



# Solar energy for the environment afghanistan

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By harnessing solar energy, the initiative improves access to reliable and sustainable electricity, positively impacting communities, and the environment. Continued support and investment in sustainable energy solutions are essential for driving positive change and illuminating Afghanistan's future.

The Renewable Energy Roadmap for Afghanistan is developed to realize the vision and intent of the Renewable Energy Policy (RENP) for Afghanistan that sets a target of deploying 4500 - 5000 MW of renewable energy (RE) capacity by 2032 and envisions a transition from donor grant-funded RE projects to a fully-private sector led industry by 2032.

Renewable energy in Afghanistan includes biomass, geothermal, hydropower, solar, and wind power. [1][2][3][4][5] Afghanistan is a landlocked country surrounded by five other countries. With a population of less than 35 million people, it is one of the lowest energy consuming countries in relation to a global standing. [6]

Developing water, solar and wind power could reduce Afghanistan's import of electricity from abroad and help it emerge a regional renewable energy hub.

Afghanistan has excellent solar resources and large land-areas where solar can be deployed. Long-term yearly average of daily totals of global horizontal irradiation (GHI) in kWh/m<sup>2</sup>. Output from the global solar model SolarGIS derived from satellite digital images and atmospheric datasets.

Posted on 17/04/2009 by Ian MacWilliamSource: Afghan Update (UNAMA quarterly magazine)

The district of Surkh-e-Parsa lies at the upper end of the Ghorband Valley, not far from where the road begins to climb the bare hills to the Shibar Pass. Three green valleys converge at the district centre of Lolinj. The local people grow wheat and tend their fruit trees, but they have always been poor. For them, even before the war, the notion of electricity was a distant dream. The nearest government hydropower station was in Siahgird, far down the valley, and that was destroyed many years ago. For the people of these valleys, when the sun set, the day ended and they had little choice but to settle down for the night.

But in recent years, all that has changed. About seventy per cent of households in the three valleys - home to some 30,000 people -- now have electricity. Now there is light to allow children to study and people can continue their lives after sunset. The electricity runs flour mills, charges mobile phones and powers satellite television, which brings news of the outside world into this distant corner of Afghanistan. During the day it can also run washing machines and other labour-saving household devices.



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This new electric power produces few greenhouse gases. It is relatively cheap and its production is sustainable, relying on simple technology which can be maintained by local people with some training. The source is a network of small hydroelectric and solar power units installed by the Aga Khan Foundation, one of nine international development agencies which make up the Aga Khan Development Network (AKDN). (Within AKDN, the Foundation specialises in rural development programmes.)

Elsewhere, in the town of Sheghnan in a remote part of Badakhshan, the local teacher training college built by AKDN is also supplied with clean, cheap renewable energy, in this case by a 15-kilowatt solar power unit. With no all-season road connection to the rest of Badakhshan, Sheghnan, on the Amu Darya, is isolated for much of the year. The town has never had government electricity. Until the solar unit was installed in 2007, the college used diesel generators, with all the usual problems of expense, pollution and shortages of fuel. Now the sun provides power for lighting, computers and other purposes in the main teaching centre as well as in the attached men's and women's hostels. Batteries store the solar electricity by day to ensure that electricity is available round the clock.

AKDN has been pioneering micro-hydroelectric power (MPH) units and solar power in Afghanistan since 2004. Some 250 MPH units have been installed or are currently under construction in five provinces across northeastern Afghanistan: Bamyan, Parwan, Baghlan, Takhar and Badakhshan. Solar power, 170 units have been installed. These projects now supply electricity to villages which would otherwise have no access to power.

These power projects have mostly been carried out by the local communities themselves under the government's National Solidarity Programme, with AKDN support. Local Community Development Councils established under NSP receive a grant which they can spend on development projects. Electricity is usually a priority for the councils. AKDN then helps the community, providing engineering expertise, essential contacts and organisational support to build the required power unit and to train local people who can maintain it and organise its upkeep.

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