Biogas

Many households in rural areas of the EECCA region do not have a reliable energy supply, such as electricity and gas. Small biogas plants are a simple and efficient way of generating energy at household level. Due to cold winters, very simple biogas plants that need warm temperatures to operate, cannot be used. But with a little bit more effort, the manure of 4 – 5 cows is sufficient to supply an average household at least with gas for cooking. More advanced models can even supply a family with gas for heating their house throughout the winter.

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2

Solar energy in rural areas – more examples

1. *biogas plant at SEMA demonstration farm, Ereda, Georgia*
2. *biogas is used for cooking*
3. *solar greenhouse, strawbale construction, RCDA demonstration center, Misaktsieli, Georgia*
4. *solar water distillator, RCDA demonstration center, Misaktsieli, Georgia*
5. *solar oven, RCDA demonstration center, Misaktsieli, Georgia*

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Pro-people, pro-planet:
Sustainable energy in rural areas

The Eastern European, Caucasus and Central Asian region (EECCA) has a continental climate with cold winters. Especially low-income communities in rural areas suffer from lack of safe, sufficient and affordable energy. Poorly maintained energy infrastructure, rising fuel costs and the increasing unpredictability of the climate exacerbate poverty. The lack of energy has severe environmental impacts (e.g. local deforestation from fuel wood collection) as well as health impacts (respiratory problems of women and children from burning of unsafe fuels such as plastic waste). The region has a great potential for renewable energy, especially solar. WECF and its local partners are working together with communities, universities and innovative businesses to demonstrate affordable sustainable energy solutions, using local knowledge and materials.

map source: University of Texas Libraries

About WECF

WECF is an international network of over 100 women's and environmental organisations in 40 countries, implementing projects and advocating globally for a healthy environment for all. WECF's sustainable energy demonstration projects are implemented in the EECCA region (Eastern Europe, Caucasus and Central Asia).

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Solar collectors

People in rural areas of the EECCA region mostly use fossil fuels or biomass (e.g. dried dung) for heating water. The burning of biomass in inefficient stoves creates indoor air pollution, which is especially a problem for women and children who spend most time indoors. Solar water heaters, so-called „solar collectors", are an inexpensive and clean manner of heating water. WECF and its local partners have developed a low-cost, highly efficient solar collector model, which is easy to build with locally available materials, and has the advantage of working year round, even in harsh winter-times.


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1. *small solar collectors made from old radiators, workshop at UGAM demonstration center, Lenger, Kazakhstan*
2. *installation of a solar collector during a solar energy training, UGAM demonstration center, Lenger, Kazakhstan*
3. *self-made solar collectors on the roof of a toilet with bathroom, RCDA demonstration center, Misaktsieli, Georgia*


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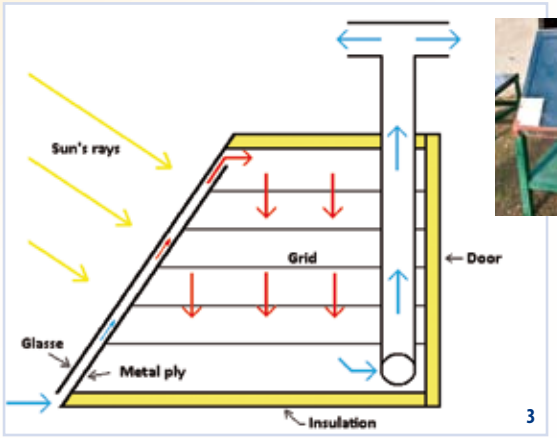
1. *simple solar fruit drier model, here with tea leaves, Najakhao, Georgia*
2. *small solar fruit drier at SEMA demonstration farm, Ereda, Georgia*

3,4 *scheme of solar fruit drier at RCDA demonstration center, Misaktsieli, Georgia*



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Solar fruit driers

Production of dry fruit is quite popular in the whole region, since the climate is dry and sunny. Dry fruits can be stored and transported easily even across long distances. So they can be sold much better and at a much higher price on the market than fresh fruits. Solar fruit driers improve the traditional drying methods for fruits and vegetables, herbs, spices etc. The Fruits are cleaner and greater quantities can be dried faster. Solar driers are also easy and cheap to construct with locally available materials.

Energy efficiency

Winters in most parts of the EECCA region are long and cold, houses are often badly insulated and need a lot of fuel for heating. Especially schools are often insufficiently heated, leading to lower attendance and learning outcomes. Simple measures like insulation of windows can help to improve the situation significantly and contribute to a better learning environment for school children.
By insulation of floors, ceilings and walls using natural and locally available materials like straw and clay, heating expenses of homes can be reduced by 50%.


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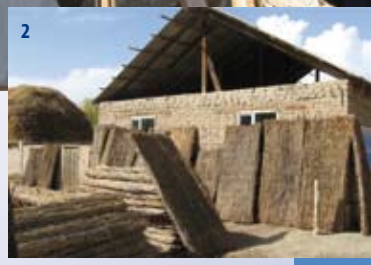
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3

1. *insulation of wall and windows during a workshop, Naryn, Kyrgyzstan*
2. *preparations for house insulation with straw and clay, Naryn, Kyrgyzstan*
3. *roof insulation at a village school, Kommuna, Kyrgyzstan*