

Going for Scale: Digitalisation in Healthcare



Project	Energising Health
Objective	Improve cold chain of vaccines and provide basic electricity for over 1,200 health facilities
Countries	Ethiopia, Liberia, Malawi, Mali, Senegal
Technology	Vaccine refrigerators, Solar Home Systems
Project period	06/2022–12/2024
Budget	EUR 10 million
Donor	BMZ (Germany's Last Mile Initiative)
Partners	Ministries of Health and Ministries of Energy of the respective countries

Implementation highlights	<ul style="list-style-type: none">• Developed key digital tools• Centrally procured in under six months• Identical technologies across all facilities and countries streamline operation and promote economies of scale• Virtual verification reduces verification costs by up to 80% while maintaining high installation quality
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Improving delivery of health services

EnDev's Energising Health initiative significantly enhances healthcare delivery in sub-Saharan Africa by addressing critical energy needs in rural health facilities. In 2023, EnDev successfully installed solar-powered, WHO-certified vaccine refrigerators and solar power systems in over 1,200 health facilities across Ethiopia, Liberia, Malawi, Mali, and Senegal.

This achievement not only ensures efficient vaccine distribution, including for Tuberculosis, Hepatitis, Yellow Fever, and Covid-19, but also extends the capacity to cool various medical products, thereby elevating healthcare services.

By providing solar home systems for lighting, communication, and medical device charging, EnDev bridges significant gaps in healthcare delivery, benefiting both patients and medical staff. This initiative aligns with Sustainable Development Goals (SDG) 3 and 7 by promoting healthy lives and ensuring access to affordable, reliable, and sustainable energy.

Digitalising for scaled energy access

Digitalisation is crucial for improving energy access, and EnDev's Energising Health project exemplifies this potential. By incorporating digital technologies, EnDev has revolutionised energy solutions for rural health facilities in sub-Saharan Africa. The project employs real-time data transmission and cloud-based photo documentation systems for remote monitoring, ensuring high-quality installations and efficient maintenance. This digital approach not only streamlines operations but also enhances scalability and sustainability. Through these advancements, EnDev demonstrates its commitment to fostering sustainable development and resilience in remote areas, showcasing the transformative impact of digitalisation in the energy sector.

Maximise efficient implementation and sustainable operation

Scaled implementation demands efficient verification of numerous installations. Traditionally, inspectors travel to remote, often difficult-to-access locations to identify systems

in need of improvement. In the Energising Health project, all systems are equipped with GSM communication units to transmit location and operational data 24/7. A cloud-based photo documentation system, combined with remote monitoring, tracks installation progress and quality.

This triggers a virtual verification process where approximately 80% of systems are verified virtually using "stratified random sampling." This method allows inspectors to randomly select installations for physical inspection based on system complexity and the technical expertise of installation teams. As a result, installers cannot anticipate which sites will be inspected, ensuring unbiased quality assessments.

The virtual verification tool enables the efficient verification of hundreds of installations 'from the desk' delivering significant time and cost savings while maintaining consistent quality. Remote monitoring facilitates sustainable operation, predictive, and preventive maintenance. Alarm messages sent via SMS or email notify operators and healthcare staff of issues. The monitoring platform supports remote diagnostics and enhances spare parts logistics, minimising downtime.



Further scaling

For future energy access projects, a digital planning platform hosted by the partner government and accessible to donors is essential. It enables 24/7 monitoring for sustainable operation, accurate needs analysis, coordinated asset expansion, and avoids effort duplication. The project's scalability potential can easily extend to areas like school and community electrification.



Transforming Vaccine Storage: The Impact of Solar Refrigeration in Rural Senegal

In the remote village of Dayane Kadiolé, Senegal, Malick Mbaye, Head Nurse at the local health post, has seen a significant improvement in vaccine storage with the introduction of a new solar-powered refrigerator. Previously, Malick faced challenges with inadequate storage, relying on a cooler and ice from a village 5 km away. This often resulted in vaccines becoming unusable and delayed immunisation for children, as he had to order them from distant health centres.

With the new solar fridge, Malick says, **"Today, with the arrival of the solar refrigerator, I can preserve vaccines much better, there are no more unusable vaccines, I no longer need to buy ice, and I receive a batch of vaccines every month. Additionally, with the lighting, there is increased security."** The reliable refrigeration has streamlined vaccine management, enhancing both the safety and effectiveness of healthcare in the community.

Funded by:



Ministry of Foreign Affairs of the Netherlands



Coordinated by:



Published by:

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As of: August 2024

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