IRENA
International Renewable Energy Agency

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Background Note
Ministerial Roundtable on the Geopolitics of Energy Security

1. To achieve the Paris climate goals, the world's energy mix is set to undergo profound transformations. The outcomes of COP28 chart the course for these changes, committing to a shift away from fossil fuels and pledging to triple renewable capacity and double efficiency by 2030. According to IRENA's 1.5°C Scenario, the share of fossil fuels in total final energy consumption will dramatically decrease, from 63% in 2020 to just 12% by 2050. Modern biomass and predominantly green hydrogen are projected to occupy larger portions of final energy consumption in 2050 than fossil fuels. Crucially, electricity is poised to become the primary energy carrier of the future, with its share increasing from 22% today to over 50% by 2050. Consequently, an efficient and electrified energy system, fuelled by renewables and green hydrogen, will form the backbone of the global economy in the 21st century.

2. Historically, the concept of energy security has been closely tied to fossil fuels, with a primary focus on their supply. For many nations worldwide, fossil fuels, particularly oil and gas, represent significant import dependencies and, in some cases, sources of strategic vulnerability. Central to traditional notions of energy security is the idea that energy is both scarce and essential for a country's functioning, linking security to the prevention of resource shortages. However, this view is misaligned with the characteristics of renewable energy sources. Unlike fossil fuel reserves, renewable energy potential is not only abundant but also more evenly distributed across the globe, reducing the risks associated with over-reliance on a few countries or regions. The cost of renewable energy is primarily driven by technological advancements and the scale of adoption, offering greater price stability in contrast to the often-volatile pricing of fossil fuels.

3. In the wake of the energy crisis of 2022, renewables-based energy transitions were seen not only as a tool for climate action and development, but also a centrepiece of energy security. This shift in the policy and mindset was also reflected in IRENA's mission set out in the Medium-term Strategy for 2023-2027, where Members asked the Agency to examine the link between renewable energy and energy security.

4. The forthcoming report "Geopolitics of the Energy Transitions: Energy Security" thus explores the multidimensional energy security concept, moving away from traditional approaches to reflect the changing paradigms. It builds on the series of the IRENA reports on the geopolitics of the energy transitions, and the Agency's extensive knowledge on the wide range of technical, socio-economic and climate issues. The report shows that policymakers should not merely apply the fossil fuel system's thinking to the renewables-based system. It outlines the key advantages that

can be harnessed and potential risks. Ultimately, the report acknowledges that defining energy security is as much a political endeavour as it is a technical one.

5. The transition in energy sources is set to profoundly influence global energy trade dynamics, international dependencies, and the wider geopolitical landscape. Policy priorities related to energy security need to evolve from focusing on the physical supply to a systemic approach that renewable-dominated, highly electrified, digitalised, and regionalised energy systems require. Critically, considering energy security in the era of renewables must account for the needs of all countries, guided by the principles of equity and human security.

Objectives of the session

6. The Ministerial Roundtable will discuss the link between renewable energy and energy security and discuss emerging considerations as the shift to a renewables-based system accelerates. The discussion will facilitate an exchange of insights and learnings from the recent energy crisis and its wide global repercussions and promote proactive consideration of emerging energy security issues. IRENA will present key findings from the forthcoming "Geopolitics of the Energy Transitions: Energy Security" report, developed as part of the workplan of the Collaborative Framework on Geopolitics, followed by a set of reflections and an open discussion among Members.

Guiding Questions

- In what ways can renewable energy sources contribute to enhancing national and global energy security? How does the concept of energy security change with a shift towards renewable energy?
- What are the advantages and challenges of localized energy production using renewables?
- How might the transition to renewable energy affect global energy markets and trade dynamics?
- How can international collaborations enhance global energy security in the renewable era?

Associated Publications

Geopolitics of the Energy Transition: Critical materials (2023)

Geopolitics of the Energy Transformation: The Hydrogen Factor (2022)