



*Empowered lives.  
Resilient nations.*

# Solar for Health

Saving lives

Saving money

Saving the environment

## Introduction

Health facilities need power. Clinics, maternity wards, surgery blocks, medical warehouses, and laboratories rely on electricity to power the lights, refrigerate vaccines, and operate life-saving medical devices. The inability to carry out these basic functions puts lives at risk. Yet all too often, particularly in remote areas, health facilities face significant power shortages. A 2014 World Health Organization (WHO) review revealed that one in four sub-Saharan health facilities had no access to electricity, while only 28% of health facilities and 34% of hospitals had what could be called “reliable” access to electricity (without prolonged interruptions in the past week).

UNDP supports governments to improve the quality of health services through the installation of solar energy photovoltaic systems (PV), ensuring constant and cost-effective access to electricity while also mitigating the impact of climate change. Building on our experience and expertise in delivering large, complex health programmes for the Global Fund and other partners, UNDP is currently working to install solar systems in health facilities across Africa, the Arab States and Central Asia.

## Contribution to Sustainable Development Goals (SDGs)

Solar for Health is making a significant contribution to the 2030 Agenda for Sustainable Development adopted by world leaders at the United Nations. Specifically, it can help countries in their efforts to achieve SDGs 3, 7, 13 and 17: good health and well-being, affordable and clean energy, climate action and partnerships. Broader development benefits include the creation of green jobs and the development of local manufacturing and markets for solar power.



# Impact

## Quality health services

Solar systems provide a stable and reliable energy supply, even in the most remote locations, meaning more patients can access the public health services they need. As a dependable source of power, solar systems also support the delivery of high quality health services by ensuring the reliable running of temperature and hygrometry controls, adequate lighting systems, refrigeration and cold rooms and IT networks for efficient stock and management information systems.

## 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 wider perspective to the challenge of climate change, including a focus on renewable energy in health facilities and utilizing innovative technologies.

## Reduced carbon emissions

Energy plays a vital role in enabling health care delivery but it can also inflict significant environmental harm. The decommissioning of highly polluting and noisy diesel generators considerably improves the local environment around health facilities, while the installation of solar systems also reduces 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 per cent return on investment within 2 to 3.5 years when health facilities with unreliable energy sources are installed with solar power.

## **UNDP Delivers**

Investments in Solar for Health are dependent upon the quantity of solar equipment required for the facilities. As an estimate, an investment of US\$ 100,000 could provide solar facilities for 7 rural primary health facilities. On the other hand, an investment of US\$ 50 million could provide solar facilities for half of the health facilities in a medium sized country. In addition, UNDP also provides technical and capacity development support, while ensuring country ownership of the project and the potential for future scale-up.

### **Programme management and technical support**

We provide a dedicated specialist team to work in close collaboration with the government, national supply chain implementers and the private sector. This core team of experts includes a project manager, a finance and procurement officer and an engineer, with additional human resources brought in as required.

### **International quality assurance**

Our significant expertise in providing project quality assurance means we have experienced teams who can deliver day-to-day assistance, while also coordinating between countries, acting as link with donors and consolidating reports and assisting in developing standard procurement contracts.

### **Standardized or tailor-made solutions**

For standard primary health care facilities, we can procure plug and play units of 5 to 15 KW, which ensure easy implementation and fast, cost-effective installation. For hospitals and other large health structures we will deliver personalized equipment from a standard reference list.

### **Scalable solutions**

Solar for Health is designed to ensure flexibility, meaning that it can be initiated with relatively small contributions and scaled up as funding becomes available.

## Solar for Health Projects

### Supporting HIV clinics in Zimbabwe

HIV clinics across Zimbabwe will be soon be equipped with solar power. Many clinics currently depend on four hours of unstable power supply a day but with solar installations they will have power 24/7 and patients can get the care they need, when they need it. Where solar systems have already been installed, clinics are now capable of increased and improved services. The energy generated is used to maintain the quality of medicines and laboratory reagents. Equipment sterilization has improved and cold-chain for vaccine storage is safely maintained. Solar panels also enable water pumping and facilitates water purification – a pivotal achievement in a country in which water-borne diseases are the major killers of children.

### Effective warehousing in Zambia

In Zambia, UNDP has been working in close partnership with Medical Stores Limited (MSL), an autonomous government agency mandated to receive, store and distribute pharmaceutical health products across the country. MSL has faced regular power interruptions in the past, affecting the effective running of warehouses, including the refrigeration of medicines and vaccines. With funding received from the Norwegian Emergency Preparedness System (NOREPS), UNDP has supported MSL to install a solar powered energy system, combined with an energy efficient temperature control system covering 3000 m2 storage space. With the solar panels in place, MSL can ensure the effective running of its operations, even when there is no power from the national hydro-powered grid. This is vital to ensuring quality health services to the Zambian population, as interruptions in power supply had previously led to delays in the processing of requests from health facilities across the country. Furthermore, the solar power system has also ensured cold chain pharmaceutical items remain stored at the desired temperatures.

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