Kabul renewable energy growth

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The renewable energy resource potential of Afghanistan is estimated at over 300,000 MW according to the state"s Ministry of Energy and Water.[7][2] The country currently spends around $280 million on importing 670 MW of electricity from neighboring Iran, Uzbekistan, Tajikistan and Turkmenistan.[8][1]

Another form of renewable energy in Afghanistan is biogas.[9] With the start of biogas, communities have begun to feel the benefits beyond that of the environment through capacity building as well.[9]

Afghanistan has the potential to produce about 4,000 MW of power through biomass.[7][2] Traditional biomass energy has supplied up to 90% of energy demand,[10] such as from firewood and dung.[11][9][12]

UNEP is pleased to endorse the vision and mission of the Biogas Consortium Afghanistan. The majority of the population of Afghanistan uses firewood and coal for their cooking and heating needs; more sustainable energy options are required. [...] UNEP has committed to providing higher-level guidance, helping the consortium align its activities towards national policies and strategies. UNEP shall also advocate the benefits and studies that arise from the consortiums work in biogas in Afghanistan[15]

An area of vast untapped potential lies in the heat energy locked inside the earth in the form of magma or dry, hot rocks. Geothermal energy for electricity generation has been used worldwide for nearly 100 years. The technology currently exists to provide low-cost electricity from Afghanistan"s geothermal resources, which are located in the main axis areas of the Hindu Kush. These run along the Herat fault system, all the way from Herat in the west to the Wakhan District of Badakhshan Province in the far northeast.

With efficient use of the natural resources already abundantly available in Afghanistan, alternative energy sources could be directed into industrial use, supply the energy needs of the nation and build economic self-sufficiency.

Hydropower and hydro-energy are some of the best energy options in the country. The geographical location of Afghanistan is extremely mountainous which makes the implementation of hydropower an easier choice.[16]

The current system in place though it works well, is not without its flaws. As Yasah et al. contend, "the common strategy is currently to build micro-hydropower facilities to power single bulbs and maybe a water boiler for the whole community. Such constructions will not deliver sufficient power for electric ovens etc., grid electricity will not stretch out to the rural areas of Afghanistan in the near decades."[17]

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Afghanistan has the potential to produce over 23,000 MW of hydroelectricity.[18][19][7][2] The country has significant hydro resources with the river catchment area of 677,900 km2, annual average rainfall of 300 mm and widespread hilly topography.[6]

The report also stated that Afghanistan has the potential to produce around 68,000 MW of electricity by installing and using wind turbines.[24][7] Wind power is not the commonly used method in Afghanistan for renewable energy though there are vast opportunities. It is believed that the areas which would produce the most wind energy and would benefit the most are in western Afghanistan,[25][26] and some areas in the country"s north as well.[27]

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The project will generate at least 43,000 megawatt-hours of solar power and avoid at least 13,000 tons of carbon dioxide equivalent in the first full year of operation.

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