PV-Heavy Fuel Oil Hybrid Power Plant

ESSAKANE, BURKINA FASO

PROJECT DATA SHEET

Courtesy of Wärtsilä

AT A GLANCE

Total Eren & AEMP
DEVELOPERS

Wärtsilä
EPC

+130,000 FS4
MODULES

15MW (DC) PV + 57MW HFO
PROJECT SIZE

~27GWh
ANNUAL OUTPUT

6 million litres
HFO SAVED PER YEAR

18,500 tons
ANNUAL CARBON FOOTPRINT REDUCTION

Powered by First Solar's high-performance photovoltaic (PV) modules, the Essakane solar power plant in Burkina Faso is the world's largest hybrid PV-Heavy Fuel Oil (HFO) facility.

The project, developed and financed by Total Eren and Africa Energy Management Platform (AEMP), and engineered and constructed by Wärtsilä, is located 330-km northeast of the country's capital, Ouagadougou.

Since being commissioned in March 2018, the 15-megawatt (MWDC) solar power plant supplemented an existing 57MW HFO plant, generating 27 gigawatt-hours (GWh) of clean solar electricity in its first year. The facility supplies clean energy to the IAMGOLD Essakane S.A. gold mine, Burkina Faso's largest privately held business, under a 15-year Power Purchase Agreement (PPA). Before the completion of the PV facility, the HFO plant was the mine's sole source of electricity.

The remote mine, which produced 377,000-attributable ounces of gold in 2016, is located 42-kilometers from the nearest large town and is not connected to the country's electricity grid. Therefore, the mine is entirely reliant on the power generated by this hybrid facility to ensure uninterrupted operations.

The plant uses over 130,000 First Solar modules, delivering over seven percent more energy than crystalline-silicon (c-Si) panels in the rugged operating environment in north-eastern Burkina Faso, where temperatures far exceed 25° Celsius in summer.

The hybrid facility also sets a benchmark for carbon reduction initiatives in the mining industry, displacing the need for approximately six million liters of HFO per year, reducing the mine's carbon footprint by nearly 18,500 tons and partly insulating it from the effects of fuel-price volatility.