

# Dashoguz Power Plant

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The 250-MW Dashoguz Power Plant is one of the largest power plants in Turkmenistan.. Located in Dashoguz province and planned to increase the national power generation by approximately 10%, this power plant was equipped with generator systems designed by Teksan Jeneratör.

**Sector:** Energy

**Project Type:** Synchronization system with black-start function.

## Customer's requirements

Undertaken by Çalık Energy Group, this project consisted of two turbines running on natural gas, each having a rating of 160 MVA and an annual power generation capacity of 1,000,000 kWh. Most of Dashoguz province is desert, therefore the power plant needed a black-start generator system resisted against the harsh local climate, switching on the starter motor if and when the power network fails, and meeting the internal demand of the power plant.

## Solution developed by Teksan Jeneratör

Standby power for the power plant is generated by 2 units of 2,100 KVA generator sets synchronized with each other and installed in cabins. Having black-start function, these generator sets generate power for the starter motors of the gas turbines, each having a rating of 1,000 kW and 6.6 kV, and for the internal demand of the power plant, if and when the power network fails. The professional teams of Teksan Jeneratör designed and manufactured these generators in such a manner to ensure them to transfer their load without interruption when the power

plant is reactivated and to switch off automatically. These generators generate 400 V, said tension is raised to 6,600 V by the energy transformers, then the generators shift to automatic synchronized operation mode and generate the 4 MVA power needed by the power plant to switch on one of its turbines.

Taking into consideration the harsh climatic conditions of this region, these generators were equipped with PLC automation system, synchronized with each other, installed in cabins, and equipped with such supplementary equipment as crankcase heaters, dehumidifiers and fuel pre-heaters.

## Results obtained

Measures were taken against the local climatic conditions, and this synchronized system was installed with black-start function in such a manner to prevent interruptions at this power plant.