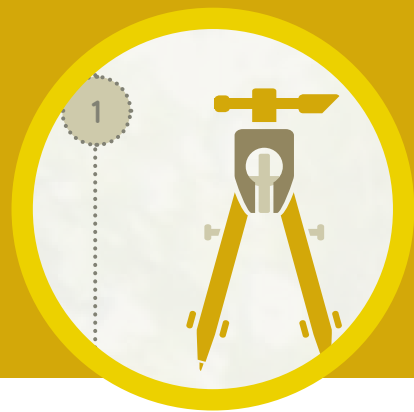


SOLAR DIRECT DRIVE: A BETTER CHOICE FOR LAST-MILE COOLING



What you should know about solar direct drive refrigerators:



For health facilities lacking reliable access to electricity, solar direct drive refrigerators are currently the most cost-effective option over the life of the refrigerator when comparing similarly sized units used in off-grid settings.



Solar direct drive refrigerators do not require expensive batteries to store electricity, which typically require replacement after five years.



Ongoing maintenance costs for solar direct drive refrigerators are relatively small compared to solar refrigerators with battery and absorption refrigerators.



Proper site selection, professional installation, and ongoing monitoring and maintenance have been identified as critical components of a successful solar refrigeration program.



RELEVANT RESOURCES

RESOURCE TYPE	TITLE	ORGANIZATION
Evidence brief	Direct-drive solar vaccine refrigerators—a new choice for vaccine storage <small>AVAILABLE AT: www.path.org/publications/detail.php?i=2336 OR: www.who.int/immunization_delivery/optimize/resources/en/index1.html</small>	WHO and PATH
Evidence brief	Unplugged and keeping cool: testing off-grid storage solutions in Vietnam <small>AVAILABLE AT: www.path.org/publications/detail.php?i=2270 OR: www.who.int/immunization_delivery/optimize/resources/en/index1.html</small>	WHO and PATH
White paper	Stimulating innovation in the vaccine cold chain equipment industry <small>AVAILABLE AT: http://www.path.org/publications/detail.php?i=2359 OR: www.who.int/immunization_delivery/optimize/resources/en/index1.html</small>	WHO and PATH
Photo book	Installing and testing battery-free solar refrigerators in Vietnam <small>AVAILABLE AT: www.path.org/publications/detail.php?i=2309 OR: www.who.int/immunization_delivery/optimize/resources/en/index1.html</small>	WHO and PATH
Article	Using solar-powered refrigeration for vaccine storage where other sources of reliable electricity are inadequate or costly <small>AVAILABLE AT: www.sciencedirect.com/science/article/pii/S0264410X13010670</small>	Vaccine Journal



WEBSITES OF ORGANIZATIONS WORKING ON THIS ISSUE

World Health Organization (WHO) Performance Quality and Safety	http://apps.who.int/immunization_standards/vaccine_quality/pqs_catalogue/
PATH	www.path.org/projects/cold-chain.php
WHO	www.who.int/immunization/en/
United Nations Children's Fund Cold Chain Logistics Task Force	www.unicef.org/immunization/index_42071.html
Bill & Melinda Gates Foundation	www.gatesfoundation.org/What-We-Do/Global-Development/Vaccine-Delivery
GAVI Alliance	www.gavialliance.org