

Scaling Renewables: Emma Gordon on Off-Taker Risk, Grid, and Storage

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In the third expert interview related to [CCSI's work on scaling renewable energy investment](#), we interviewed Emma Gordon to understand more about off-taker and currency risks and poor grid reliability—inhibitors to renewable energy development. Emma Gordon is an Energy and Investment Policy Analyst at the International Energy Agency (IEA), where she has led research in topics such as attracting investment to emerging markets and developing economies, as well as the role of sustainable finance in the energy transition, and renewable energy.



What is “off-taker” risk, and why does it impact renewable energy investment in developing countries?

[Off-taker risk](#) refers to the revenue-related risks that come from relying on state utilities with poor financial health. In many developing countries, the energy market structure involves a regulated single buyer—a state utility that buys power from generators at a regulated cost and then sells power to the consumer. However, many of these utilities operate at a loss. For example, operating losses among all African utilities are thought to have exceeded USD 150 billion in 2020, driven by poor payment collection rates, theft, cost increases, and operational problems. This presents investors with non-payment risks, or sometimes the inability to deliver power to the utility due to failure to build or maintain grid infrastructure.

How can developing countries minimize off-taker risk?

Investors use de-risking mechanisms, often in the form of guarantees, to respond to off-taker risk. These de-risking mechanisms can add to the time and cost of the transaction, and the most sustainable solution is therefore improving the financial health of utilities. A key means to achieve this is via cost-reflective tariffs, which reduce operating losses and allow for more targeted subsidized tariffs for customers most in need. Sticking with the example of African utilities, [IEA modeling](#) shows that tariff reform could bring combined operating losses down by more than 70% to less than USD 50 billion (in real terms) by 2030. However, these reforms are politically challenging, particularly as many countries are currently experiencing cost-of-living crises.

What policy tools and other measures should developing countries deploy to ensure grid reliability and adequate energy storage solutions to support investment in renewables?

Africa's power grids suffer from poor reliability and high technical and commercial losses due mainly to underinvestment and aging infrastructure, though other factors also contribute, such as overgrown vegetation (especially in remote areas), natural disasters, vandalism, and theft. Most utilities and system dispatchers are poorly equipped to deal with these operational problems due to a lack of real-time data, low visibility on grid status, limited automation of generation and grid equipment, and underdeveloped dispatch and operational codes.

Digitalization offers opportunities to address some of these difficulties cost effectively. Prominent measures include geographic information systems, outage management systems, and smart metering. Digital innovation alone cannot solve all reliability problems: the focus must remain on addressing the root causes whether they are lack of monitoring, lack of resilience, or lack of capacity. But some digital technologies are essential to improve reliability and are well suited to address the uniquely acute operational risks in Africa.

How does currency risk affect renewable energy investment, and what can developing countries do to address it?

The vast majority of renewable energy investments are made in hard currency (such as USD or EUR), but consumers pay for electricity in local currency. Currency fluctuations therefore have a significant impact on the ability to service financing costs.

This risk can be avoided either by foreign capital providers using hedging instruments or by increasing the involvement of local capital. Available hedging instruments include local currency guarantees, back-to-back loans, or currency swaps.

However, the most sustainable solution involves deepening local capital markets, which in developing countries are dominated by commercial banks that cannot provide the long-term finance necessary for renewable energy projects. Particularly in middle-income or upper-middle income countries, domestic pension and sovereign wealth funds can play a larger role, but need financing structures designed with their lower risk appetites in mind.

How does IEA's work contribute to scaling investment in renewable energy, particularly in developing countries?

In 2021, the IEA published the [Financing Clean Energy Transitions in Emerging and Developing Economies](#) report, which presented key recommendations to scale investment in clean energy. Investment and financing are also a key part of our regional studies, for example, the [Africa Energy Outlook 2022](#). These reports serve as important knowledge development tools and also inform our engagement with government partners in developing countries.

For more information, read [CCSI's work on scaling investment in renewable energy](#).