

## **Energy Efficient Heating, Renewable Electricity, and Community Renaissance at ZEGG**

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### **ZEGG's New Energy Plan**

ZEGG has implemented a new energy plan after it decommissioned the former wood-chip burner which had served the community well for its first 20 years on the Bad Belzig site (about 80km southwest of Berlin, Germany; see [www.zegg.de/en/](http://www.zegg.de/en/)). The old boiler had an output of 850kW and had been visited by some 1000 people from universities as well as politicians, since it was a pioneering example of its kind. The new system, serving ZEGG's 100 or so residents as well as its many guests, is based around a new solar-assisted biomass heating plant with the following components:

- 250 square meter thermal solar plant
- a new wood-chip fired boiler with 500kW heat output
- a log fired boiler with 350kW heat output
- three combined heat and power (co-generation) plants, delivering 45kW heat and 15kW electricity running on super-renewable wind-gas from Greenpeace wind generators
- heat recovery from a walk-in cooling and freezing unit of the central kitchen

This energy mix means that 100 percent of ZEGG's thermal energy requirements are met from regenerative sources.

In addition to the co-generation plants, in 2011 ZEGG installed a photovoltaic plant of 29 kWp. Together with the already existing PV plant it amounts to 52 kWp electricity produced. The co-generation plants produce electrical energy in a CO<sub>2</sub>-friendly way because the excess thermal energy produced is used directly for heating water and buildings. This leads to CO<sub>2</sub> savings of more than 66,000 kg per year!

The electricity used by ZEGG is 100 percent regenerative. The combination of co-generation plants and PV panels meets about 90 percent of ZEGG's electricity demand. The rest is bought from Greenpeace-Energy.

ZEGG also completely renewed the underground site heating network. Deterioration of the pipes had led to heat losses of up to 15 percent (c. 150kW), which will now be reduced to around four percent. Reducing energy losses through insulation is more important than producing (even renewable) energy. For this reason, we are also insulating the existing buildings on the ZEGG site using renewable materials. At the rate of one building every couple of years, we apply full thermal installation, including work on the facades, windows, roofs, and floors. This also needs to be combined with more energy efficiency like LED lighting, energy efficient household tools, etc. During the first 20 years of the heating grid's existence the heating energy demand dropped by more than 30 percent even though extra houses were connected to it—largely because of additional insulation and other improvements. These new investments ensure that ZEGG continues to be a model center when it comes to the use of renewable and regional energy sources.

### **New Energy from Holocracy**

Restructuring the community and work areas to a holocratic system and organization two years ago helped us to take the necessary steps towards greater ecological sustainability. Decisions become faster and simpler to make and went very smoothly and easily here. Of course our long-famed training in working very intensively with ZEGG-FORUM and other methods has shaped our

operational mode. We've learned to listen more to what moves others. It's helped us to decide to spend loads of money (around 800,000€)—which we essentially do not have—on being a very sustainable model; of course it will also save us money in the future from lower costs for fuel.

Our decision was well thought through, and acceptance was unanimous (we still use consensus decision making). As we are operating without inspired leaders or gurus, or a common ideology or creed, the fact that it worked easily reflects how much we've worked to develop good communication.

One topic where we do have arguments is whether to invest more in the seminar center for the guests that provide our main income, or to focus on better living conditions for ourselves, the people who run the seminar center. The first might generate more revenue or secure the income we have; the latter makes life better for us. But the focus on using renewables and being sustainable was never much of a debate.

### **Personal Choices and the Costs of Sustainability**

Our ecological success as a community does not always extend to the “private sector” here. When it comes to the personal decisions we make individually—whether we use trains, buses, or bicycles in our travel plans, or airplanes and cars, like most of the rest of society—we aren't as consistent. Renewable things cost much more than non-renewables; taking a train is much more expensive than flying. We all feel constantly short of money, don't we?

While many are passionate about living sustainably, quite a few others in the community see steps toward a sustainable lifestyle as inconvenient. They believe they have sacrificed so much all their lives that now they want to focus more on their own comfort. Many still do choose to fly or to shop for “cheap and fast” rather than conscious and responsible.

Maybe this is a reaction against the dominance of community matters and values during the pioneering years? Then the private or personal came second or third, not first. First came service to the community and the world, as we were out to find a model of living that could counter all the atrocities we call daily life today. This did not feel like a sacrifice then, and even today I see it as being of service to something higher than just my own needs. Of course, this is all easier given that my basic needs are met anyway.

One very important aspect of it all is that we are not dogmatic about our lifestyles. We do what we can and acknowledge the limits to this as well. It is a relaxed striving towards being as sustainable as we could be. This way seems better for our hearts—and healed hearts then will take more care of the earth by themselves, without dogmas.

### **Where We Are Now**

We are proud to have grown out of a very dogmatic community (“we know what the world needs and how we all need to live and we lead the way far beyond anyone else”) during our first 15 years, to become a very welcoming and diverse place, open to all aspects of life, during our last 20 years. Sometimes I wonder if we are too diverse and in need of some more focus—but as it looks now, this focus could be coming as more and more of us are hearing this calling. A growing number of ZEGG people want to bring their actions into better alignment with their knowledge and thinking.

We also celebrate that we've continued to exist since 1978! To last this long, we must have learned something about social communication and cooperation. At ZEGG, I notice a high level of self-responsibility and self-reflection in most communication—very different from elsewhere in

society.

As I see it, we are still far from ideal (keep in mind that I write and hold trainings about integral community building). We may rest on past successes and forgot that it takes constant *effort* to maintain what we've established. Past effort wears off. We don't have a common practice of ZEGG-FORUM any more. We have common Forum work in the community about four to five times a year, when we all meet to prepare plans or rebuild community.

Just starting is a renaissance of a striving for community intimacy, after years when most here strove mainly for intimacy with a partner or with self. If it becomes strong, it will rekindle and reawaken our communication and transparency skills and practices, which have lain underused or dormant.

### **New Soil**

One recent practical idea is kindling enthusiasm now—reawakening a longing to be of relevance for the world around us. We are working on a plan to replace all our flush toilets with dry separating toilets, using the urine and faeces in Terra Preta soils to restore fertility, save lots of water, and sequester carbon from the atmosphere (partly in biochar produced from organic waste materials). The grey water from showers and sinks would be cleaned and reused for irrigation and washing machines, turning us into a wastewater-free model settlement of the future.

I believe this would also bring us to more individual sustainability thinking and choices in our “private” lives. In many moments I can hear and feel the renewed change and the longing for yet a more coherent path together. So stay tuned!

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