Thabazimbi | South Africa

HYBRID ENERGY SUPPLY FOR A CHROME ORE MINE

Minimize Fuel Costs and CO_2 Emissions with

Solar Diesel System Technology

Thabazimbi is a sparsely populated region in the South African province of Limpopo characterized by mines. The power distribution grid is far away, grid connection is limited, and transport of diesel fuel is expensive. With a high amount of solar irradiation, the region is ideally suited for the use of PV energy.

Since November 2012, a PV system with a power of one megawatt has complemented the existing diesel energy supply at a chrome ore mine. Using up to 1.8 gigawatt hours of solar energy per year, the mine operator Cronimet Chrome Mining SA (Pty) can significantly reduce fuel costs and CO_2 emissions. The scalable PV system consists of PV modules, Sunny Tripower PV inverters, and an intelligent control unit, the SMA Fuel Save Controller. Solar and diesel generators are controlled depending on the load and generation profiles. The mine operator can thus minimize fuel dependency during the day.

Plant Size

- Installed PV power: 1 MW
- Nominal power of 63 x Sunny Tripower 17000TL: 1071 kVA
- Nominal power of diesel generator: 2 x 800 kVA

Information on the Plant

- Thabazimbi, Limpopo Province, South Africa
- Coordinates: 24° 36′ S, 27° 23′ E
- Operator: Cronimet Chrome Mining SA (Phy) Ltd.
- Planning and realization: Solea AG, Solea Renewables (Pty) Ltd.

- Date of commissioning: November 2012
- Solar irradation: 1.840 kWh/kWp
- Fuel reduction: up to 450,000 L of diesel per year

Inverters

- 63 x Sunny Tripower 17000TL
- Fuel Save Controller

SMA Fuel Save Solution for Solar Diesel Hybrid Systems

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