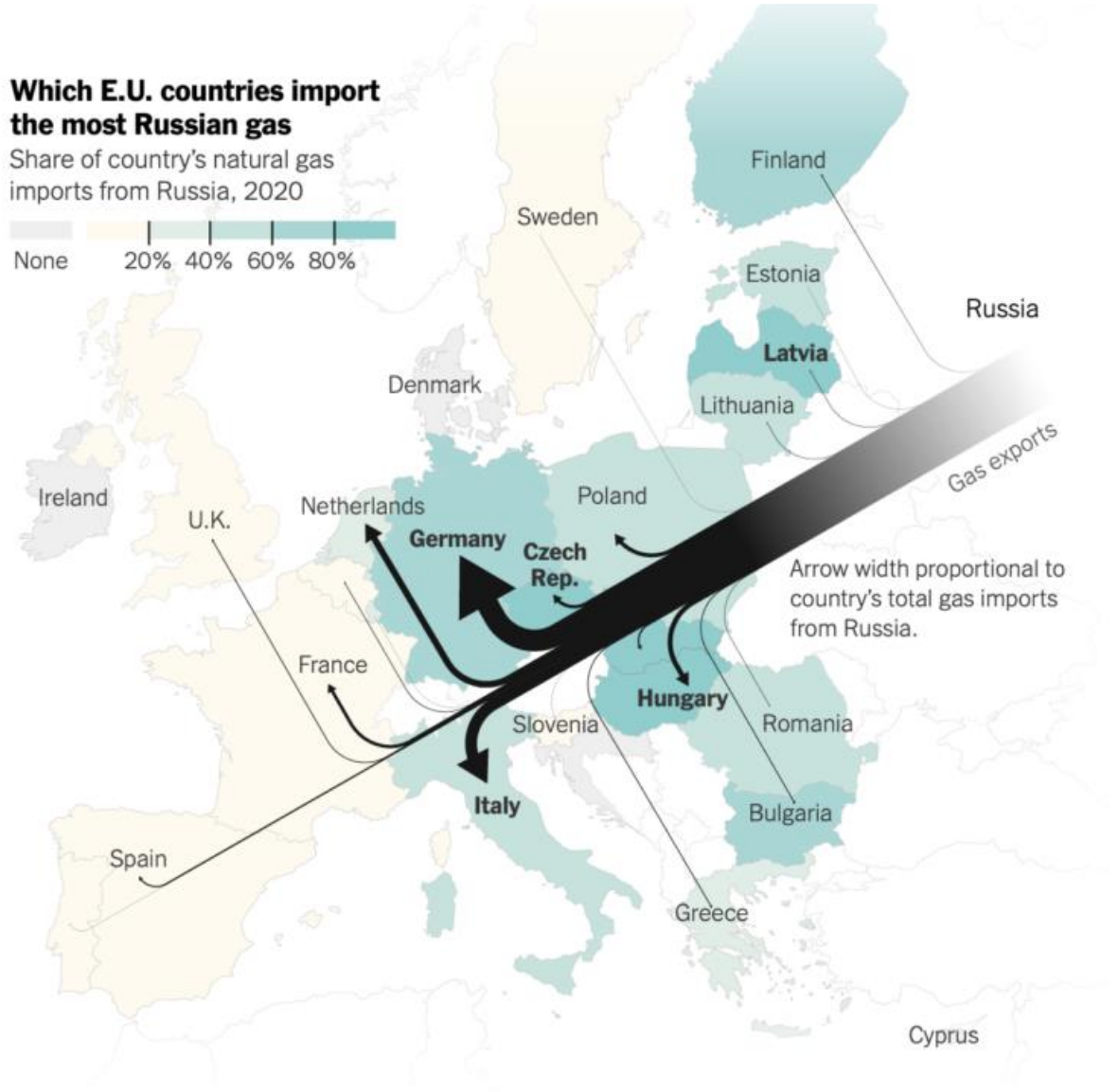
2. The statistics for 2000 and 2020 have been given, but these are direct statistics. It would have been much better if they had shown a derived figure, i.e. the percentage increase or decrease. They could have been highlighted in red or green depending on whether they indicate an increase or decrease in energy dependency.
3. While the shapes at the bottom cater to the viewer's mental model, they represent percentages improperly. The creator could have used simple pie charts in their place.
4. If we zoom in on the map into the island of Cyprus, we can observe that it has a non-uniform colour pattern, whereas all other countries have been filled with a single colour.
5. While the graphic aims to draw attention to the fact that the EU-27 countries heavily depend on Russia for their energy needs, it does not visually represent it successfully. A picture is worth a thousand words. So, it would have been much better if the creator had described the insights using a few additional visualisations-

    a) They could have ranked the countries by their energy dependence on Russia using a bar chart.

    b) When it comes to gas pipelines, they could have created a visual similar to the one shown in the link below. Not only does this accurately show the origin and the path through which the energy is transported, but it depicts that all that gas comes from Russia. It also gives the viewer a sense of gas dependency per country.

    Link- https://flowingdata.com/2022/02/17/map-of-russian-gas-exports/

    Image below



Source: EuroStat and the British Department for Business, Energy & Industrial Strategy • Note: Austria did not report the source of its natural gas imports in 2020. Data includes both piped and liquefied natural gas.