Aga Khan Health Services

Afghanistan: Installation of solar refrigerators in health facilities across five provinces

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In order to support the Expanded Program on Immunization (EPI) in remote areas of Afghanistan, where electricity is either not available, or inconsistent; the Aga Khan Health Service, Afghanistan (AKHS, A), recently installed solar refrigerators.

Previously, these facilities used Liquid Petroleum Gas (LPG) – based refrigerators to store vaccines. This approach was expensive and LPG supplies were variable. Since 2022, AKHS, A began installing solar direct-drive (SDD) refrigerators. This innovation resolved challenges associated with off-grid vaccine refrigeration, allowing national immunisation programs to extend services to even more remote and underserved areas.

Furthermore, these fridges are more environmentally friendly as they use R600a (Isobutane) as a refrigerant, which has a relatively low global warming potential. Each refrigerator is served by two solar panels which provide the necessary power and real-time remote-control technology to allow for monitoring vaccine storage conditions.

A total of 309 solar refrigerators have been installed in 309 EPI centres operated by AKHS, A across five provinces: Badakhshan, Bamyan, Takhar, Baghlan, and Kabul. This initiative is expected to save approximately USD 54,031 annually from avoiding the need to purchase LPG and prevent the emission of around 131 tons of CO2e. Carbon emissions were calculated using the AKDN carbon management tool.









Solar refrigerators installed at AKHS, A -EPI centres