[SQUEAKING]

[RUSTLING]

[CLICKING]

PROFESSOR: And we now have our last speaker, and I believe we start with a video. But she's available online. Is that correct? And I want to introduce Hela Cheikhrouhou, who is the head of the Middle East and Central Asian division of the IFC, International Finance Corporation, and is leading an incredible effort to scale geothermal networks in her country group. So do we have that live?

HELA CHEIKHROUHOU: Hello, my name is Hela Cheikhrouhou. I'm the Regional Vice President for the Middle East and Central Asia at the International Finance Corporation. I'm excited to speak to you about IFC's commitment to expand geothermal energy networks for heating and cooling across the Middle East and Central Asia regions.

IFC is a member of the World Bank Group and the largest global development institution focused on the private sector in emerging markets. Climate change is one of our strategic pillars of action. We aim to drive a transition towards a low emission and climate resilient economic development that prioritizes people, jobs, and sustainable growth.

Leveraging geothermal energy networks as a sustainable, efficient solution to the growing energy demands in the global south aligns with this mission. These are four reasons for that. First, geothermal energy is reliable and scalable. The substantial heat emanating from Earth's core to its near surface remains largely untapped. It is a predictable source of energy that is not weather dependent.

Most geothermal energy solutions are based on proven technologies with long track record of successful operating experience. It can be utilized for various applications, including heating and cooling, our focus today, but also, in certain instances, water desalination and electricity generation if the geology allows for it.

Second, geothermal energy enhances energy security. Because Earth's heat is not a commodity that can be traded, geothermal energy offers us a free fuel, renewable, with limited environmental footprint and no emissions that is easy to tap to. This enhances energy independence of a country and reduces pressure on the balance of payment for energy.

Third, geothermal energy is truly renewable. In a world where the majority of greenhouse gas emissions are from the energy sector, this is both affordable, reliable, and clean, enabling a faster energy transition. Emerging countries can address their concerns about fuel price volatility, supply chain disruptions due to geopolitical conflicts. And it offers a free storage of excess heat and cold in the geothermal boreholes. Hence, it's a baseload with storage, bypassing the weaknesses of intermittent renewable electricity.

Finally, strengthening competitiveness by offering a reliable, affordable, and sustainable energy like geothermal allows us to make a dent in reducing poverty and mitigating climate change at the same time. This energy is available 24/7 hours a day, seven days a week, making it essential for economic development.

By supporting it through climate finance, we can bolster local entrepreneurship, local utilities, and it is a job-intensive solution, including for transitioning workforce from industries that rely on fossil fuels for heating and cooling into this clean alternative. This is particularly relevant for a just energy transition.

Heating and cooling makes up 50% of global final energy consumption. Harnessing surface geothermal energy with networked ground source heat pump working at utility scale offers us a low-cost heating and cooling solution that will enhance our energy security, strengthen our economic competitiveness, create jobs, decrease greenhouse gas emissions, hence benefiting both economies and societies.

The emerging markets can benefit from strategically planning geothermal rollout. The surface geothermal solutions, like the networked ground source heat pumps, can be used anywhere. They don't have a resource risk. They save massively on electricity. And they reduce the bills if financed properly.

Take Jordan, for example. As of 2021, almost 80% of its energy needs were met through imports of natural gas and crude oil. Heating and cooling consumes a large share of its electricity, stressing an aging power grid. Conventional cooling systems use significant water volumes in one of the world's most water-stressed countries, Jordan.

By moving to geothermal energy networks, we can address all of these challenges. There is a massive efficiency rate of five times for heating with geothermal and six times for cooling with geothermal.

Scaling up utility scale ground source heat pumps is a key part of IFC's investment program to mitigate climate change in the region. By developing this affordable and reliable heating and cooling model, in the immediate term, we are providing catalytic financing for the preparation of demonstration projects, which include the following-- first, tailored engineering design. A suitable site is selected. The site specific engineering design is developed in accordance with the country's permitting and regulatory requirements.

Second, we engage stakeholders, including organizing study tours for decision makers and implementers, educational programs, and workshops for engineers, policymakers, and the communities. Third, we address any remaining policy gap. We do a comprehensive review for the framework, the regulatory environment, and the market condition for network geothermal system. We identify barriers, opportunities, and gaps. And we develop actionable policy recommendations to enable a timely uptake.

Lastly, we mobilize the capital to finance demonstration scale-up efforts. This would include blended finance solutions and solutions in local currencies for the utilities and local corporates, given that their revenues will be in local currency. IFC is currently rolling out demonstration projects in seven countries, all eager to see projects move forward-- Turkey, Pakistan, Jordan, and four Central Asian nations of Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan.

These projects include those previously mentioned for areas of support and lay the foundation for a fifth-generation district heating and cooling network system operated by public or private utilities. All the demonstration projects will be engineered using the single pipe ambient temperature loop to provide space heating and cooling to residential and commercial consumers. Each of these projects is designed to be for at least 3,000 units equivalent with a potential scale up for up to 30,000 units, which is the preference of most of the countries to go big.

Thank you for attending the presentation. I'll be happy to answer questions during the Q&A session.