

How does the Ukraine War affect climate change?

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Extra carbon dioxide is given off in war. The countries that signed a 2015 agreement in Paris had the choice of whether to report military emissions. An individual country could choose to report those military emissions. (1) But Russia and Ukraine are not reporting their military carbon emissions. As a result, the full picture of carbon emissions from this war between Russia and Ukraine are unknown.

We don't know how many vehicles, tanks, or planes are used, so we cannot even calculate the carbon emissions from gasoline, diesel and jet fuels.

Moreover, the US is flying in tons of weapons to Ukraine; the EU is shipping in equipment and humanitarian aid, and both sides are refueling its tanks and aircraft. Local fighting using missiles, artillery shells, and gunfire add to the emissions.

We observe that carbon emissions have also increased due to burning fuel tanks, apartment buildings, and the burning of military equipment.

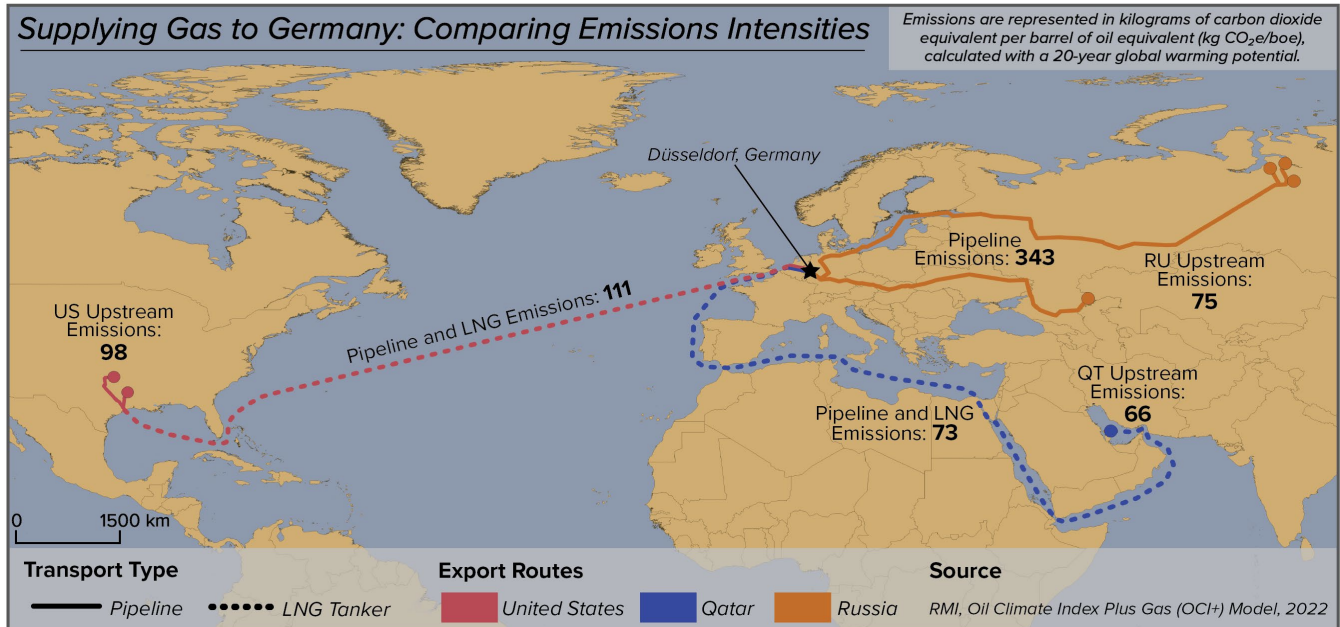
It is fair to say that emissions caused by this war are formidable but incalculable at the present time.

When EU countries rely less on Russia's gas, they may actually lower carbon emissions.

Before the embargo, the EU got 25% of energy from natural gas and Russia provided 40% of that natural gas. Since the embargo these facts are no longer true.

I see 2 positive changes in reducing carbon emissions during the past month of war in Ukraine:

1. The 27 EU countries are limiting reliance on Russian gas. On **3/15/22** it was reported that the EU will import LNG from US, Qatar and other countries, and started plans to build additional LNG terminals to handle the large transport ships. (2) One interesting report dated **3/16/22** was entitled, **"Not all gas is created equal"**. (3) It reported that the drilling, flaring and gas pipelines from Gasprom leaks far more harmful emissions of methane than the leaks from US and Middle East sources. This would be a relative plus for the environment because the EU has shifted away from Russian gas. The map below shows the relative carbon dioxide equivalent emissions from different sources.



2. The E.U. and U.S. plan to speed up transition to renewable energy EU leaders are expected to agree at a two-day summit to **cut reliance on Russian fuels** and build a buffer against supply shocks, but the bloc remains unlikely to sanction Russian oil and gas.

In a draft of their summit conclusions seen by Reuters, the leaders will agree to "work together on **the joint purchase of gas, LNG (liquid natural gas) and hydrogen**" ahead of next winter, and coordinate measures to fill gas storage.

The European Commission said recently that it was ready to lead negotiations that would pool demand and seek gas ahead of next winter, following a similar model developed when the block purchased COVID-19 vaccines.

The EU is planning to **increase renewable energy** to lower the need for imported LNG. In a **3/30/22** article (4) the EU will do "whatever it takes to **rebuild solar energy manufacturing** in Europe and is on a mission to slash its Russian gas use by two thirds this year and end it by 2027."

"A specific strategy for solar energy will attempt to speed up permitting that has held up installations, support more solar power purchase agreements, and build up Europe's solar manufacturing capacity"

The Commission said that Russian gas could be replaced with 480 gigawatts (GW) of wind and 420 GW of solar capacity by 2030.

The U.S. is planning similar steps. On **3/31/22** the White House Briefing Room wrote that President Biden "will call on Congress to pass his plan to **speed the transition to clean energy** that is made

in America.” “The President will issue a directive, authorizing the use of the Defense Production Act **to secure American production of critical materials** to bolster our clean energy economy by reducing our reliance on China and other countries for the minerals and materials that will power our clean energy future.” Hopefully Congress will authorize the Defense Production Act. (5)

Conclusion The environmental degradation caused by the on-going war between Ukraine and Russia cannot now be calculated. However, we hope to see some benefits to climate change as countries shift more quickly to renewables.

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1. <https://insideclimatenews.org/news/18012022/military-carbon-emissions/#:~:text=The%20U.S.%20Military%20Emits%20More%20Carbon%20Dioxide%20Into,gallon%3B%20an%20F-35%20requires%202.37%20gallons%20per%20mile>.
 2. https://rmi.org/which-gas-will-europe-import-now-the-choice-matters-to-the-climate/?utm_medium=email&utm_source=spark&utm_content=spark-a&utm_campaign=2022_03_17&utm_term=button
 3. <https://www.renewableenergyworld.com/policy-regulation/renewables-nuclear-and-energy-efficiency-in-iea-plan-to-break-eu-reliance-on-russian-gas/>
 4. <https://www.msn.com/en-ph/news/world/eu-will-do-whatever-it-takes-to-bring-solar-energy-manufacturing-back-to-europe/ar-AAVHhgZ?ocid=uxbndlbing>
 5. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/31/fact-sheet-president-bidens-plan-to-respond-to-putins-price-hike-at-the-pump/>