

UNDP Solar for Health Initiative

Information Note | August 2020



In 2017, UNDP spearheaded the Solar for Health (S4H) initiative as a means of connecting two vital sectors – energy and health – to help countries advance universal health coverage (UHC) while protecting the environment. Through the initiative, UNDP supports countries to install solar photovoltaic systems at health centers and storage facilities located in poor and hard-to-reach areas. To date, and largely funded through the Global Fund to fight AIDS, Tuberculosis and Malaria (Global Fund) as well as Innovation Norway, UNDP has supported the solar electrification of some 1,150 health centres and storage facilities in Zimbabwe, Sudan, Zambia, South Sudan, Namibia, Liberia, Libya, Malawi, Yemen, Angola, Nepal, Uganda, Chad, and Eswatini.

Objectives of S4H

The key objectives of S4H are to promote:

- **Quality health services:** Solar systems provide a stable, clean and reliable energy supply, even in the most remote locations, meaning more patients can access the health services they need. Quality healthcare requires a dependable source of power for multiple purposes, including temperature and hygrometry controls, adequate lighting systems, refrigeration, cold rooms and ICT networks for efficient stock and management of information.
- **Climate-resilient health systems:** Renewable energy is a means by which health systems can increase resilience to the challenges presented by climate change, including extreme weather events, droughts, and other events affecting the traditional power supply. The WHO Operational Framework for building climate-resilient health systems highlights the need to take a broader perspective to the challenge of climate change, including a focus on renewable energy in health facilities and using innovative technologies.
- **Reduced carbon emissions:** Energy access plays a vital role in enabling health care delivery, but it can also inflict significant environmental harm unless it includes an explicit focus on progressively shifting to renewable energy and substituting fossil-based sources. The decommissioning of highly polluting and noisy diesel generators considerably improves the local environment around health facilities. The installation of standardised solar PV systems under the Solar for Health initiative will also reduce greenhouse gas emissions by an estimated 250K tons per year.
- **Cheaper energy:** Solar energy results in lower power bills for health facilities. These vital budget savings can then be reinvested to support other priority health programmes or infrastructure. Solar power also generates a rapid return on investment. We estimate a 100% return on investment within 2-3.5 years, on average, when health facilities with unreliable energy sources are installed with solar power.

Components of S4H

Key elements of UNDP's support to countries through S4H include:

i. Supply of solar equipment and installation support

UNDP equips health care and storage facilities with solar panels that can be stand-alone, if there are no short-term prospects to be networked, or grid-connected. It supports countries to procure different sizes of solar photovoltaic systems for different levels of the health care system, based on the energy needs (e.g. health posts, health centers, district hospitals, regional hospitals, regional medical stores).

UNDP has developed standardized S4H equipment lists with specifications and has established long-term agreements (LTAs) with suppliers in Africa, Asia, Europe, and the Middle East, for specific solar energy photovoltaic systems' equipment. The LTAs encompass provisions for customized solutions to match specific load requirements, ranging from small kits for standard primary health care facilities to complex photovoltaic plants (single-phase to three-phase) for large health structures such as warehouses and hospitals, including tailor-made systems for critical departments like maternity, pharmacy, surgery, and laboratory.

ii. Maintenance, technology transfer, and institutional capacity development

National ownership, effective management, and maintenance are critical to ensure the sustainability of investments in S4H. UNDP therefore focuses on capacity building to foster ownership at the national level, complemented by the provision of tools and systems to enable regular monitoring and follow up to issues at equipped facilities. It supports the establishment of real-time monitoring systems to allow personnel to monitor the performance and usage of the solar panel installations remotely.

Capacity development activities include training on equipment maintenance for health personnel at supported facilities. UNDP can also support to strengthen the policy and energy regulatory framework by identifying gaps in regulation or incentives for renewable energy uptake, and providing technical support (e.g. through trainings) to strengthen the policy environment. It also works with countries to identify opportunities for private sector engagement and strengthening the enabling conditions to foster markets for decentralized o -grid energy solutions.

S4H interventions likewise offer opportunities to invest in individuals and create 'green jobs' for local communities. Working with local and regional partners, UNDP supports training, particularly for rural women, to build, install, maintain, and repair solar electrification systems in off-grid villages.

iii. Solar energy promotion and awareness raising

As reaffirmed through lessons learned from the implementation of S4H to date, key to sustainability are sensitization activities at health facilities and their surrounding communities to communicate the importance of maintenance and protection of the solar panels. UNDP can support with the implementation of community engagement strategies, which could include: i) Creation of a community volunteer committees to oversee the maintenance of the solar equipment at public hospitals and health facilities; and ii) Promotion of solar energy through the media by audio and visual messages to promote the solar energy beyond the public health sector. It is important to promote the concept of renewable energy for local market transformation and creation of green jobs.

iv. Regulatory and policy framework setting for solar energy provision

To enable the access of health facilities to low-carbon (solar) energy solutions also requires building solid policy and regulatory frameworks. Without these frameworks, the rules around the provision of solar services for health and associated facilities are unclear, making the future scale up of the solutions less likely or more challenging. This can be overcome through a targeted technical assistance UNDP has been providing in a number of countries.

v. Understanding the climate change – energy – health interlinks

National health policies, strategies and plans seldom consider climate change impacts on health as a key driver of resource planning and investment needs. Taking a sectoral approach that fails to integrate climate change and health related policies and strategies will have a significant bearing on future investments in climate resilient health infrastructure, such as affordable, reliable clean energy, hygienic healthcare facilities, data and health-climate information systems, capacities of personnel at all levels, and last mile interventions that will benefit the most vulnerable communities. UNDP support knowledge building to achieve deeper understanding of the links between climate change, health and the need for energy solutions.