RAACH SOLAR
DESIGNING PHOTOVOLTAIC POWER

PRESS RELEASE

80kWp Grid Connected Photovoltaic Power

Abidjan, Côte d'Ivoire, 24.11.2017

RAACH SOLAR commissions 80kWp grid connected photovoltaic power system for the industrial company JMK PRESSING INDUSTRIES..

After six months of engineering, procurement, delivery, import and installation, RAACH SOLAR commissions a 80kWp photovoltaic for own consumption and connects it to the electric grid on an industrial building in the Ivorian economic capital Abidjan.

HECKERT SOLAR modules arrangement on SCHLETTER support structure as seen on West roof

Technical Background

"The project was difficult to design and implement. The industrial complex consists of two factory buildings and the solar generator was split among six different SMA inverters to balance the different roof orientations, tilt angles of the roof and shadowing" explains Luka Kuki, project manager of RAACH SOLAR. "The main solar AC cable runs from the roof four floors downwards to the central grid connection point of the factory, a hard job, but we did it. " adds Mr. Kuki.

The 80kWp photovoltaic system consists of HECKERT SOLAR 255Wp polycrystalline solar modules, six SMA inverters in the category 2 x STP20000, 2 x STP12000, 2 x STP8000, a special SCHLETTER aluminum support structure for concrete roofs and trapezoidal sheet metal roof, 80kW-AC combiner box, SMA WEBCONNECT communication interfaces of the inverters for direct data access in the factory, SMA HOME MANAGER for internet connection and remote monitoring, SMA ENERGY METER for measuring the factories consumption and prevent the feed-in into the grid (so called "zero feed-in") to respect the current national regulations of the Ivorian national electricity company CIE.

Abidjan is the economic capital of Côte d'Ivoire (Ivory Coast) with approximately 5 million inhabitants and a growing economy and population. Abidjan like many other big cities in West Africa faces frequent power cuts. For this reason JMK PRESSING INDUSTRIES factory is equipped with a 160kVA diesel generator. The photovoltaic system synchronizes with the electric grid and in case the diesel generator takes over it synchronizes automatically with it to reduce its fuel consumption.

Economics

The customer decided to buy high class industrial components with a service life of over 20 years in a tropical hot, salty and humid environment.

The owner of the factory has to pay monthly maintenance fees for the transformer station supplied by the national electric company CIE. The initial subscription was for a 150kVA transformer station but as the electric loads have increased, the peak consumption often hits the 200kVA level.

Mr. Jean Marc Kouassi, CEO of JMK PRESSING INDUSTRIES, explains: "Our electricity bill rose tremendously and additionally we have to pay penalties if we exceed our subscription level. With the photovoltaic system, we will reduce our electricity bill, will lower our penalty payments and will reduce our expenditure for fuel. Photovoltaic power with approximately 0,06€/kWh (40 FCFA/kWh) production cost is still the most economic solution among the three electricity sources. We are happy to cooperate with RAACH SOLAR who implemented the project professionally on an industrial quality level".

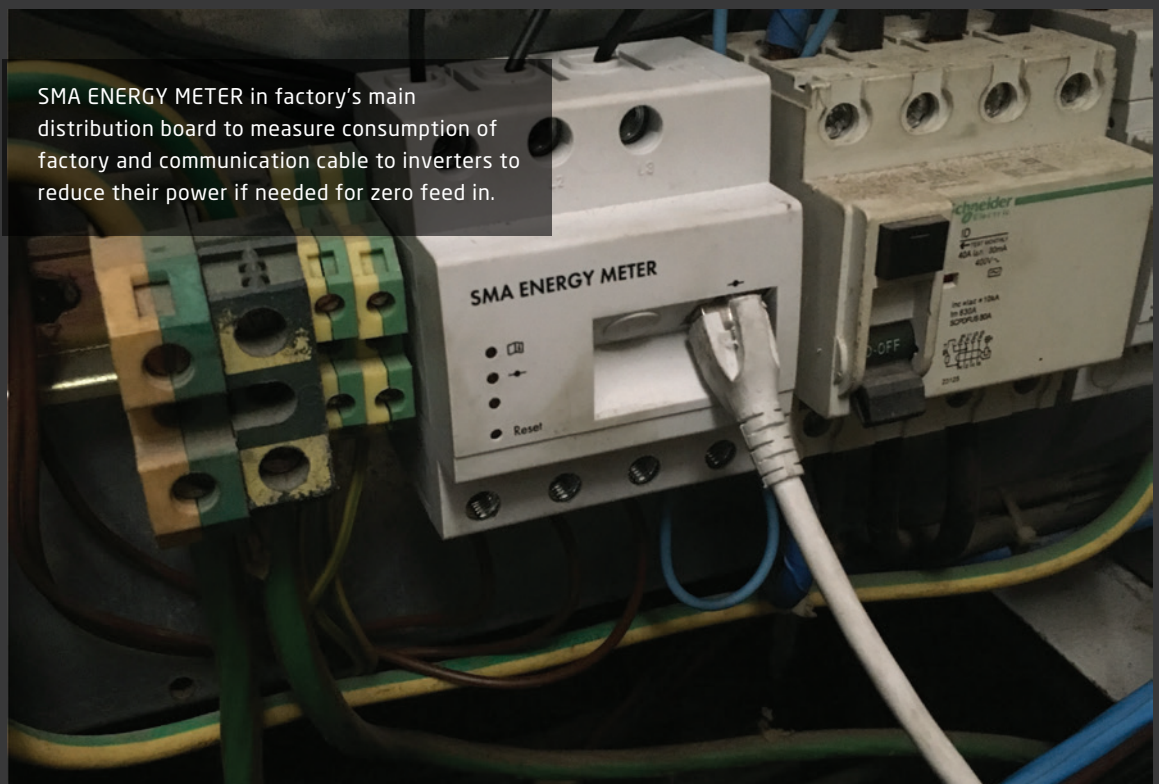
Inside view of JMK PRESSING INDUSTRIES with KANNEGIESSER machines

Inverter room during construction phase with AC combiner box

Solar module series cables in aluminum pipes leading to the inverter room

Electric loads

The factory is equipped with six industrial washing and drying machines from the company KANNEGIESSER suitable for all ranges of hotel, hospital, work wear and retirement home textiles, mats and wipers as well as small or rest batches. The service life of the high quality KANNEGIESSER machines marries well with the 30 years life time of solar modules. At the moment the factory works from 5 am to 10 pm almost every day. To reduce further electricity consumption of the dryer machines, the factory also uses natural liquid gas.



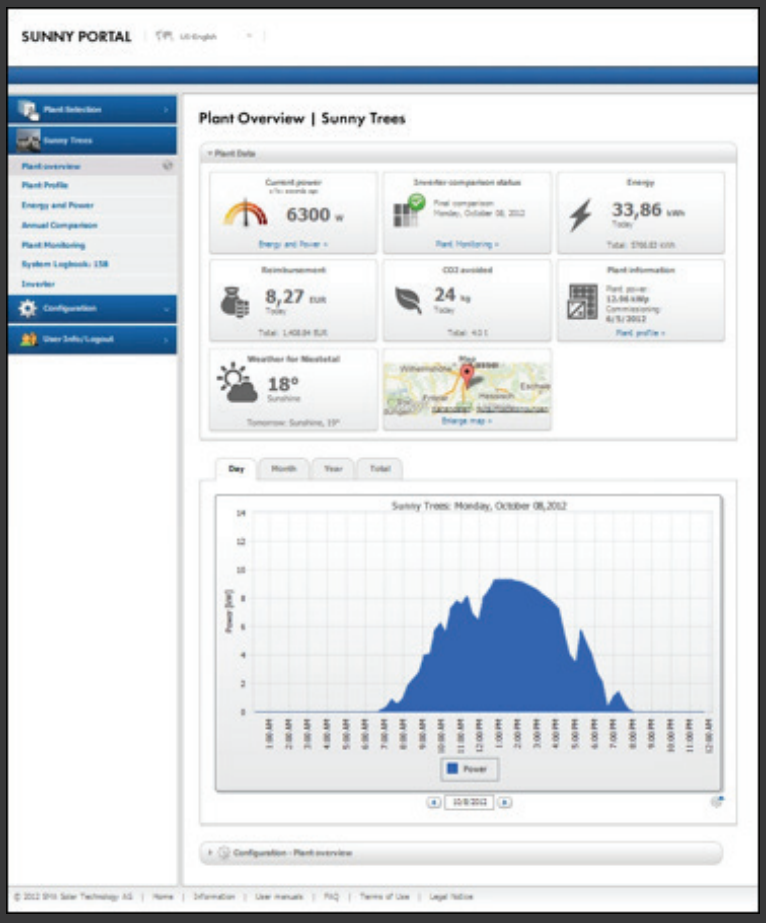
SMA ENERGY METER in factory's main distribution board to measure consumption of factory and communication cable to inverters to reduce their power if needed for zero feed in.

Impact of project

The bottle neck was the available roof space including the structural analysis of the roof. The photovoltaic system can produce more than 125.000kWh per year which will be consumed almost entirely by the factory's electric loads. Depending now on the total annual electricity consumption, the solar system might cover up to 20% of this demand.

However the economic impact is by far more important:

1. General reduction of electricity bill
2. Lowering of subscription level and penalty payments
3. Fuel cost savings for diesel generator



Remote monitoring by SMA SUNNY PORTAL (example)

About RAACH SOLAR

RAACH SOLAR engineers, procures, delivers, installs and maintains turn-key and tailor made photovoltaic systems worldwide. RAACH SOLAR is a premium supplier for open area photovoltaic power plants, building integrated photovoltaics (BIPV), carports, battery storage systems, AC mini grids, solar pumping systems, solar streetlights and consulting services.