

Solar power in developing countries

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Sustainable development

- Solar energy has an important role in the sustainable development strategies.
- The environmental problems are limited to the construction, maintenance and disposal.
- Solar energy production does not lead to emissions and does not generate waste.
- The sun's energy used today is not away from future generations and don't decrease the conditions of their life.

Electricity for the poor

- Solar energy can be used to bring electricity to the 1.5 billion people who are without of it in the developing countries.
- Solar energy improves self-sufficiency and prevents desertification.

Breakthrough of The Solar Power

- The problem has been the price of the equipment, the storage of energy produced and prejudices.
- Now, however, a breakthrough is happening. The large power plants and distributed systems spread all around the world.
- Solar panel prices have dropped rapidly in recent years. The devices start to be so cheap that they are available also to the world's poor villages.

Solar Power and Africa

- In Africa solar energy is a necessity in the path out of poverty and to implement self-sufficiency in energy production.
- The energy need of poor can be met by using a variety of complementary solar energy systems:
 - Large centralized systems for the production of electricity
 - Solar panels to rural villages and schools to lighting, to charge cell phones, pumping water from wells for drinking water and for irrigation of fields
 - Solar cookers in villages for making of food and in water purification

Typical kitchen in West-African villages



Technological skills needed

- Centralized systems require large amounts of capital and Western technology. Their construction and maintenance of the systems also requires cooperation with big companies.
- The panels and their preparation are high technology, but their installation and use don't require much training.
- Solar cookers are easy to build from local raw materials, and their use is easy. The technology is there, it's simple and cheap to manufacture and do not require investments. Solar cookers are the most ecological option.

Cultural factors

- The spread of the cookers has been slow. Let's talk about a few hundred thousand or, at most million cookers. However, they can be utilized in hundreds of millions of households.
- The reason has been at least partly cultural factors, that is of undervalued women's work; It is not necessarily in the interest of men in decision-making positions .
- In Africa, dining takes place in a dark time; campfire has also a social unifying effect, which cannot not be replaced by the cooker even if it is built so that food can be kept warm for hours, either in itself or in a separate heat box.
- The use of solar cookers is overshadowed also by other traditions and prejudices. The food is not food without fire cooking. Solar cooker resembles too much witchcraft.
- However, these problems are at least partially solved through education.

Small systems for the poor

- 'Technology for Life' association has been working with solar cookers for decades. Different kind of cookers are exported to developing countries, and people has been trained to build up and use them both in Finland and in developing countries.
- However, the resources of a small NGO are very limited. Bigger projects are needed. For example, cookers and panels can be combined to the same development project or they can be a part of large power plant project. This would increase the attractiveness of the cookers in the villages, where they would be seen as part of the new technology.

Proposal for a working group

- The Ministry of Foreign Affairs should set a working group whose task would be to draw up a plan showing how solar energy can be best integrated into development cooperation projects.
- The plan would cover all types of solar energy production.
- Special attention will be paid to women's work and the basic needs of life of poor people in villages and cities, as well as how solar energy can be best used in climate change mitigation (The whole proposal is published in TEP-Newsletter 1/2014).