



SMA Solar Technology AG – Press Release

SMA Sets Milestone: The First Solar Diesel Hybrid Project in the Megawatts in South Africa Goes into Operation

Niestetal, December 14, 2012 – SMA Solar Technology AG (SMA) has equipped the first off-grid solar diesel hybrid power plant generating power in the megawatt range in South Africa with inverters and intelligent system management. The installation, consisting of 4,200 photovoltaic (PV) modules and 63 Sunny Tripower inverters, has been complementing the diesel energy supply of a chrome ore mine since November with a yearly yield of up to 1.8 gigawatt hours of solar energy. With the support of the PV plant the mine operator can reduce fuel costs and CO₂ emissions.

“Economically, it makes a lot of sense for industrial large-scale consumers in off-grid sunny regions to complement traditional diesel generators with solar energy,” says SMA Chief Technology Officer Roland Grebe. “The high level of solar irradiation means that the PV arrays can be amortised very quickly. Therefore, our solutions are designed to manage energy supply intelligently and, in turn, minimise fuel costs and CO₂ emissions incurred. The installation in Thabazimbi, South Africa, is our flagship project in the industrial sector. On a worldwide scale we are expecting a surge in growth of several gigawatts with solar diesel hybrid systems.”

Reducing Fuel Consumption with Solar Intelligence

In November, SMA completed the intelligent hybrid solar system management solution in Thabazimbi, South Africa, for its client, Solea Renewables (Pty) Limited, a Johannesburg based PV system integrator, and Solea AG, a Germany based EPC (Engineering, Procurement and Construction). The PV plant, located in a remote mining region in Limpopo Province, is now ready for operation with a power of one megawatt. 4,200 PV modules and 63 SMA Sunny Tripower 17000 TL inverters complement the existing diesel energy supply of mine operator Cronimet Chrome Mining SA (Pty) Ltd. As part of the scalable SMA hybrid system solution, the SMA Fuel Save Controller creates an intelligent interface between the PV array and diesel generator. Through interaction with SMA inverters, it manages the need-based solar feed-in depending on the load and generation profiles. If the sun provides sufficient energy during the day, fossil fuel consumption and CO₂ emissions can be reduced to a minimum.

In order to maximise effectiveness, the relationship between the installed PV power and the power from simultaneously operated diesel gensets, the so-called degree of PV penetration, should be optimised. “The degree of PV penetration only reaches a mere 20 percent in systems lacking intelligent management. Anything above that endangers stability of the power distribution grid,” says Jon Ivar Ekker, Executive Vice President SMA Off-Grid Solutions Industrial. “With the



SMA Fuel Save Controller a degree of PV penetration of up to 60 percent is attainable, while grid stability is guaranteed. The additional use of batteries to store excess solar energy would be able to further increase this margin. We are currently working on such a solution.”

South Africa Modernising Energy Supply

The solar diesel hybrid system in Thabazimbi is an important step for SMA in the field of off-grid solar diesel hybrid supply. Such solutions are also important for South Africa, as the country is striving to achieve ambitious goals in energy supply. By 2030, regenerative sources such as sun, wind, water and biomass are to contribute 21 percent of the energy supply. The aim is to stabilise energy supply and, at the same time, make an important contribution to climate protection.

More than 30 Years of System Competence Worldwide

With installed PV power of more than 25 gigawatts worldwide, SMA is the global market leader in the PV inverter sector. When it comes to solar diesel hybrid systems for industrial large-scale consumers, the core competencies complement each other ideally. In addition to extensive expertise in the area of large-scale PV plants, SMA boasts decades-long experience in the electrification of off-grid regions. For over 30 years the company has been developing solutions for the electrification of off-grid regions with hybrid systems based on solar energy. Systems like these supply individual homes, smaller commercial operations and also entire towns on a power scale of 2 to 300 kilowatts. The SMA Sunny Island battery inverters act as grid managers regulating the supply of solar energy to the loads and storing excess solar energy in batteries. These hybrid systems use renewable energy sources, such as sun, wind or hydropower, as the primary suppliers of energy. A connected diesel generator only serves as a back-up for times when not enough renewable energy is available. In the case of industrial large-scale consumers, however, the roles are swapped. In solar diesel hybrid systems, PV plants complement the energy supplied by diesel generators.



About SMA

The SMA Group generated sales of €1.7 billion in 2011 and is the global market leader for solar inverters, a key component of all PV plants and, as an energy management group, offers innovative key technologies for future power supply structures. It is headquartered in Niestetal, near Kassel, Germany, and is represented internationally in 21 countries. The Group employs more than 5,500 people worldwide. SMA's broad product portfolio includes a compatible inverter for every type of module on the market and for all plant sizes. The product range includes both inverters for photovoltaic plants connected to the grid as well as inverters for off-grid systems. SMA is therefore able to provide ideal technical inverter solutions for all plant sizes and types. Since 2008, the Group's parent company, SMA Solar Technology AG, has been listed on the Prime Standard of the Frankfurt Stock Exchange (S92) and also in the TecDAX index. In recent years, SMA has received numerous awards for excellence as an employer and achieved first place in the nationwide "Great Place to Work[®]" competition in 2011 and 2012.

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