

CENTROflash

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Heralding in grid parity

CENTROSOLAR optimises own consumption for users

The aim of Germany's Renewable Energies Act (EEG) with regard to photovoltaics was to increase access to the technology through industrial mass production. The government worked on the assumption that the costs of photovoltaic products would fall along with rising unit totals of solar technology – so it adopted the principle of feed-in tariff degeneration. Its assumption has proven correct, but faster than anticipated. The very sharp fall in PV production costs and market prices over the past twelve months has now pushed the cost of generating your own power below the price that German consumers pay their energy supplier to buy power from the grid. Depending on the size of the system, next year the feed-in tariff will therefore range between 17.94 and 24.24 ct/kWh. Even in less sunny areas of Germany, grid parity – in other words the ability of self-generated

solar power to compete with commercial power – is already a reality. In other words, if you were to use all the power you generate yourself, a PV system would be a worthwhile investment even without a feed-in tariff. We still need the grid to cover the shortfall between supply and demand, and we still need an intelligent regulatory policy that gives priority to renewables in order to bring about the much-vaunted sea change on energy. We at CENTROSOLAR are now looking into the technical scope for maximising the amount of self-generated power that you can use yourself. Because the next round of energy price rises won't be far off. Solar power generated sustainably and at the point of consumption will then not only be competitive, but soon much cheaper than power from the grid.

International competition: CENTROSOLAR is prepared

Falling market prices mean many photovoltaics companies now find themselves in difficulties. Those players that failed to bring their production costs in line with this trend in market prices now run the risk of falling behind the competition worldwide. Financial aid from the state or private sector for such ailing companies will merely delay this process, but not stop it. Our strategy looks beyond financial incentives for solar power. We are looking to make the most of our strengths – roof systems as our core business area, our own module manufacturing operations with the "Made in Germany" cachet, and a sales network that guarantees close customer ties. And we have already done our homework when it comes to ongoing



optimisation of our processes: our module plant is competitive – a simple explanation why even Asian players order modules from us. We are now increasingly turning our attention to technical solutions that help our users make the most of the power they generate. Our idea of using solar power to drive a heat pump for heating water was just a start. We are now taking the idea a step further and helping to rise to the challenge of bringing about a sea change on energy. With solar power that people can generate "democratically" themselves.

Alexander Wimmer



Happy Birthday, Sonnenstromfabrik! CENTROSOLAR subsidiary in Wismar celebrates 10th anniversary

CENTROSOLAR has now been manufacturing top-class photovoltaic modules at Wismar-based Sonnenstromfabrik. Sonnenstromfabrik has a workforce of about 400 employees and is therefore one of the major employers in Mecklenburg-Western Pomerania. With a capacity that will soon reach 350 MWp, it is also one of the biggest solar module plants in Europe.

In the year it was established, 2001, it had 15 employees manufacturing

solar modules for off-grid use on one production line. Production of crystalline modules for grid-connected systems started in 2002. The production facilities have since been extended several times, including the construction of a new plant in Wismar in 2008. CENTROSOLAR is currently adding a second plant that will mean annual production capacity can ultimately be increased to as much as 500 MWp. By the end of this year Sonnenstromfabrik's production capacity will reach

350 MWp. Daily output at Wismar will then be in excess of 7,000 solar modules destined for customers in Europe, the USA and Asia. Sonnenstromfabrik reflects CENTROSOLAR's firm affirmation of Germany as a technological base. "Quality without compromises is our overriding principle. To guarantee it, our production operations are based exclusively in Germany," explained Centrosolar AG Sales Director Dr Josef Wrobel.



VIP visitor comes to Wismar – Premier Selling visits Sonnenstromfabrik

The Premier of Mecklenburg-Western Pomerania, Erwin Sellering, visited Sonnenstromfabrik in August. Dr Alexander Kirsch, CEO of CENTROSOLAR Group, and Ralf Hennigs, Managing Director of CENTROSOLAR Sonnenstromfabrik, took the state's leader on a 60-minute tour of the plant to see its "Made in Germany" solar modules taking shape. The premier was accompanied by Tilo Gundlack, State Assembly candidate for Wismar, Birgit Hesse, Chief Administrator for North West

Mecklenburg District, and Thomas Beyer, Mayor of Wismar. In the course of their tour the politicians were impressed by the high quality of the modules. "Renewable energies represent a huge opportunity for Mecklenburg-Western Pomerania. We are delighted to have the plant of such a key solar player as CENTROSOLAR in our state," acknowledged a visibly impressed Sellering after inspecting the advanced production facilities at Wismar.

From left: Dr Alexander Kirsch (CEO of CENTROSOLAR Group AG), Thomas Beyer (Mayor of Wismar), Tilo Gundlack (State Assembly candidate for Wismar), Birgit Hesse (Chief Administrator for North West Mecklenburg District), Erwin Sellering (Premier of Mecklenburg-Western Pomerania), Ralf Hennigs (Managing Director of Centrosolar Sonnenstromfabrik).



Seminars – CENTROSOLAR trains project supervisors for photovoltaic systems

From September 2011, Centrosolar AG will be offering a new advanced training course on the planning and installation of photovoltaic systems. Comprising five modules, the seminar focuses on the construction, legal, management and communications technology aspects of installing solar systems. The nine-day course is held at CENTROSOLAR's Centroschool training centre in Paderborn, in conjunction with TÜV Rheinland Academy. As well as sharing their specialist knowledge, the experts from TÜV Rheinland Academy show how to plan and install photovoltaic systems economically, and what legal and health and safety requirements need to be complied with for their installation. Negotiation and communication training and motivational management techniques round off the course. After passing the final exam, candidates are presented with a certificate as "Project Supervisor for Photovoltaic Systems (TÜV)". This new advanced training course is aimed at electricians, roofers, carpenters and climate control technicians who want to qualify as installation engineers for photovoltaic systems. The advanced training course also targets graduates, technicians and master craftsmen with at least two

people with an equivalent qualification and at least five years' professional experience in the solar technology sector. The thematically self-contained modules, lasting between one and three days each, can also be booked separately. The first course started on September 8, 2011. The other dates are scheduled for between October and December. For more information, contact Hans-Willi Kanne at the Centroschool Training Centre (tel. +49 5251 500500 or HansWilli.Kanne@CENTROSOLAR.com).



5 steps to qualifying as a project supervisor for PV systems.

Module 1 2 days	Photovoltaic systems expertise incl. exam to confirm expertise
Module 2 3 days	Identifying and assessing product, planning and installation errors in photovoltaic systems
Module 3 2 days	Motivational leadership and confident negotiating
Module 4 1 day	Building, architectural and engineering law
Module 5 1 day	Health and safety aspects of installing solar systems
Exam	Project Supervisor for Photovoltaic Systems (TÜV) exam

The fun way to get to know CENPAC components – with Centrosolario Jump 'N' Run game as a guide to how to install a solar system

The online game with the CENTROSOLAR mascot "Centrosolario" is a fun way of helping players get to know the CENPAC components. Centrosolario progresses by jumping and running, on the way collecting all the components of the CENPAC PV system. Over four exciting levels the character collects roof hooks, module support profiles and screws, fits modules and wires up the components. The only problem is the fearsome Nuclear

Giant who hurls nuclear waste drums at him. The Jump 'N' Run game Centrosolario takes players on a journey through the components of the CENPAC system and acquaints them with the installation process through play. The computer game was premiered at the Munich Intersolar. Time for a bit of Jump 'N' Run yourself? You'll also find an app for this game on the iTunes Store – of course free of charge!



Test your skills at www.centrosolario.de, but watch out for the Nuclear Giant!



EUROSOL project – Over 9,000 ConSoles holding the modules of the biggest photovoltaic system in Ludwigshafen



A former dump on Ofenhallen-damm is showcasing the biggest PV system to date in Ludwigshafen.

EUROSOL, a company that focuses on the wholesale, project planning and installation areas, is among the market leaders in southern Germany, having planned and installed over 2,000 turn-key photovoltaic systems for private customers and investors.

A large-scale project undertaken by EUROSOL GmbH is now using a site at the municipal recycling centre in Rheingönheim to help protect the environment. The city is leasing out the site for the operation of the PV system for the next 20 years. The system will save about 1,100 tonnes of CO₂ per year. It is not permitted to drill into the ground at the site, which was formerly the location of a dump, and various other conditions have

to be met for conservation reasons. A way of mounting the modules that satisfied the lessor's requirements therefore needed to be found.

The ConSole PV mounting system from Renusol was the solution chosen. The mounting unit is filled with ballast. This renders securing it to the surface and piercing the substrate or ground unnecessary. The installation process thus becomes faster – an important added benefit that makes the investment even more attractive.

The mounting system made from HDPE also brings further benefits to the project; the ConSole is light in weight (depending on type and features between 5 and 8 kg) and is supplied in units of up to 80 per pallet. These two factors simplify and speed up the installation process and mean there is very little packaging to be

disposed of. Once the lease agreement is up, the ConSole can be recycled – a positive environmental aspect of a rewarding investment in the future, considering how high commodity prices currently are.

“Once we had received the building permit in mid-July, we started construction of the plant straight away in early August. Because it was easy to plan and the ConSole was so effective and efficient to erect, we were able to install 9,570 solar modules and seven Power-One central inverters on the 41,000 m² site within the record time of 6 weeks. The 2.24 MWp system has an annual power yield of about 2 million kWh. That's enough to keep around 600 homes supplied with renewable energy,” explained Frank Illner, Managing Director of EUROSOL GmbH.



Renusol America:

A Renusol CS60 mounting system was used for the 24.8 kWp PV system on the roof of the Eastside Medical Center in Texas. The system permits an optimum solarisation angle of 15 degrees with minimal shadows. Overall, the system covers around 30 percent of the clinic's electricity requirements.



North America

USA – German-made C Series powering up California winery

The winery Karmère from Plymouth, California, now generates its power with CENTROSOLAR C Series modules. Even with challenging weather conditions, the modules provide a continuously high performance and are especially suitable for the salty coastal air in Plymouth.

The German-made CENTROSOLAR C-Series modules were recently installed by SunnyCal Solar – a

CENTROSOLAR installer – at the Karmère Winery in record time. Not an easy undertaking, because SunnyCal Solar operates on a Just in Time (JIT) basis, minimizing the amount of inventory it has to carry. “Our solar business model is a major challenge for most PV module companies,” noted CEO, Steve Dollens. “We need our suppliers to deliver what we order with minimal lead time and on-time at the job-site.”



California’s salty coastal air is no problem for the C-Series modules.

CENTROSOLAR maintains a national warehousing system for the distribution of its PV modules, inverters, racking and BOS components, as well as the complete, pre-packaged photovoltaic system, CentroPack. “CentroPack consists of a transport tube that carries the packaging units to the place of production or warehouse securely. CENTROSOLAR helps make our JIT business model work,” says Dollens. “Their regional California warehouse is centrally located for us and carries everything we need. They can respond quickly to job orders and help keep our installations on time”, says Dollens.

Canada – First 135 kWp roofing system with CENTROSOLAR modules in Canada

A milestone for CENTROSOLAR Canada: CENTROSOLAR Canada’s customer EnviroEn-Inc. announces the completion of the first 135 kW solar rooftop installation - using CENTROSOLAR modules – in Canada. For the roof of Dubwear’s clothing factory in Mississauga, Ontario, Centrosolar Canada delivered 495 high-performance E-Series modules. Dubwear is a custom clothing provider to over 300 Canadian and US universities, travel operators, camps and corporations. The company relies on CENTROSOLAR modules to meet the project’s higher output requirements, maximize generated power and maintain a reliable power level in potentially harsh weather conditions. Dubwear

expects a solid return on investment along with providing a renewable supply of electricity, particularly during peak summer demand times. The system pays off two times, as the project operates under the Ontario Feed-In-Tariff program. EnviroEn-Inc. is an Ontario, Canada based solar energy company that is known for its high standards in the

solar industry: first-class technical expertise, product knowledge and commitment to provide clients optimum designs at competitive rates, with over 35 residential and commercial solar projects completed in North America.



495 E-Series modules on the roof of Dubwear, in Canada.



Europe

Italy – CENTROSOLAR module owners receive a 10 % higher feed-in tariff



The certification body TÜV confirmed that over 60 % of the CENTROSOLAR system components are European-made.

In Italy, operators of solar systems receive a ten percent higher feed-in tariff if their system is from CENTROSOLAR. This arrangement is made possible by the new Italian feed-in tariff law “Conto Energia IV”. The new legislation specifies that operators receive payments at a higher rate if they use European-made solar systems. CENTROSOLAR was one of the first German manufacturers to obtain certification confirming that the products from Sonnenstromfabrik qualify as “European-made”. The TÜV Rheinland certification body concluded that 60 percent of the value added during manufacture of the system components took place within Europe. The production

processes in question are key stages such as lamination and the wiring of the cells. CENTROSOLAR makes all its modules at Sonnenstromfabrik, in the north of Germany. Crystalline solar modules that are among the best on the international market have been made at Wismar for the past ten years. “This certification comes as a ringing endorsement of our European production policy. We have been making high-quality solar modules in Germany for over ten years, products that are a match for their competitors worldwide. We’re delighted that our customers in Italy will now also be rewarded financially for choosing quality products made in Germany,” explained Dr Alexander Kirsch, CEO of CENTROSOLAR Group AG.



Centroplan, the roof expert, is also in demand for planning projects on the ground.

40,000 m² for La Castelluccia – Centroplan builds open-site system in Italy for Spanish bank Banco Santander

Centroplan has built an open-site PV system with an output of 2.3 megawatt peak (MWp) in La Castelluccia, near Rome. The system, which was connected to the grid at the end of July, has an area of 40,000 m² and generates 3,280 megawatt-hours (MWh) per year. That is enough power to supply 900 homes. The client was

the Spanish bank Banco Santander. The system, handed over as a turnkey facility, uses CENTROSOLAR S-Class Professional modules that are noted for their consistently high yield when in continuous use. The TerraSole open-site mounting system is also made by a CENTROSOLAR subsidiary – Renusol.



The new legislation in Italy promotes smaller European-made integrated roof systems.

Italian market surges forward – BIPV takes centre stage

After the blocking of the feed-in tariffs earlier this year, the Italian PV market is flourishing once again, having exceeded the 11 GWp installed power mark in October. With 2010 having finished with a total of 3.3 GWp installed, the market has grown by a substantial 7.7 GWp despite coming to an almost total standstill for 3 months (March to May). The new “IV^o Conto Energia” feed-in tariff plan has placed an important focus on BIPV, and sales of S-Class Integration Deluxe continue to increase. The crystalline panels are special solutions for building integration, especially the so-called special components. They replace the traditional roofing tiles and make

up a high-value roofing system with ecological power generation. Several CENTROSOLAR installations have already received official approval from the GSE under the previous feed-in tariff scheme which ran from January to March, and the first installations under the new scheme are expected to be approved in the immediate future with the GSE confirming that no other company in Italy has made a similar number of applications for the BIPV category. The Integration Deluxe system reached a total sales volume of 1.5 MWp end of September. More than 850 kWp were sold in the third quarter alone.



Africa / Europe

Africa – PV modules from CENTROSOLAR for 130 Kenyan children

Over 60 percent of CENTROSOLAR solar modules are destined for use outside Germany. CENTROSOLAR recently supplied photovoltaic modules for an SOS Children’s Village in Mombasa, Kenya. Comprising over 300 modules, the solar power plant is the third-largest in East Africa. The system helps to supply electricity for the SOS Children’s Village. It thus makes the village’s 130 children a whole lot less dependent on the many supply problems that typically affect Kenya’s overstretched grid. The system also supplies some of the power for the school, where over 500 pupils from the surrounding area receive their education. The way the power is used marks a fundamentally new departure: the solar system is the first in Kenya that does not merely generate power to cover the operator’s requirements, but also feeds any surplus into the grid. “Mombasa is Kenya’s second-largest city but the power supply is very unreliable and locally generated

electricity is expensive. In a country that is one of the sunniest on the planet, expanding solar energy and its infrastructure simply makes sense,” explained Frank Heise, Sales Director for Stand Alone Systems at CENTROSOLAR. The project was inspired by the Renewable Energies Export Initiative

of the Federal Ministry of Economics and Technology and was a German-Kenyan joint venture: CENTROSOLAR supplied 312 of its S-Class modules with combined output of 60 kWp; installation locally was handled by the partner company Asantys Systems together with the Kenyan venture partner African Solar Design.



The next generation admiring Kenya’s first system that also feeds into the grid.

Benelux – Ceniq first installed in The Netherlands

The new CENTROSOLAR mounting system Ceniq was first installed in The Netherlands. The Japanese automobile manufacturer Mazda invested in a new 6 kWp solar energy plant on the roof of one of his car dealerships. Ceniq is the ideal solution for flat roofs, which are capable of supporting only a small additional weight load. The system has a weight per unit area of less than 10 kilograms per square meter and is thus significantly lighter than conventional mounting systems.



Benelux – Golfclub provides a portal to sell CENTROSOLAR to end customers

A golf club in Belgium invested in solar energy in two ways. The club installed a 10 kWp solar energy plant on its roof to meet the power requirements. Also they signed a contract with Centrosolar Benelux to make an attractive offer for a solar power plant to all their members.





Asia /
North America

China – new glass coating system operating at full capacity



CENTROSOLAR reported on its expansion in the Far East in the last issue of CENTROFlash. In May, CENTROSOLAR had commissioned its first AR line in Huzhou, China, at a partner company that has been operating a glass melting furnace there on behalf of Centrosolar Glas GmbH & Co. KG since 2009.

Because some of the world's biggest PV module manufacturers are based in Asia, the idea was to use locally produced material for that market, which has the highest potential in the world for solar glass. We can now report "mission accomplished": production recently started on a three-shift basis.

Our first solar glass plant in Huzhou, China, supplies Asian module manufacturers.



Welcome, Ram Akella – Centrosolar America salutes new management member

Ram Akella is new Board Member, Joint President and CFO at Centrosolar America. In the US, Ram is responsible for Sales, Finance, Human Resources, IT and Legal and takes over the management together with Deep Chakraborty. Ram is a successful entrepreneur and brings along broad experience in project financing of energy projects. We look forward to Ram supporting our management team and advancing the expansion of CENTROSOLAR in the US.

Ram Akella takes over as Managing Director of Centrosolar America in tandem with Deep Chakraborty.

CENTROSOLAR has donated a 28 kWp solar system for a training centre in Haiti. Its installation has now been completed with the active assistance of volunteers from Germany.



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