

PS2.2

**ROAD TO NET ZERO EMISSION - THE GEOPOLITICS OF ENERGY
TRANSITIONS AND HEALTH NEXUS**

| BACKGROUND

Globally, we are racing against a rapidly closing window of opportunity to secure a liveable and sustainable future for both humans and the planet by limiting global warming to 1.5°C. The primary source of greenhouse gas emissions that drive climate change is the burning of fossil fuels (coal, oil, and natural gas) mainly for electricity and transportation[1][2]. The recent report by WHO, the WB and IRENA shows that close to one billion people globally are served by health-care facilities with no electricity access or with unreliable electricity[3].

Over 90% of people breathe outdoor air with pollution levels exceeding WHO air quality guideline values. Two-thirds of this exposure to outdoor pollution results from the burning of the same fossil fuels that are driving climate change. A rapid global transition to clean energy would not only meet the Paris climate agreement goal of keeping warming below 2C, but would also improve air quality to such an extent that the resulting health gains would repay the cost of the investment twice over[4].

The energy sector in itself is responsible for two-thirds of greenhouse gas emissions[5][6]. Fossil fuels are also the primary sources of energy that power our modern society. Access to clean, affordable, and reliable power is essential for human health, education, and economic prosperity. At the same time, the extraction, transportation, and the use of these fuels have far-reaching consequences that affect human and planetary well-being[7], and the fossil fuel industry plays a significant role in **determining the quality of life** for many people around the world.

The way we produce and use energy is transforming. **Policy in this area intersects decisions that will affect climate change, air quality, and the economy.** Addressing the health impacts of the fossil fuel industry and reaching net zero CO2 emission will require a shift towards cleaner and more sustainable forms of energy. This will not only reduce the emissions that contribute to air pollution and climate change but also create new opportunities for job growth and economic development.

While the shift to renewables brings several macroeconomic advantages, it may also create new **social divisions and financial risks** that could reverberate through the international system and be geopolitically significant. The energy transformation may **deepen existing political divisions or create new ones that in their turn create geopolitical consequences**[8].

In the transition to clean energy, critical minerals bring new challenges to energy security. Specifically, production and deployment of renewable energy technologies such as wind turbines, solar panels, and electric vehicle batteries generally require more minerals to build than their fossil fuel-based counterparts. Mining of such minerals has been found to be associated with **armed conflict and child labor**. The recent analysis created quite a stir among downstream sector operators and other parties involved in conflict minerals. It is essential to ensure that the mining of these minerals is done responsibly and sustainably, with appropriate environmental and social safeguards in place.

Transitioning to clean and more sustainable energy sources also implies significant and disrupting changes to existing economic and power structures, with perhaps **significant distributional consequences between countries and regions**. Decarbonizing industries also implies taking on sectors, such as shipping, aviation, and agriculture, where emissions are currently specifically difficult to reduce.

In addition, there are **powerful global forces that favours the continued investments and expansion of fossil fuels**. In 2022, prices for spot purchases of natural gas and coal have reached levels never seen before, this created a huge USD 2 trillion windfall for fossil fuel producers above their 2021 net income. On the other hand, higher energy prices are also increasing food insecurity in many developing economies, **with the heaviest burden falling on poorer households**. Some 75 million people who recently gained access to electricity are likely to lose the ability to pay for it[9].

References

- [1] F Perera and K Nadeau; Climate Change, Fossil-Fuel Pollution, and Children's Health, *N Engl J Med* 2022;386:2303-14. DOI: 10.1056/NEJMra2117706
- [2] <https://www.aa.com.tr/en/energy/oil/world-energy-demand-will-increase-50-by-2050-eia/33749>
- [3] Energizing health: accelerating electricity access in health-care facilities. Geneva: World Health Organization, the World Bank, Sustainable Energy for All and the International Renewable Energy Agency; 2023.
- [4] Markandya, A., Sampedro, J., Smith, S. J., Van Dingenen, R., Pizarro-Irizar, C., Arto, I., & González-Eguino, M. (2018). Health co-benefits from air pollution and mitigation costs of the Paris Agreement: a modelling study. *The Lancet Planetary Health*, 2(3), e126-e133.
- [5] International Energy Agency: World Energy Outlook 2021. Accessed at: World Energy Outlook 2021 (windows.net)
- [6] <https://www.ipcc.ch/2020/07/31/energy-climatechallenge/>
- [7] P Wilkinson, K R Smith, M Joffe, and A Haines; Energy and Health 1: A global perspective on energy: health effects and injustices. *Lancet* 2007; 370: 965-78; DOI:10.1016/S0140-6736(07)61252-5
- [8] A New World - The Geopolitics of the Energy Transformation, IRENA 2019
- [9] World Energy Outlook 2022. Accessed at <https://www.iea.org/reports/world-energy-outlook-2022/executive-summary>

| OBJECTIVES

This session aims to:

- Critically analyze this new, emerging geopolitical reality where global energy transformation is becoming a major geopolitical force: changing the power structures of regions and states, bringing the promise of energy independence to nations and communities, enhancing energy security and democratic empowerment
- Reinvigorate commitments to promote health equity and just/green transition toward Net Zero Emission (NZE) at local, national, regional and global level.



Keynote

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Marina is the Executive Director of the Lancet Countdown: Tracking Progress on Health and Climate Change, an independent and multi-disciplinary research collaboration of almost 100 academic centres around the world, and headquartered at University College London's Institute for Global Health. The Lancet Countdown tracks and drives progress towards a world which is responding to climate change in a way that protects and promotes public health. Marina led a team of researchers in developing England's National Health Service's Net Zero commitments, and is a member of numerous advisory boards for projects focusing on health and climate change. Trained as a clinical biochemist in the Universidad de Buenos Aires, Argentina, and holds a PhD in biomedical sciences from the University of Cambridge, UK. Her research background spans from toxicology through to environmental health and climate change, and she has previously carried out her research in the Instituto Tecnológico de Buenos Aires, the University of Cambridge, and the Francis Crick Institute.