Global North energy outsourcing demands more attention, researchers say

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Manufacturing nations in the Global North are stockpiling energy and emission problems by outsourcing energy-intensive industrial processes to countries in the Global South, a new study reveals.

Global North countries use their advantages in capital and technology to grab a large amount of energy through outsourcing—creating a 'false decoupling' of energy consumption from economic growth.

However, backward production technologies in the Global South tend to result in more energy consumption per unit of output—leading to greater carbon emissions and environmental damage.

An international group of researchers from the UK, Netherlands, and China published their findings in *Energy Economics*—calling on countries across both Global North and Global South to work together on resolving the problem.

Concerns about the energy associated with the manufacturing of a product or service or so-called embodied energy in international trade have been increasing due to global energy shortages and environmental degradation.

Co-author Yuli Shan, from the University of Birmingham, commented, "As negotiations unfold on global trade agreements, the Global North must recognize the pivotal role played by certain nations in the Global South with export-oriented, manufacturing economies."

"We must ensure energy equity in these negotiations—while energy-rich countries in the Global North primarily export energy resources, the Global South engages in energy-intensive export production, potentially compromising their own environment.

"Policymakers must address the question of which countries benefit from embodied energy and offshoring unsustainable production processes. This is fundamental to fostering equity, sustainability, and shared responsibility in the global economic landscape."

The researchers note that the Global South is not only a source of increasing global energy consumption but also a central player in global embodied energy transfers—energy consumption 'baked into' manufactured products, which are then exported around the globe.

Recognizing that more efficient usage of energy can significantly curb the escalation of global embodied energy transfer, the researchers call for Global South nations to unite in advancing technology levels and fostering regional collaboration.

The team also calls on companies and governments in the Global North to play their part by contributing substantial technical support to enhance the efficiency of industrial processes in the Global South.

"The importance of collaborative efforts to enhance technological capabilities and strengthen regional cooperation cannot be overstated. Improving energy efficiency is key to mitigating potential inefficiencies that could strain an already fragile ecological environment and hasten climate change," added Shan.

"By bolstering technical support, fostering collaboration, and collectively improving energy efficiency, nations can work together to address the challenges posed by rising energy consumption and achieve the shared goal of a greener, more sustainable world."

Using the most up-to-date multi-regional input-output database (GTAP 11), the researchers analyzed the spatial pattern and driving forces of change for energy embodied in international trade among developed and developing countries from 2000 to 2019.

The results show that while North-North trade dominates global embodied energy transfers, its dominance is waning, and the difference in embodied energy transfers between the Global South and Global

North remains huge.

More information: Yu Yang et al, The shift of embodied energy flows among the Global South and Global North in the post-globalisation era, *Energy Economics* (2024). DOI: 10.1016/j.eneco.2024.107408

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