

COMMON DONOR GREENING PRIORITY ACTIONS



PRIORITY ACTION 8

Phase out the use of fossil fuel generators where possible, reduce energy consumption and transition to renewable energy.

February 2026

The humanitarian sector is highly dependent on the use of diesel-powered generators to run its facilities and operations. A recent study indicated that over 11,000 diesel generators are operating globally, costing the sector over USD 100 million a year in fuel and maintenance and emitting close to 200,000 tonnes of CO₂-eq per year (equivalent to 70,000 Geneva-Nairobi return flights)¹. Generators are not only costly to operate but also create significant noise and air pollution, while retrieving fuel for them can put humanitarian workers at risk in volatile contexts.

Reducing energy consumption and transitioning from fossil fuels to renewable energy can help humanitarian organisations reduce their emissions and costs, while enhancing the resilience and sustainability of their operations.² Investing in solar-powered systems, for example, strengthens organisations' operational capacity by providing reliable energy in contexts where fuel supply chains are often disrupted by crisis and conflict, and where shortages can potentially jeopardise lifesaving assistance (such as the use of generators in critical medical settings).



KEY RECOMMENDATIONS

Reduce energy consumption

- ✓ Use monitoring tools, such as energy meters, to track and analyse generator usage, fuel consumption, and energy demand across operations, in order to identify opportunities for reduction or replacement.
- ✓ Implement measures to reduce energy consumption at both individual and organisational levels by investing in energy-efficient devices (e.g. light sensors or timers) and applying energy-efficient design principles when renovating buildings and warehouses (e.g. using white roofs to reduce air-conditioning demand). Reducing overall energy consumption also lowers the size and cost of the required renewable energy system, making this an effective and logical starting point.

Phase out the use of fossil fuel generators where possible

- ✓ Reassess the need to deploy new generators, considering these as a measure of last resort. Where this is unavoidable, ensure that generators are properly sized to match actual energy

¹ See Global Platform for Action and UNITAR "[Estimating the use of diesel generators in displacement settings](#)" and Glada Lahn & Owen Grafham "[The Cost of Fuelling Humanitarian Aid](#)" Chatham House, updated in 2020

² See, for example, [IOM in South Sudan](#), [Red Cross in Puerto Rico](#) and [Save the Children in Sierra Leone](#). See, also [how humanitarian actors are working to solarise existing diesel-based energy systems in five countries in the Sahel](#)

demand. Studies have shown that generators are often over-sized (i.e. too big for the activities they need to perform) causing inefficiency, waste and unnecessary maintenance costs³.

- ✓ Develop phased plans to replace diesel generators with solar or hybrid systems incrementally, prioritising sites/offices where the energy consumption and fuel costs are the highest and/or in countries with reliable solar production. Bear in mind that it is generally more feasible to implement energy transition measures in new projects than in existing operations.
- ✓ Choose the right financial mechanism (purchasing, leasing etc.) to support your organisation's energy transition (*see the Solar Energy Handbook, below, for more information*).
- ✓ Try to outsource energy provision to the private sector through Power Purchase Agreements (PPA) or leasing agreements⁴ so that private sector companies are responsible for operating and maintaining systems.

Ensuring the sustainability of the installation

- ✓ Ensure that the cost of maintenance plans - regular cleaning, monitoring, and repair - is included in contracts and budgets (budgeted for a minimum of 4-5 years). Consider that solar installations generally require lower maintenance and break down less often than generators.
- ✓ Train and hire staff and local communities to lead maintenance of renewable energy systems.



KEY RESOURCES

Solar Energy Handbook: A Guide to Institutional Solar for Humanitarian Settings

- **Organisation responsible:** KUBE Energy⁵
- **Short description:** the handbook supports humanitarian organisations in choosing solar energy solutions - including which financial mechanism to adopt to fund transition. It targets organisations relying on diesel generators in off-grid areas, and provides guidance on solar transition options, best practices for adoption, and the pros, cons, and economic considerations of each approach.
- **Accessibility:** English

Solar Assessment and Mapping Guidance

- **Organisation responsible:** WREC Coalition⁶
- **Short description:** This guide aims to support humanitarian organisations to assess the local solarisation capacity in their contexts. It includes a Solarisation Company Assessment form and practical guidance on how to assess potential suppliers. The WREC Coalition has also begun to map solarisation providers and to add this information to the interactive [LogIE](#) map (which also lists waste management and recycling facilities).
- **Accessibility:** English.

Energy Planning Tools for Humanitarian Practitioners

³ See, for example, Global Platform and UNITAR "The State of the Humanitarian Energy Sector: Challenges, Progress and Issues in 2022"

⁴ PPAs and leasing agreements both involve the system owner retaining responsibility for construction, maintenance, and ownership, while the purchaser benefits from the energy produced. They are flexible in form but typically include standard clauses on supply, conditions, and penalties.

⁵ Kube provides renewable energy services to communities, government agencies, international organisations and businesses operating mainly in Africa (<https://www.kubeenergy.com/about-us>)

⁶ WREC stands for Waste management and measuring, Reverse logistics, environmentally sustainable procurement and transport, and Circular economy. Coordinated by the Global Logistics Cluster, the WREC Coalition includes the Danish Refugee Council, the International Federation of Red Cross and Red Crescent Societies, Save the Children International and the UN World Food Programme.

- **Organisation responsible:** The Global Platform for Action on Sustainable Energy in Displacement Settings (GPA)⁷
- **Short description:** An overview of planning tools for humanitarian practitioners developing energy projects in displacement settings and decarbonising energy for their own operations (offices/warehouses).
- **Accessibility:** English.

De-risking Renewable Energy Contracts⁸

How to insure long-term activities in short-term funding? A Guarantee Mechanism in Humanitarian Energy Contracts

- **Organisation responsible:** The GPA
- **Brief description:** Webinar illustrating various examples of organisations having set up financial guarantees for their renewable energy provision projects.
- **Accessibility:** English

Ongoing Institutional Energy Transitions Initiatives: examples include

- [Norwegian Refugee Council's Capital Fund for Renewable Energy Transitions](#)
- [UNHCR's Green Financing Facility](#)

Climate Action Accelerator and Électriciens Sans Frontières; Solarisation Toolkit (2025)

- **Brief description:** Step-by-step guide to support organisations solarising premises or project facilities. It includes detailed recommendations on choice of equipment, sizing, maintenance etc.
- **Accessibility:** [English](#) and [French](#)



PITFALLS TO AVOID

- Do not overlook the long-term running costs of generators. Excluding these costs from budgets obscures their true lifetime cost and makes generators appear cheaper than renewable energy alternatives.
- Do not underestimate the potential impact of energy efficiency measures and behaviour change in reducing energy consumption. Alongside investment in solarisation, it is equally important to use energy responsibly.
- Do not underestimate the variability of the return on investment (ROI) for solar-powered systems. For humanitarian organisations, ROI can range from as little as one year to more than ten years⁹ and depends largely on fossil fuel prices in the country of operation. Higher fuel costs typically result in a faster ROI.
- Do not assume that switching offices or warehouses to renewable energy is always practical, because in some countries buildings already rely on the electricity grid rather than generators, and in others diesel power is cheaper and easier to use than renewable alternatives.

⁷ Humanitarian organisations are encouraged to leverage the resources, lessons learned, best practices and advice of [the Global Platform for Action \(GPA\) Coordination Unit](#) on how to decarbonise energy sources, improve facility and operational performance.

⁸ De-risking renewable energy contracts means making projects like solar, wind, or clean cooking safer and more financially reliable for both humanitarian organisations and energy providers. This is important for the private sector because it reduces risks such as unstable payments, poor equipment, unclear responsibilities, or fragile local conditions, making investments more secure and attractive.

⁹ GPA <https://unitar.org/sustainable-development-goals/peace/our-portfolio/global-platform-action-gpa-sustainable-energy-displacement-settings>



GOOD PRACTICES

- Consider hybrid systems combining, for example, solar and batteries and back-up generators.
- Where possible, consider sharing office space with other humanitarian organisations and UN agencies instead of each operating separate buildings: a larger and more stable combined energy demand makes solar projects more cost-effective and attractive for private investment.
- Identify and collaborate with other humanitarian organisations interested in renewable energy projects and submit joint proposals for this. This makes it easier to secure financial guarantees for renewable energy projects from donors, development banks, or insurers and reduces the perceived risks linked to projects, thereby encouraging private sector investment.
- Always include repairs and end-of-life considerations for solarisation systems in project budgets and plan for at least 4-5 years. This includes operational maintenance costs, spare parts and local capacity building to carry this maintenance out.
- Identify local expertise which can provide technical support and ensure the maintenance of the installations.

The INSPIRE+ Consortium is made up of IECAH, ODI, FAIREPROD and Groupe URD. It provides the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) with support in developing its policies via research, training, workshops and the dissemination of findings.