

Chad solar panels

Djermaya Solar Power Station (DSPS) is a planned 60 MW (80,000 hp) solar power plant in Chad. The solar farm is under development and is owned by a consortium comprising (a) Aldwych International Limited, a subsidiary of Anergi Group (working on behalf of InfraCo Africa) and (b) Smart Energies. The power station will be developed in phases. Phase 1, with capacity of 32 megawatts will be developed first. Phase 2, with capacity of 28 megawatts will be developed after Phase 1.

The power plant is located southwest of the town of Djermaya, approximately 30 kilometres (19 mi), north of N'Djamena, the capital and largest city in the country. The project site measures about 100 hectares (250 acres), in the vicinity of Djermaya. The project site is uninhabited, prior to installation of the power station.

There are three main objectives in the development of this solar farm. The first objective is to increase the grid supply of electricity in Chad. Secondly, Chad depends primarily on electricity derived from expensive fossil fuel-fired installations. DSPS diversifies generation to include green renewable energy. Thirdly, the project involves the improvement of the transmission network, by strengthening the transmission between N'Djamena and Djermaya.

The development involves construction of a 32 megawatts solar farm. It also includes the construction of a new 18 kilometres (11 mi) 33kV transmission line from the power station to the electricity substation at Lamadji, in northern N'Djamena. Two new transformers, each rated at 33/90kV, will be installed at the substation at Lamadji. Later, the solar farm will be expanded to capacity of 60 megawatts, by the addition of 28 megawatts in new capacity.

This power station is owned by a consortium whose members are illustrated in the table below. The members of the consortium are expected to form a special purpose vehicle company, which for descriptive purposes, we will call Djermaya Solar Company, which will operate and manage the power station.

In July 2020, armed with a 25-year power purchase agreement, the owners of Djermaya Solar Company advertised for qualified contractors to bid for the engineering, procurement and construction (EPC) contract, for the first phase (32 MW).

In May 2023, the owner/developer consortium selected Elsewedy Electric of Egypt as the EPC contractor. The capacity of the first stage was increased to 36 megawatts and the design was changed to include an 8 MWh electricity storage system. Work also involves the construction of two 25 MVA (90 kV) power transformers and a 33 kV overhead transmission line to the substation at Lamadji, near N'djamena.

The project has received partial funding from the African Development Bank, the European Union-Africa Infrastructure Fund, the Emerging Africa Infrastructure Fund and Proparco. Total cost has been budgeted at EUR60.3 million (approx. US\$70.9 million).

According to the World Bank, only 11 % of the Chadian population has access to electricity, with a significant gap between rural areas (1%) and urban areas (20%). Chad has one of the lowest rates of access to electricity in the world. Paradoxical situation regarding the natural resources available to the country, especially oil and renewable energies.

Indeed, Chad enjoys an exceptional sunshine rate of 2,000 to 2,600 hours per year. Some regions also offer very interesting wind speeds. Despite these resources, electricity remains very scarce in Chad, making it one of the most expensive in the world.

Today, apart from the 1 MW wind power plant (composed of 4 wind turbines) in Amdjarass, a town in the east of the country, electricity is only supplied by generators, which regularly break down. Oil, which is used to run these generators, is expensive and highly polluting energy. This situation hampers the socio-economic development of the country and affects the quality of life of the population.

In this context, the use of renewable energy is the ideal solution. The other advantage would be the preservation of the environment, important in a semi-desert country like Chad.

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