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STS Med - Newsletter N°7

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## STS-Med

### Small scale Solar units for Mediterranean communities

*Priority 2 – Topic 2.3 Solar Energy*

### Newsletter No 7 - August 2014

#### Editorial

#### Energy Efficiency Communication 2014



The Energy Efficiency Communication is a **strategy that proposes mid and long-term objectives for the EU's energy efficiency policy by assessing progress towards the 2020 energy efficiency target and proposing a new 30% target for 2030.**

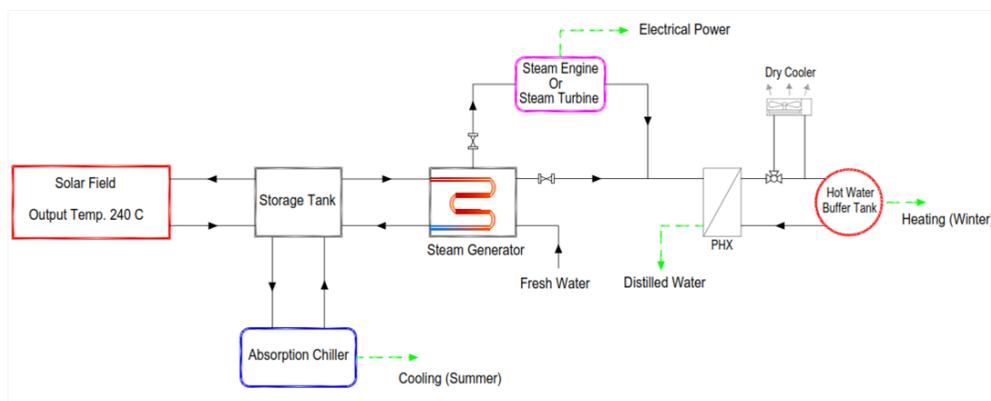
The EU proposes a new energy efficiency target of 30% for 2030 in its Energy Efficiency Communication, released on 23 July 2014. The Communication assesses the EU's progress towards its 20% energy efficiency goal for 2020 and analyses how energy efficiency can drive competitiveness and strengthen security of supply in the European Union in the future. Overall, it found that with current measures the EU will achieve energy savings of 18-19% by 2020. However, if all Member States work seriously to properly implement the already agreed legislation, the 20% target can be reached without the need for additional measures.

Click [here](#) for more information

## STS Med's technical news

### Example of the design of the Concentrated Solar Multi-Generation pilot plant in Jordan

The proposed Mutli-Generation CS project at Al-Balqa University/ Jordan will use the **thermal energy** from the parabolic trough solar matrix to drive an Absorption chiller (17 KW) and **generate steam**. The steam is utilized to power a 1.2 KW steam Turbine. The steam emitted from the steam engine is consequently used in the evaporation stage of water distillation as it is condensed to complete the power cycle. **The heat rejected from the water distiller is then used for heating during winter or rejected by dry cooler** (in summer). All this will be done on the roof of Al-Khwarizmi Engineering building at Al-Balqa University in Northern Jordan.



#### System components

As shown in below sketch, the system consists of the following main components:

- A. Solar collectors (Parabolic trough collectors)
- B. Steam Generator.
- C. Steam Turbine.
- D. Water treatment/desalination unit.
- E. Absorption Chiller.

## STS Med promotion: partner's Regional events

**Multi-Generation Solar Thermal Power Plants - Jordan**  
August 10th to 14th 2014

## An invitation to attend a training course...



Under the umbrella of the draft units of small solar thermal power (STS-Med) which is being implemented with funding from the European Union and in partnership with Mediterranean countries, **Al-Balqa Applied University/Al Huson University College** is pleased to invite you to attend a training course entitled: **"Multi-Generation Solar Thermal Power Plants"**. The training program deals with all of the Multi-Generation Solar Thermal Power Plants (electricity generation, heating, cooling, water desalination). **By the end of the training, the participants will acquire basic knowledge and technical of:**

- Solar thermal power complexes.
- Elements and components of multiple solar generation stations.
- The principle of the work of the solar thermal power plant including maintenance and operation of those plants.
- Knowledge of management and commercial side of solar power plants.
- The training program also includes a visit to one of the sites field of concentrated solar power plants.

The training course aimed to inform the participants about **the fundamentals of solar thermal power plants and to work in the field of design, installation, operation and maintenance of multi-purpose solar thermal power plants.**

The training course could be participated by interested engineers from various engineering disciplines (electrical, mechanical, architectural, civil engineering), graduated students and researchers as well as specialists in the field of solar energy companies, mechanical and electrical contracting companies, new and renewable sources of energy and local organizations and all parties concerned.

### For more information :

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Mechanical Engineering Department - Al-Huson University College - Al-Balqa' Applied University

## Organization of training Seminars - Cyprus

October 29th to 31st

### Transfer of know how to train planners, installation engineers and professionals



The Cyprus Chamber of Commerce started preparing the organization of wp7-training seminars in Cyprus in collaboration with [The Cyprus Institute](#) and [Academy of Scientific Research and Technology](#) which will take place at the end of October in Cyprus. The

seminars will comprise a joint program (29/10), **2 training programs and site visits for both professionals and technicians (30/10) and a technical workshop concerning the future of small-scale-CPS (31/10).**

Cypriot partners will arrange and coordinate the training program and host training sessions at dedicated offices close to the locations of the demonstration unit. **Trainers exchange (speakers) between Cyl and ASRT will take place that will increase project's penetrance to local entrepreneurs and engineers and support the technology transfer.**

**For more information:**

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Cyprus Institute premises in nicosia - Athalassa Campus - 20 Konstantinou Kavafi Street - 2121 Aglantzia, Nicosia, Cyprus

## Press & web CSP review

### The European Investment Bank (EIB) support Eskom's 100MW concentrating solar power (CSP) plant in the Northern Cape, South Africa.

**The European Investment Bank (EIB) has agreed to provide €75m loan to support Eskom's 100MW concentrating solar power (CSP) plant in the Northern Cape, South Africa.**



[The African Development Bank](#), [Agence Française de Développement](#), Clean Technology Fund (CTF), KfW and [the World Bank](#) are co-financing the project, which is close to Upington. EIB said CSP utilizes several technologies to concentrate **the sun's energy via large mirrors and uses the concentrated thermal electricity to produce steam to drive a conventional steam turbine for power generation.**

Eskom senior general manager for renewables

Ayanda Nakedi said:

*"Eskom is committed to investing in projects that will diversify our energy mix, including renewable resources."*

*"The potential to deploy CSP technologies on a large scale is promising, and we are pleased to have taken another step forward in funding our Upington solar plant with this loan agreement."*

EIB vice president [Pim van Ballekom](#) said:

*"Energy is essential for economic activity and investment in new renewable energy generation capacity can harness South Africa's natural resources."*

*"The European Investment Bank is pleased to work with Eskom to support the CSP plant that will act as a model for similar schemes elsewhere and looks forward to continued engagement in South Africa under a new mandate agreed earlier this year."*

**The EIB has recently signed a ZAR1.4bn contract (\$130m) with the Development Bank of Southern Africa to finance the 100MW ! Ka Xu CSP plant in the Northern Cape.**

Click [here](#) to read the full article

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## Spanish solar power topped 8% penetration in July

**Solar PV and CSP accounted for 8.3% of the energy mix, with renewables combined generating 37.6% of all electricity for the month.**

**Statistics published this week by the Spanish electricity board show that solar power provided more than 8% of Spain's electricity in July.**



Overall demand for power in Spain last month rose by 0.1% year-on-year to reach 21,104 GWh, with renewables reaching a combined 37.6% penetration – driven largely by wind power, which provided 3,658 GWh of electricity. That figure represented an increase of 28.7% on last year, and was 16.8% of the overall energy generation mix.

Solar PV accounted for 4.3% of the energy share, slightly ahead of concentrated solar power (CSP), which enjoyed a 4% share of the energy mix. **With nuclear power grouped in with renewables, the figures show that 55.3% of Spain's electricity generation in July produced zero CO2 emissions.**

Spain's electricity board also published data for the first six months of the year that showed solar PV managed a 3.3% average share of the energy mix for the first half of the year, beaten by CSP on 7.3%, and wind power on 22.2%.

The abolition of Spain's feed-in tariff (FIT) in 2013 hit solar PV extremely hard, stripping the sector of confidence and return on investment. A recently filed legislation amendment to the country's renewable energy law ([the RD413/2014, passed in June](#)), is likely to yield even more regressive measures for Spain's solar PV industry, with [the Spanish Photovoltaic Union \(UNEF\)](#) warning that the measures will harm approximately 30% of PV projects, stripping their income potential by around 40%.

Click [here](#) to read the full article

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## Areva Abandons Solar and Shuttters Its Ausra Concentrated Solar Effort

**French nuclear engineering firm Areva, suffering through a Fukushima-inspired sales slowdown in reactors, has exited its**

## concentrated solar power business, according to Reuters.



[Areva](#)'s solar unit consisted of what remained of the acquired startup [Ausra](#) and its compact linear Fresnel reflector (CLFR) solar steam generator technology.

We first wrote about Ausra in 2007, when the Palo Alto, Calif.-based CSP startup came out of stealth with more than \$40 million in VC funding from Khosla Ventures and KPCB. The firm survived the greentech VC bubble and was acquired by French nuclear firm Areva in 2010, part of that company's bid to diversify its energy offerings.

As [GTM Research](#) reported, Ausra was founded in Australia as Solar Heat and Power, with technology based on research by David Mills, the developer of the evacuated tube technology used in much of the world's solar hot-water systems. As recently as last year, Areva was insisting that its CSP business remained viable. Areva cited **the 5-megawatt Tucson Electric Power solar augmentation project, a 125-megawatt project in India, a 44-megawatt solar augmentation project in Australia and a potential CLFR/molten salt storage system.**

**The Reuters report claimed that the former Areva Solar generated about \$134 million in 2013 revenue but was losing "tens of millions."**

At the end of 2013, there were more than 12,000 megawatts of photovoltaics and 918 megawatts of CSP in the U.S., according to [GTM Research](#). The U.S. installed 410 megawatts of CSP in 2013 and 517 megawatts in Q1 2014. Recently completed projects include:

- Abengoa's 280-megawatt Solana parabolic trough project in Arizona with six hours of storage, along with a power-purchase agreement from APS
- 250 megawatts from NextEra's Genesis solar project
- BrightSource Energy 370-megawatt (cumulative) Ivanpah Units One, Two, and Three pressurized steam solar power tower in California's Mojave Desert with a PPA from PG&E and SCE

**A combination of plunging PV prices, historically low natural-gas prices and a slowdown in big projects continue to create strong headwinds for growth in CSP.**

As GTM Research writes, "Declines in PV module costs have undercut trough technology and put it at a significant cost disadvantage. Since the beginning of 2013, 1 gigawatt worth of CSP projects have been suspended, and an additional 305 megawatts have been delayed."

Click [here](#) to read the full article

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## ENEA joins the HITECO project developing a parabolic trough receiver for CSP plants

The EU funded project HITECO has welcomed ENEA as new member of the consortium researching and developing a new solar collector



concept for high temperature operations in CSP applications. The project is led by Spanish firm Aries Ingeniería y Sistemas.

The project is developing a key component of the technology; an innovative solar receiver tube for high temperature to "overcome the current limitations in the technology reconsidering concepts and looking for the flexibility in energy plant operation".

ENEA, the Italian National Agency for New Technologies Energy and Sustainable Economic Development, will add its broad expertise in R&D projects and research programs of the main international bodies acting in science and technology.

In this case, the project is working to use molten salt as working fluid, a matter in which ENEA has the largest track record. The Italian center also proves expertise for the definition of technical standards. ENEA will be involved in the on-field demonstration activities and in charge of the thermal fluid management system, operated with molten salts, as well as the collectors, with a total length of 100 meters. ENEA will carry out these research tasks until the end of the project in ENEA's premises, located in Casaccia (Rome). The main objective is the validation of the new concept of solar absorber tube for high temperature included in HITECO project.

The HITECO Project analyzes solar receivers from the perspective of future profitability and viability of production, taking into account the technical barriers of the industrial processes involved: the feasible application and use of distinct materials, logistics, and the assembly process.

Click [here](#) to read the full article

## Calendar

### 20th Solar PACES conference - China, Beijing

16 to 19 september 2014

**SolarPACES is the foremost symposium for the who's who in concentrating solar power and chemical energy systems**



It offers a forum for **industry, research, politics and financing stakeholders** within the framework of a scientific conference programme with leading world experts. The conference will offer in depth:

- Insight into new developments in technology, politics, the market and financing presented by top experts in the field;
- A scientific conference programme with leading world experts and particular

emphasis on recent research results;

- A forum for industry, research, politics and financing stakeholders to discuss the future of concentrating solar energy.

Click [here](#) for more information

## Solar Power International - Usa, Nevada, Las Vegas

20 to 23 october 2014

### Solar Power International, we're heading to Vegas !



Solar Power International, the solar industry's most powerful, comprehensive educational conference and product exhibition, will be held October 20-23, 2014 at the Las Vegas Convention Center in Las Vegas, Nevada.

[Registration](#) is now open! Whether as an exhibitor, sponsor, or attendee, explore ways to participate and engage with more than 15,000 professionals in solar energy and related fields for four days of action-packed show floor hours, educational sessions and workshops, general sessions and special events. This is the best chance of the year to connect with colleagues and industry leaders.

For additional SPI information, event breaking news, and solar industry education, join the Solar Power International [mailing list](#).

Click [here](#) for more information

## 4th Solar Intergration Workshop - Germany, Berlin

10, 11 November 2014

### Welcome to Berlin!



This one-and-a-half day Solar Integration Workshop will be held for the fourth time, again in conjunction with the International Workshop on Large-scale Integration of Wind Power into Power Systems as well as on **Transmission Networks for Offshore Wind Power Plants**. The Solar Integration Workshop brings together utilities, **PV/CSP system developers and project developers, power systems operators and other professionals to exchange knowledge and ideas**, as well as experiences in matters relating to the integration of solar energy into the power systems. Speakers from companies and leading institutes are invited to present at the workshop, as well as workshop participants.

Click [here](#) for more information

Links

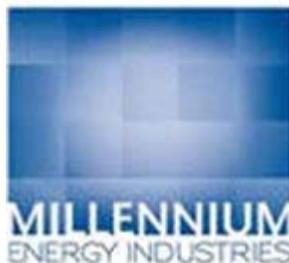
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