



RIPASSO ENERGY®

Press Release

New efficiency world record of Ripasso Energy gives lowest cost for Dish Stirling solar power

Abu Dhabi, World Future Energy Summit, January 15, 2012

Ripasso Energy, a solar technology provider based in Sweden, has demonstrated a new solar-to-grid-quality-electricity efficiency world record of 32 % for 30 kW Stirling dish modules in Upington, South Africa at an ambient temperature of above 28°C.

The Ripasso Energy Stirling Dish technology is especially suited for arid and hot climate in the “sun belt” when one third of the solar energy directly is converted to three-phase electricity through a heat engine driving a rotating generator and without any need for water cooling.

Earlier tests and reports from U.S. DoE, IRENA, ESTRELA, IEA and others have pointed out the many advantages for Stirling dish technology. However this has not been fully demonstrated for commercial operation until now.

“The large engine size of 30 MW, professional automotive production and very accurate solar tracking provides cost efficient and robust CSP technology and an important step towards a clean energy sustainable future”, says Gunnar Larsson, Managing Director for Ripasso Energy.

The Ripasso Energy solution is modularized without any need for central turbines or DC/AC converters allowing step-by-step implementation with generation starting from the first units in service. Low environmental impact in combination with low Levelized Cost Of Energy (LCOE) offers a new “Fast-track” path for solar based world future energy in “the sun belt”.

“The solar conditions in parts of MENA, South Africa and Chile indicates that it is possible to obtain LCOE levels of less than 0.1 Euro per kWh for a 30 MW plant and even lower for larger plants where 0.05 Euro per kWh is our target. This makes the Stirling dish competitive with all other electrical energy technologies in these countries and also feasible in other regions in Asia, Australia and Americas with relatively high solar radiations”, says Carl Ohlen, Marketing & Sales Director for Ripasso Energy and continues;

“Recent reports from IEA, the World Bank as well as the negotiations at the latest UN COP conference in Doha all points out the urgency to de-carbonize the energy system. The Ripasso Energy Stirling Dish offers here an efficient solution with fast implementation for many countries in need of electricity.”

The design of the Stirling Engine is based on a license from Kockums and since many years used in submarines for the Swedish Navy but also with a previous solar-to-electricity efficiency record from an installation in United States. Ripasso has further developed and commercialized the Dish-Stirling concept to a cost efficient and modularized system with automatic sun tracking modules operating independently and generating 2x30 kW three phase AC power each. These modules are not depending on large centralized turbines but can individually generate electricity from the start and then gradually be combined to larger CSP power plants from hundreds of kW for local and industrial use to hundreds of MW utility scale plants for grid connections.



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Gunnar Larsson, the director of Ripasso Energy and earlier with Kockums summarizes; *“To find an energy solution that does not need water for desert climate with submarine technology is really an enlightening sunshine story to be told at the World Future Energy Summit.”*

Ripasso Energy (www.ripassoenergy.com) was founded in 2008 with Ahlström Capital (www.ahlstromcapital.com) as main owner. Based on the very good experience of the Stirling Engine from submarines and also from CSP demonstration sites in USA, Ripasso acquired the license from Kockums and entered other strategic partnerships in order to further develop the Dish-Stirling concept. Since 2011 the Ripasso CSP design has been tested in the factory in Sweden and in Antalya, Turkey. The first commercial power plant is now being built for the South African company, GHG Reductions in Upington, RSA where the solar radiation gives DNI levels which are among the highest in the world (2800 to 3000 kWh/m² and year). And generating a new world record!

Ripasso Energy is located in Malmö, Sweden, near Kockums and close to a highly experienced supply chain originating from the automotive and telecom industry. This ensures efficient and high quality production for the key components. Ripasso Energy is now actively looking for local partners and suppliers around the world in order to further customize CSP solutions to meet each market demand.

Ripasso Energy participates in WFES2013 in Abu Dhabi at the Swedish Exhibition and also in the CSP Today South Africa 2013 2nd Concentrated Solar Thermal Power Conference & Expo 4-5 February in Pretoria where it is possible to get more information about this state-of-the-art CSP solution. For more information please contact Marketing & Sales Director Carl Öhlén, carl.ohlen@ripassoenergy.com who is participating in both conferences.



Ripasso Energy Stirling Dish modules in operation at Upington, demonstrating the new world record



Ripasso Energy South African team inspecting the world record setting units in Upington, RSA