

Authors



Camilla Sacchetto

Fragilities Economist
IGC London Hub, State
Fragility initiative



Nicholas Stern

IG Patel Professor of
Economics and
Government
London School of
Economics and Political
Science (LSE)



Charlotte Taylor

Policy Analyst and
Research Advisor,
Grantham Institute
London School of
Economics and Political
Science (LSE)

Published on: 4 Nov 2020

Countries: International

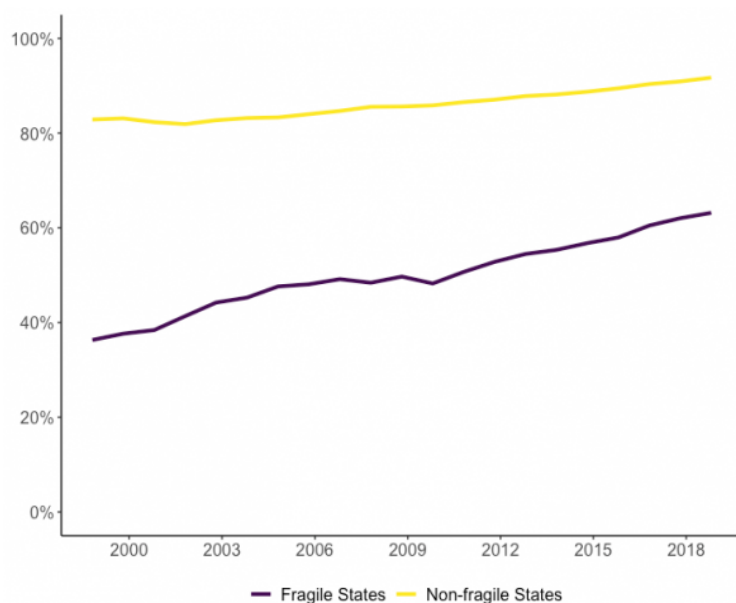
Research themes: Energy, State
Fragility

The case for scaling up renewable energy investments in fragile and conflict-affected situations

The impressive drop in the cost of clean technologies and the local practical potential of solar PV are making renewable energy an increasingly viable option from an economic perspective in fragile settings. [Clean energy investment](#) also has direct implications for tackling climate change, improving the socioeconomic inclusion of marginalised groups, and state-building – through greater legitimacy, resilience, and commitment to peace. These elements highlight the great potential that investments in renewable, reliable, and affordable energy hold to help countries escape state fragility.

Access to renewable, reliable, and affordable energy is a key enabler of sustainable, social, and economic development. However, global inequalities in this respect are great, and gaps appear to be especially wide and persistent in fragile and conflict-affected situations (FCS) (see Figure 1). Estimates show that one-third of the approximately 790 million people across the world who did not have [access to electricity in 2018](#) lived in FCS.

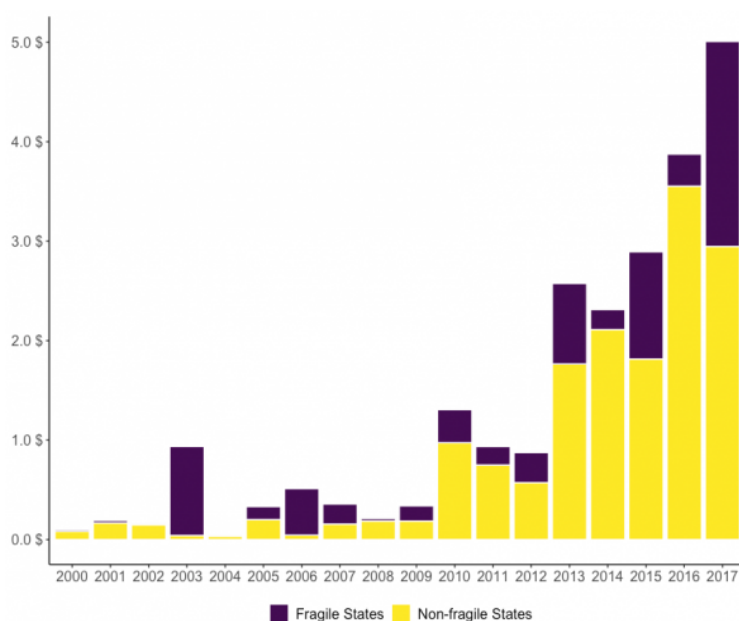
Figure 1. Average access to electricity (% of the total population)



Source: World Bank (2020). [Tracking SDG 7.1.1 Electrification Dataset](#).

Traditionally, conventional interventions such as the delivery of humanitarian assistance, have been preferred to renewable energy investments, with state-building being regarded as a prerequisite for investments in energy systems (see Figure 2). This thinking entails limited effort towards clean energy investments in fragile environments from development agencies, including multilateral and bilateral development finance institutions, and local authorities affected by poor governance, lack of resources, and perverse incentives. As a consequence, there is limited penetration of renewables in FCS.

Figure 2. Median international financial commitments per capita to developing countries in clean energy, R&D, and renewable energy production (USD)



Source: World Bank (2020). [*Tracking SDG 7.a.1 International financial flows dataset*](#)

Here, we argue that there are strong reasons to think differently about these issues: investing in clean energy systems and technologies, through fragility-sensitive approaches, is just as urgent a priority for FCS as it is for more stable environments. In addition, the positive feedback loop between securing access to clean energy, state-building, and peace, explored at the end of this blog, makes a strong case for pursuing renewable energy investments in tandem with other interventions that tackle state fragility and to do so in a committed, long-term fashion.

Fighting climate change through clean energy investments is a priority for FCS

Climate change is amongst the greatest global systemic shocks threatening FCS, with recent forest fires in [Angola and the Democratic Republic of Congo](#), and locust swarms hitting [East Africa](#), being indicative examples of the range of possible impacts. Above all, [climate change matters for FCS](#) because these environments are highly exposed to its negative consequences.

Today, three out of five people living in **conditions of fragility** live in settings which are vulnerable to climate change, and of the 20 least-electrified countries over the period 2010-18, over half are on the World Bank's **Harmonized List of Fragile Situations**, including the Central African Republic, Democratic Republic of Congo, and Somalia. The challenges of poverty and vulnerability to climate change converge in those FCS whose populations are highly reliant on climate-dependent sectors, such as rain-fed agriculture, where processes of desertification could push millions into hunger.

Moreover, conflict, poor governance, and vested interests in fossil fuel-based energy slow down efforts in implementing climate change mitigation policy and investments in renewable energy that would help drive reductions in emissions and thereby mitigate climate impacts.

Climate change is a threat multiplier that will **magnify existing fragilities** unless international- and national-level action is undertaken with urgency. For instance, growing climate change-driven poverty, food insecurity, and water scarcity is likely to ignite social resentment, protest, and even conflict over the control of scarce resources.

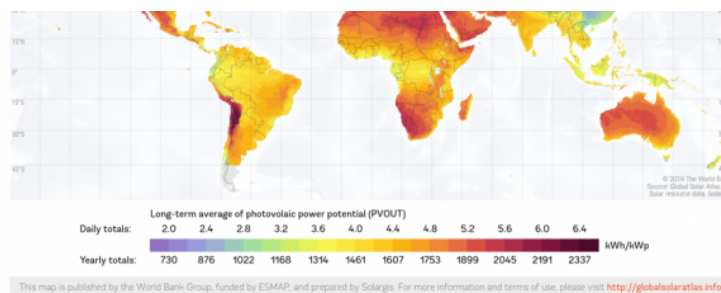
Renewable energy investments make economic sense

Technological progress has driven a **remarkable drop in the cost of clean energy technologies**, such as those for solar and wind power, which are therefore becoming increasingly affordable products for poorer households. Achieving greater affordability is critical for FCS, where high poverty incidence constrains the purchasing power of the population. In addition, **renewables are not only becoming cheaper** in absolute terms but are increasingly outcompeting traditional fossil fuel-based alternatives. This is especially relevant for FCS where fuel costs are often prohibitive. For example, **Mogadishu, Somalia** offers some of the most expensive electricity in the world, as the cost of one kilowatt of electricity from diesel generators is four times higher than in neighbouring Kenya and ten times higher than in the US. On the other hand, lower energy costs from renewables could stimulate investment, enterprise growth, and the creation of productive private-sector jobs.

Moreover, thanks to favourable geographic characteristics – including land availability, sunlight, soil configuration, and air temperature – several FCS have amongst the world's **highest practical solar photovoltaic potential**, or the output achievable by a photovoltaic system. This makes solar energy an especially promising opportunity in fragile locations such as Afghanistan, Libya, Yemen, and Sudan.

Figure 3. Photovoltaic Electricity Potential





Finally, renewable energy systems have another favourable feature for fragile settings, **scalability**. Photovoltaic systems in particular rely on modular solar panels, which, at a small scale, can provide affordable electricity to remote, off-grid households. For instance, in [East-Africa](#), the off-grid, pay-as-you-go market is now able to offer systems in the 0–150-watt peak range that are attractively priced, often requiring no down payment, and are capable of running appliances such as radios, televisions, and refrigerator-freezers. At the commercial level, the modularity of solar panels can be exploited by expanding initially small investments incrementally to develop larger solar energy plants over time, as conditions on the ground allow.

Renewable technologies can be deployed through resilience-enhancing decentralised systems

Fossil fuel-based power generation lends itself to large, centralised systems because it relies on long supply lines and is associated with significant economies of scale. Instead, wind and solar energy are well-suited to a **decentralised power system architecture**, since they are available everywhere, do not require long supply lines, and exhibit much more modest economies of scale and smaller capital requirements for cost-effective power generation.

Decentralisation is an important characteristic in contexts of fragility as it strengthens the **resilience** of individual power systems, but also enhances wider economic and political resilience. This is because decentralised systems:

- Reduce reliance on a small number of large generators and on the [transmission and distribution grid](#), which are frequent targets of military attacks that disrupt service delivery to households and businesses.
- Use locally available renewable energy sources, which eliminate dependency on imports and transportation of fossil fuels.
- Have lower capital density, which reduces overall financial risk because [invested capital is distributed](#), and unexpected disruptions are location-explicit.
- May lead to the [democratisation of power systems](#)

Clean energy investments can improve women’s security, economic inclusion, and health

Investments in renewable energy could also be instrumental in addressing long-standing issues related to gender equality. In some

FCS, social norms cause women to suffer from lower access to economic opportunities and inclusion than their male counterparts. For instance, one-third of men in fragile and conflict-affected countries say it is unacceptable for women to undertake paid work outside the home if they want to.

Particular characteristics of traditional, non-renewable energy sources reinforce gender-based challenges and inequalities. For example, in vulnerable populations, the burden of collecting fuelwood is primarily shouldered by women and children – a time-consuming task that detracts from [child care, income-generating activities, and leisure](#). Walking long distances in insecure areas also exposes women to [dangers](#) including harassment, abduction, rape, or wild animal attacks. Household air pollution, caused by burning biomass fuels on inefficient stoves, also disproportionately affects women, who do most of the cooking.

Instead, decentralised, renewable energy systems are affordable options that can drive [women's use of energy](#) for income-generating purposes and, therefore, economic empowerment, as well as improved health outcomes. Small-scale solar systems, for instance, offer women the opportunity to run enterprises from their home, amongst other benefits.

Renewable energy investment, state-building, and peace are mutually reinforcing dynamics

State-building and clean energy investments are not goals that ought to be pursued sequentially, with state-building being a prerequisite for clean energy investments. In fact, investing in a modern, affordable, and reliable supply of energy can do much to address state fragility challenges.

As previously mentioned, ensuring energy access for the population improves socio-economic development outcomes: it allows businesses to function, reduces risk, and promotes investment and enables household-level productive activities such as studying. All of these activities reduce the so-called “opportunity cost of conflict”, and directly tackle many of the direct [determinants of fragility](#), such as poor resilience to shocks or an undeveloped private sector. Moreover, the resumption of electricity supply from public authorities is an important, tangible step that can restore confidence and trust in the government, strengthening state legitimacy – a scarce asset in FCS. This blog aims to show how renewable energy investments hold concrete potential in achieving these goals.

This blog summarises our policy brief [Priorities for renewable energy investment in fragile states](#).

Disclaimer: *The views expressed in this post are those of the authors based on their experience and on prior research and do not necessarily reflect the views of the IGC.*