



Solar Food Processing

Solar Food Processing includes a variety of methods and technologies.

Using the sun's abundant energy reduces dependency on fossil or bio fuels and therefore can mitigate environmental damage. Solar Food Processing can increase product quality, when compared to traditional food processing methods, and creates sustainable local economic opportunities.

In sunny regions the seasonal surplus of agricultural crops often cannot be processed due to unavailability of decentralised technologies and energy. Solar Food Processing technologies can help in both aspects and therefore have a positive impact on diet and family economy. Moreover, the term "Solar Processed" adds value to a product.

In this brochure ISES presents some encouraging examples of Solar Food Processing, focusing on production and economic activities. It is part of a larger effort to promote Solar Food Processing technologies. The project is sponsored by WISIONS, an initiative of the Wuppertal Institute for Climate, Environment and Energy.



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www.ises.org



www.wisions.net

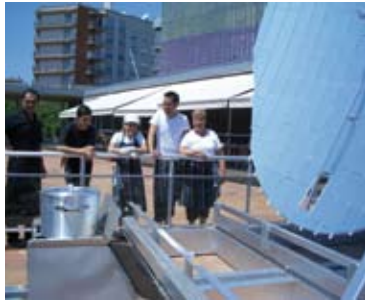
www.solarfood.org



Restaurant, Spain

In 2005 the Museu de la Ciència i de la Tècnica de Catalunya, a science and technology museum located in Terrassa near Barcelona, Spain, installed an 8 m² Scheffler Reflector on the terrace of a private restaurant operated at the museum. Twice a week traditional *Paella* or *Fideuà* is prepared. This way catering and demonstrating solar technology go hand in hand.

www.mnactec.com
www.ecoterra.org



Mobile catering, Switzerland and Germany

Since 1997 CNCS (Centre Neuchâtelois de cuisine solaire), a Swiss company, and ULOG Freiburg in Germany have been using a mobile solar kitchen unit to cater for youth camps and for baking solar pancakes at festivals and fairs in Switzerland, Germany and France during the summer months. Two 2 m² Scheffler Reflectors provide the energy to cook about 30 pancakes per hour. In the evening a phase change solar heat storage element can be used. Backup is provided through gas and wood pellet cookers.



www.ulog.ch
www.solarfood.de
www.solare-bruecke.org



www.cuisinesolaire.com
www.globosol.ch

Solar Cooking

Institutional cooking, India

Large institutions like schools, company canteens and ashrams in India use solar energy to cook. Scheffler reflectors of sizes between 8 and 16 m² are set up in arrays to provide steam for the kitchen.



www.bkun.org/earth/renew.html

www.gadhiasolar.net

84 Scheffler Reflectors of 10m² each provide steam to cook a maximum of 38 000 meals a day at the centre of Brahma Kumaris in Abu Road, Rajasthan.



www.supreme-rays.com

In India, a country with high solar radiation, the sun can be used on clear days to cook for several thousand people while saving several tons of CO₂. The project has proved to be a good investment, as it utilizes the sun's energy and a reliable technology.



Solar Baking

Communal Baking, Argentina

In five villages in the Argentinian Altiplano an 8 m² Scheffler Reflector with oven is used as a public installation for baking. Every day 5 families can bake the bread they need for one week. Thereby saving each of them 20-30 kg of precious firewood. The project was initiated by the cooperative Cultura Pirca in cooperation with the NGO Ecoandina.



Small scale bakery, Namibia

The four women manufacturing solar box cookers for the solar stove project in Oshakati additionally bake around 600 loaves of bread per month and sell it. They use a specially adapted box cooker for small scale baking.



Solar Drying

Fruit bars, South Africa

Elnatan, a non-profit company in Claitzorp at the southern Cape of South Africa, turn different fruits into delicious fruit bars. Pleasant weather allows year round use of the large tunnel dryer. The project has provided seven people with permanent employment and six with seasonal work. Ground fruit is dried and then cut into bars, some of them covered with chocolate or yoghurt, and packaged. Fruit juice is dried to a concentrate. The products are sold to hotels and in the factory's own shop.



elnatanagape@lantic.net

Drying of Spices, North-East India

Since November 2005 an initiative of *AFPRO* (Action for Food Production) has been drying Nagaland chillis and ginger in 4 large tunnel dryers and 4 chimney dryers. About 5 tons of spices are solar processed during 8 to 9 months of the year saving around 8 tons of firewood.



www.solar-alternatives.com

www.afpro.org



Solar Conservation

Fruit & Vegetable Conserves, Argentina

The three sisters Marisa, Rosa and Alicia Mayans run *Hecho en Casa*, a small factory and shop located in Clorinda (Formosa Province). They produce home made canned and dried fruits and vegetables, as well as fruit liquors and concentrated juices. For processing the jams, marmelades, concentrated juices and canned items a 4.5 m² Scheffler Reflector is used. Drying fruit is done in a solar tunnel dryer.

hechoencasa_fsa@
argentina.com



Strawberry Jam, Germany

ULOG Freiburg is a small enterprise producing solar cookers and solar food. A small amount of marmalade is processed in SK 14 and Scheffler Cookers. Since 2006 the introduction of an 8 m² Scheffler cooker with a 30 litre pot has increased production capacity. Solar box cookers are used for baking bread, cake and sweet bars. The production in 2006 was as follows: 50 kg strawberries, 30 kg cherries, 20 kg vegetables. Solar food processing can be done primarily from April to October, but is also possible in winter! Activities also depend on the season of the fruits and the local market.



www.solarfood.de



Solar Roasting

Organic Chocolate, Mexico

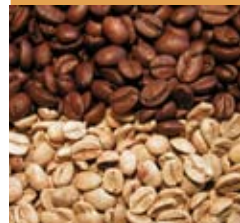
Chocosol produces about 260 kg of solar, organic chocolates every year. The cooperative of 15 people was started in 2004 and exclusively uses a solar reflector called „Fuego Solar“ for roasting the cacao beans and other ingredients like peanuts. The roasting season is 8 to 9 months a year. *Chocosol* organic chocolates and Tejate, a traditional chocolate drink, are sold at the market in Oaxaca.

chocosol@gmail.com



Roasting Coffee, USA

Solar Roast Coffee is a family owned Limited Liability Company (L.L.C.) owned by Michael and David Hartkop. With their 7 m² solar concentrator called *Helios 3* they can roast 2.5 kg of coffee grains in 22 minutes. Using *Helios 3*, instead of a gas fired conventional roaster, about 2 tons of CO₂ emissions are prevented. The company started selling their exclusively organic, fair trade, solar roasted coffees in 2004. In 2007 they will open their first cafe in Colorado.



www.solarroast.com





Solar Food Processing



We welcome you to join the Solar Food Processing Network. The Network can help you to find information about solar food processing or you can share your own projects at

www.solarfood.org

contact:
solarfood@projects.ises.org



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