

BACKGROUND PAPER

# Exploring new avenues for partnerships on renewable energies in peace operations

## ABOUT THE EVENT

The Challenges Annual Forum 2021 (#CAF21Berlin) will take place from 1–3 December and discuss how peace operations could more effectively address climate and environmental security risks and opportunities. The co-hosting partner for this year's hybrid event is the German Center for International Peace Operations (ZIF).

Challenges Forum is a global partnership that uses its convening power to generate innovative ideas and promote results for more effective peace operations.

## Challenges Forum consists of Partners from:

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**Peace operations are mandated to help bring peace to regions, protect civilians, and enable nations to transition away from conflict. While these goals are the priority and core activities of missions, energy serves as a critical input for achieving those mandated goals and mission functions.**

To reach UN climate targets and remain responsible environmental stewards, UN peace operations should explore new partnerships with private sector actors, civil society, and local peacebuilders. One example of such a partnership would be working with private sector energy developers to provide much-needed, modern, renewable energy alternatives to peace operations. Scaling up renewable energy use can serve mission needs, reduce security risks to peacekeepers, and benefit the communities they support, but this shift will require a system-level change in how missions think about and operationalise energy in the field. Drawing on research by the Powering Peace initiative, this Background Paper highlights and reflects on emerging models for renewable energy use in peace operations.

**Introduction**

In September 2019, Secretary-General Antonio Guterres announced the UN Secretariat Climate Action Plan (UNSCAP), which included a target to achieve 80% renewable energy use by 2030.<sup>1</sup> Achieving this ambitious goal largely depends on peace operations, which in 2020 used only 4% renewable energy, and represent the single largest carbon footprint of the UN.<sup>2</sup> Peace

operations today are reliant on thousands of diesel generators to power the work of nearly 100,000 peacekeepers. This diesel use accounts for a significant share of global peacekeeping costs and the majority of UN greenhouse gas emissions. Many operations are deployed in off-grid settings, where mission footprints are often the largest energy consumer and producer in the area, and are dependent on long fuel and supply convoys that represent high-value targets and security vulnerabilities.

UN missions need modern alternatives, both to serve their own needs, and further benefit the communities they support, encourage energy access, and align with climate goals by expanding access to renewable energy. A system-wide transition to renewable energy is required for peace operations to reach the UNSCAP targets and the renewable energy goals set forth in the Department of Operational Support's Environment Strategy for Peace Operations,<sup>3</sup> which will also create new legacy assets and local projects which can benefit host communities. This Background Paper highlights three partnership models for addressing climate security challenges and for increasing renewable energy use in the field:

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1. UN Department of Management Strategy, Policy, and Compliance, "UN Secretariat adopts climate action plan, September 2019, <https://www.un.org/management/news/un-secretariat-adopts-climate-action-plan>.

2. DOS Environment Strategy for Peace Operations, "Executive Summary – Phase Two: July 2020-June 2023," [https://operationalsupport.un.org/sites/default/files/dos\\_environment\\_strategy\\_execsum\\_phase\\_two.pdf](https://operationalsupport.un.org/sites/default/files/dos_environment_strategy_execsum_phase_two.pdf).

3. DOS Environment Strategy for Peace Operations, "Executive Summary – Phase Two: July 2020-June 2023," [https://operationalsupport.un.org/sites/default/files/dos\\_environment\\_strategy\\_execsum\\_phase\\_two.pdf](https://operationalsupport.un.org/sites/default/files/dos_environment_strategy_execsum_phase_two.pdf).

- 1) Power Purchase Agreements (PPAs),
- 2) In-house procurement, and
- 3) Local grid-connection.

The paper draws on research by the Powering Peace Initiative, and cites examples from South Sudan (UNMISS), the Democratic Republic of the Congo (DRC) (MONUSCO) and Somalia (UNSOS).<sup>4</sup>

Peace operations face a number of institutional constraints which make the transition to renewable energy more difficult. These include short-term mandates and funding cycles, a well-established contingent-owned-equipment (COE) reimbursement system for diesel generators and fuel, and path dependency. Public-private partnership models like PPAs that leverage private sector expertise and capitalise on falling renewable energy costs will be crucial for the UN to achieve its goals.

#### **Partnership Model #1: Power Purchase Agreements (PPAs) – The Case of UNSOS (Somalia)**

One way that peace operations can respond to climate security challenges and greatly accelerate the adoption of renewable energy is by shifting away from in-house energy provision to begin partnering with private sector renewable energy developers to sign energy-lease agreements. Often called Power Purchase Agreements (PPAs), this type of arrangement has been key to the growth of renewable energy around the world. The PPA represents a contractual partnership between a private-sector project developer, who finances and builds the project, and the energy offtaker(s), who commit to purchasing the energy at a set price for an agreed period of time. This project model leverages the purchasing power of UN sites, which serve as “anchor clients” and commit to purchasing the

clean energy from the system, but relieve the UN of having to finance and build the system. This approach treats energy as a service rather than a commodity. In the UN peace operations context, the PPA model provides a solution to the challenge of expensive upfront capital costs for renewable-energy projects by providing the private-sector developer with a creditworthy anchor-client counterparty — the UN mission — to make the renewable-energy project economically viable.

In October 2020, the UN Support Office for Somalia (UNSOS) announced the first peace operation PPA agreement with Kube Energy and the government of South-West State, which would see the construction of a new solar system in the city of Baidoa.<sup>5</sup> The system is currently projected to be roughly 2MW solar plus battery storage and will power the UN and African Union missions, as well as the offices of the local government of South-West State. It is projected to provide nearly 100% of the UN’s energy in Baidoa, a city with some of the highest energy costs in Somalia, which the UN currently resupplies by air due to road insecurity. Ownership of the project will be transferred to the government of South-West State after 15 years. The project may also be expanded in the future to support the local grid in Baidoa. A similar PPA model was also pioneered by another UN agency, the International Organisation for Migration (IOM), in 2020. This agreement saw the installation of a 700kw solar plus battery system in the Humanitarian Hub of Malakal IDP camp, in South Sudan.

This PPA model is scalable across many, perhaps most, UN sites. It allows the mission to avoid the upfront financing costs, and can leverage UN purchasing power to catalyse new energy projects and support energy access in settings with low electrification or limited grid options.

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4. This background paper partially builds off of previous research that the Powering Peace initiative, a partnership between the Stimson Center and Energy Peace Partners, has conducted on the future of renewable energy in peace operations. For more information on our reports and past events, see here: <https://www.stimson.org/project/powering-peace/>

5. UNSOS, “Baidoa Set to Boost Renewable Energy Production,” 25 October 2020, <https://unsos.unmissions.org/baidoa-set-boost-renewable-energy-production>.

### **Partnership Model #2: In-House Procurement – The Case of UNMISS (South Sudan)**

The most common model of renewable energy use in UN peace operations is in-house procurement, whereby the mission purchases the renewable energy equipment (primarily solar PV) itself, and either installs it in-house or outsources the installation. Scaling this model faces two primary challenges. First, renewable energy carries a high, one-time upfront cost: its economic value is unlocked over time, as it continues producing energy for years without significant additional costs. Thus, while a diesel generator and fuel may be cheaper than a solar system using a 1-year cost basis, the solar system is likely to be cheaper over 3–5 years, and can last for up to 25 years. Second, UN peace operations face annual budgetary constraints which make it hard to overcome these high upfront costs, and has limited the scale of most missions' solar purchases to very small systems.

One exception to this is the UN Mission in South Sudan (UNMISS), which in 2020 and 2021 installed the two largest solar systems currently operating in any UN mission: a 1 megawatt (MW) solar system in Juba and a 1.2MW solar system in Wau. However, the circumstances of these projects were unique and very hard to replicate or plan for. Faced with an end of year budget surplus in 2016, the mission was able to procure more than \$10 million of solar panels and batteries on short notice, but without a plan for instal-

**“First, renewable energy carries a high, one-time upfront cost: its economic value is unlocked over time, as it continues producing energy for years without significant additional costs.”**

lation or the service contract templates to hire a company to plan and install the systems. The equipment remained in containers for several years, during which the batteries were spoiled, before finally coming online in 2020 (Juba) and 2021 (Wau). These two systems are both installed behind of the fence of the UNMISS bases, and provide power only to the UN.

### **Partnership Model #3: Local Grid Connection – The Case of MONUSCO (DRC)**

MONUSCO, the UN Mission in the Democratic Republic of Congo, represents a third model for partnering with local actors to accelerate renewable energy procurement. MONUSCO uses the highest share of renewable energy of any UN mission, thanks to the availability of local hydro-powered grids in both Kinshasa and eastern DRC. In 2018, MONUSCO transitioned two field sites in eastern DRC from diesel to local hydro powered grids, reducing diesel and leading to cost savings. Eastern DRC also offers numerous hydro powered grid options, and the mission is continuing to try to connect additional field sites, albeit slowly.<sup>6</sup>

This is an excellent option for MONUSCO, but is not widely available outside of the DRC, or for most field missions. It carries limited upfront costs, and transitioning from diesel to a clean-grid option offers significant, immediate cost-savings for MONUSCO. Connecting to local clean grids also supports the local energy sector, with knock-on peacebuilding benefits from projects such as Virunga Energies in eastern DRC.

### **Peacebuilding Benefits**

In addition to lowering the carbon footprint of UN peace operations, a renewable energy transition in the field presents new avenues for building peace dividends, options to partner with local civil society, and an opportunity for mission support activities to feed into substantive work of the mission's political affairs division, while also connecting to broader development priorities. Indeed, UN peace operations' choices around energy provision have the potential to support wider development and energy

6. To read more about the MONUSCO case study, see here: Gregory Mthembu-Salter, with David Mozersky and Sherwin Das, "Renewable Energy & UN Peacekeeping: Untapped Potential in the DRC," 30 September 2019, <https://www.stimson.org/2019/renewable-energy-un-peacekeeping-untapped-potential-drc/>.

## “UN peace operations’ choices around energy provision have the potential to support wider development and energy access strategies for host countries”

access strategies for host countries, led by UN Country Teams and development institutions.

In Mali, for example, our research has found that a MINUSMA transition to renewable energy in northern Mali could also strengthen peacebuilding by supporting local energy access. Expanding local energy services offers a creative and important new opportunity for the UN to support the Algiers peace agreement and MINUSMA’s own peacebuilding mandate.<sup>7</sup> South Sudan, one of the least electrified and most fossil fuel dependent countries in the world, offers a slightly different opportunity. Electricity access in South Sudan depends almost entirely on access to diesel and generators. Despite being an oil producing country, all diesel is imported across very long supply chains, parts of which are controlled by conflict actors. This dynamic is part of a broader zero-sum dynamic in South Sudan – where those in power have access to fuel, and access to profits in an economy that remains almost entirely dependent on oil revenue. This dynamic remains central to the cycle of conflict in the country. Increasing renewable energy deployment offers both a critical development tool, as well as a tool for decentralisation and for disaggregating development from South Sudan’s total dependence on fossil fuels,

and a way to develop a more sustainable peace in the country. As UNMISS continues to expand its adoption of renewable energy in South Sudan, incorporating models that build in local energy benefits can further the mission’s efforts to support peace and stability in the newest country in the world.

### Conclusion

Creative partnerships are crucial to addressing the evolving climate security challenges facing UN peace operations around the world. Partnerships with civil society and local peacebuilders will also enable the inclusion of local knowledge and ownership. While this paper has focused on partnership models for transitioning to renewable energy, missions can and should collaborate with local actors on climate security issues such as climate risk analysis, water, wastewater, and waste management, and building resilience. Emerging renewable energy public-private sector models offer other potential benefits and ways to advance mission mandates: they can address the high upfront capital costs of constructing UN-owned energy infrastructure, and can allow missions to serve as an anchor client for private sector developers, catalysing new local renewable energy development and increased electrification. Additional attention and action on this issue is merited given high-level, political commitments from Member States and the UN Secretariat. Recent developments include an MOU signed between DOS and the International Renewable Energy Agency (IRENA) to “seek opportunities to work with countries that host UN peacekeeping operations to identify host country policy, regulatory, and technical measures that would help increase their renewable energy share”<sup>8</sup>, and an energy compact announced at the UN High-Level Dialogue on Energy bringing DPO, DOS, Norway, the UAE, IRENA, and a number of Member States together with a common goal to facilitate a renewable energy transition in UN peace operations.<sup>9</sup>

7. Dirk Druet and Rida Lyammouri, with David Mozersky, “From Renewable Energy to Peacebuilding in Mali: MINUSMA’s Opportunity to Bridge the Gap,” 25 June 2021, <https://www.stimson.org/2021/from-renewable-energy-to-peacebuilding-in-mali-minusmas-opportunity-to-bridge-the-gap/>.

8. IRENA, “IRENA and the UN Agree to Advance Renewables in Peacekeeping Operations,” 15 June 2021, <https://www.irena.org/newsroom/pressreleases/2021/Jun/IRENA-and-the-UN-Agree-to-Advance-Renewables-in-Peacekeeping-Operations>.

9. UN Department of Peace Operations, “New Partnership for Renewable Energy in Peacekeeping Announced at UN Energy Summit,” 24 September 2021, <https://peacekeeping.un.org/en/new-partnership-renewable-energy-peacekeeping-announced-un-energy-summit>.

## ABOUT THE AUTHORS

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