Aga Khan Health Services

Pakistan: Aga Khan Health Services – Chatorkhand Basic Health Centre

Building a Climate-Resilient, Low-Carbon Basic Health Centre through Solarisation and Insulation

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The Aga Khan Health Services, Pakistan (AKHS, P), is committed to reducing carbon emissions and achieving net zero by 2030. The AKHS, P operates on a hub-and-spoke model, with most of its basic health centres located in remote areas of Gilgit-Baltistan and the Chitral region. These areas experience harsh environmental and climatic conditions. At the Aga Khan Basic Health Centre in Chatorkhand (Chatorkhand BHC), the power supply from the national grid was inconsistent, and power quality voltage and frequency were unreliable. Due to the lack of insulation, winters were especially challenging, with temperatures often dropping below freezing. Although shorter than the winter months, summers were also extremely hot. To cope with these conditions, the facility previously relied on a mix of energy sources, including unreliable grid electricity, a diesel generator, and the burning of wood.

To address these challenges and in line with the AKHS net zero carbon emission 2030 target, in August 2023 the facility was solarised with a 10-kW solar system and 10 kWh battery storage, along with insulation improvements. This initiative served as a pilot project, paving the way for similar interventions at another 4 other basic health centres in the region. Based on the successful implementation, another 30 centres will be solarised and insulated in 2025 / 2026.

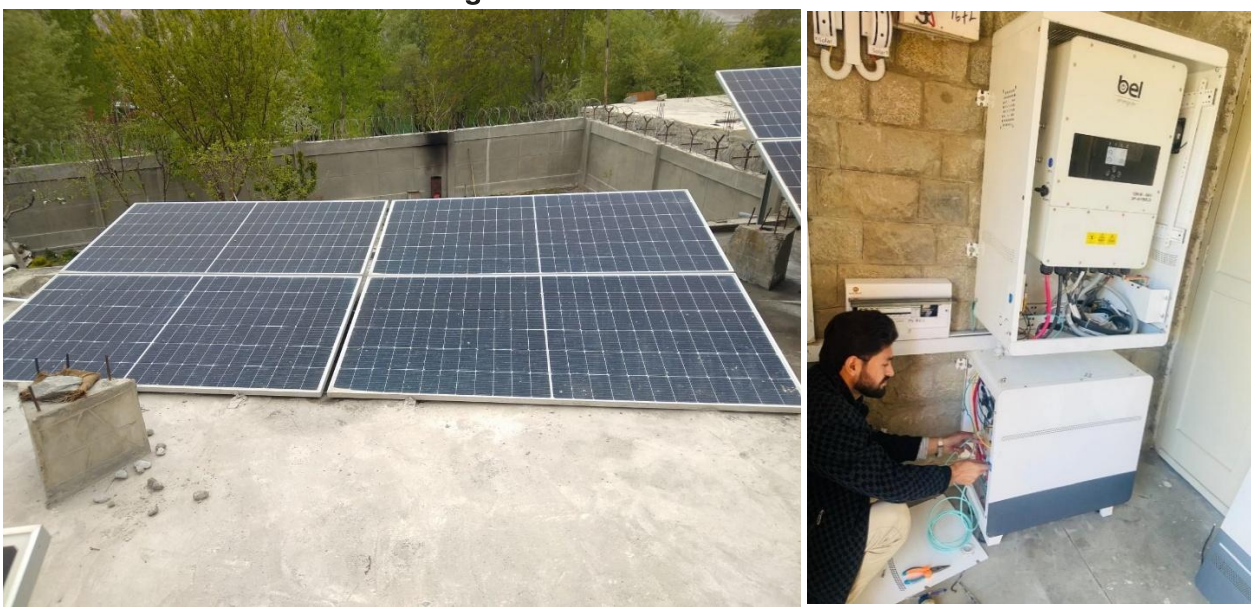

Figure 1: Solarisation of the Chatorkhand BHC

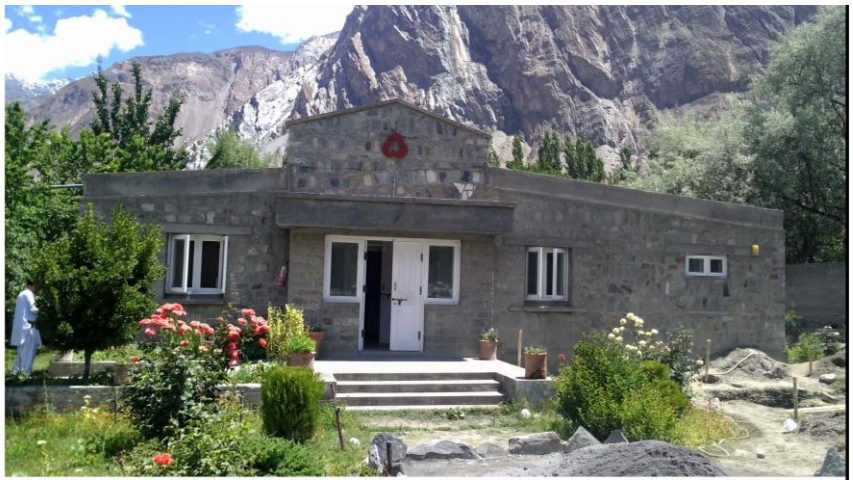

Figure 2: The Chatorkhand BHC before insulation

Figure 3: The Chatorkhand BHC after insulation.

BHC Chatorkhand is located centrally in Ishkoman valley and serves around 20,000 population. In terms of distance, it is around 1.30 hours from Singal (40 kilometers), the nearest Comprehensive Health Centre (with general physician based services) 4 hours' drive (102 kilometers) from the Aga Khan Hospital Gilgit, the regional hub (offering many specialist services). Given the unreliable grid conditions prior to installation, the solar system has played a critical role in meeting energy demands and reducing dependence on fossil fuels. The overall outcome of the project was highly encouraging. Staff reported noticeable improvements in indoor temperatures, even during extreme winter and summer seasons. Power availability and quality also improved significantly. With an annual solar power generation of approximately 9,000 kWh, the facility's reliance on grid electricity has decreased by 95%, and the use of diesel generators has become negligible. This has resulted in the avoidance of approximately 4 tonnes of CO_2e emissions annually.

Carbon emissions were calculated using the AKDN carbon management tool.