



Science News, Information, and Research

HOME
HEADLINES
LAB
GEOSCIENCE
BIOLOGY
TECHNOLOGY
ASTRONOMY
CHEMISTRY
MATHEMATICS
PHYSICS
ASK THE EXPERT

[Load Impact](#) The leading load testing service on the web. Try it here. loadimpact.com

[Clean Power Finance](#) Come back and get a free trial of the leading solar sales platform. cleanpowerfinance.com/free-trial

[Pannelli Fotovoltaici](#) Confronta 5 Preventivi Gratuiti e Scegli il migliore della tua zona ! Fotovoltaico-Prezzi.it



AdChoices

Load Impact

The leading load testing service on the web. Try it here. loadimpact.com

Clean Power Finance

Get a free trial of the leading residential solar sales platform. cleanpowerfinance.com/free-trial

Neste Oil

Fuels With a Lower Level of Environmental Impact. Learn More! www.NesteOil.com

Impianto Fotovoltaico

Incentivi impianti fotovoltaici. Confronta preventivi gratuiti! Fotovoltaico-Costi.it

Pannelli Fotovoltaici

Confronta 5 Preventivi Gratuiti e Scegli il migliore della tua zona ! Preventivi-PannelliSolari.it

Pages

[About Decoded Science](#)

[Contact](#)

[Staff](#)

[Forums](#)

[Privacy Policy](#)

[Terms of Use Agreement](#)

[Write For Decoded Science](#)

Science Links

[American Association for the Advancement of Science](#)

[Extreme Science](#)

[Inventions & Discoveries](#)

[Smart Home Savvy](#)

More Efficient Photovoltaic Plants with Smaller Environmental Impact

Author: Clara Piccirillo : Posted to Decoded Science on January 24, 2012 at 8:07 am

More Efficient Collection of Solar Radiation



Concentrators in an FTCC plant. Photo by Scienza Industria Tecnologia.

The floating platforms of the FCTT plants can be easily oriented in a particular direction; this allows them to be moved slightly in the direction of the sun (Tracking). In this way, more solar radiation can be collected, increasing the amount of energy produced.

To increase radiation collected, a system of reflectors (Concentrators) is placed at the side of the panels. In addition, the use of the concentrators has an effect on the cost of the panels; the concentrators are made of aluminium, a material that is much cheaper than the silicon (or the other materials) employed in the solar cells. This means that a PV panel with higher efficiency can be made without using more silicon.

Cooling the Solar Panels

The water of the basins/reservoirs where the FTCCs are located can be used to cool down the panels and avoid their overheating; this is achieved with a system of sprinklers. This can improve the efficiency of the PV panels and lead to an increase in the energy production by up to 10%. Furthermore, the thermal stress the panels undergo to is significantly decreased; this makes the life cycle of the panel longer.

FTCC Plant at Work

Professor Marco Rosa-Clot, CEO of Scienza Industria Tecnologia, has built the plant in collaboration with Koinè Multimedia, and tells Decoded Science more about the FTCC plant.

"The first FCTT power plant started working in 2011 near Pisa (central Italy); it has a power of 30 kWp. We calculated that it can produce about 75% more energy, in comparison with a ground plant. These calculations were made for the latitude of Pisa, but the advantage could be even greater in other areas with more sun irradiation, such as the south of Italy.

At the moment, two more plants, of 20 and 100 kWp respectively, are being built in Korea, using our system.

Our aim is to optimize the FTCC system and make floating PVs able to generate electricity that is cheaper than that generated from oil or natural gas. We hope to achieve this by 2013, we are working on it."

Improving Solar Power Production Through Innovation

Solar power has a great deal of potential as a power source, but the common drawbacks that come along with the utilization of PV cells, such as costly materials, overheating, and environmental impact, tend to reduce the efficiency of PV plants. Innovations such as the FTCC Photovoltaic plant and improvements in materials go a long way towards making the renewable energy of solar radiation a more viable power source for the future.

Sources

Scienza Industria Tecnologia. [FTCC Photovoltaic Plant](#). (2011). Accessed January 2012.

[Click to Return to Page One: More Efficient Solar Power Plants](#)

[Master in Energia Solare](#) www.uniecampus.it/master_universita/

Diventa esperto nel Fotovoltaico! Iscriviti al Master. Chiedi info.

[Geothermal Can Heat Us](#) OilandEnergyInvestor.com/Geothermal

Geothermal companies are set to make huge profits in 2011. Free RPT

[Neste Oil](#) www.NesteOil.com

Fuels With a Lower Level of Environmental Impact. Learn More!

[Solar Power](#) www.business.com

Find Mfrs and Distributors of Solar Power Supplies at Business.Com



AdChoices

AdChoices

About the author

Clara Piccirillo



Clara Piccirillo has a degree in Industrial Chemistry from Padua University (Italy). She has been working in research for more 10 years, in the fields of Materials Science and Microbiology. She has also taught at the University level in the UK, in the areas of Industrial Pollution and the Environment.

[Contact this Writer](#)

[Read all of Clara Piccirillo's Posts](#)

Subscribe



Do You Have a Science Question?

Decoded Science is here to help. Click below to submit your question to the experts!



Recent Posts

[GOP Polls: Gingrich's South Carolina Win Puts Him Back on Top](#)

[More Efficient Photovoltaic Plants with Smaller Environmental Impact](#)

[Exploring and Understanding Antarctica's Subglacial Lakes](#)

[New Glass-ceramic Material with Potential Use in Dentistry](#)

[Rush To Judgment: Why People Change Their Minds After Big Elections](#)

[Hip Hop Vocabulary: A Foreign Language Learning Exercise?](#)

[Nitric Oxide – A Newly Discovered Potential Target for Biofilm Control](#)

Recent Comments

[Hazel Trego](#) on [Exxon Valdez, the Notorious Alaskan Oil spill of 1989](#)

[Kestheba](#) on [Language Impacts Society: "Sex," "Gender," and Depression in Patients](#)