



SolabCool

How cool is waste heat?

What if you could use waste or ecologically produced heat to power highly efficient cooling systems? In September 2013 one of the first KIC InnoEnergy innovation projects, Storage, launched SolabCool, a new business venture that brings to the market exactly that.

Henk De Beijer, inventor and entrepreneur in the energy market, spotted a hole in the market in the Netherlands, where 500,000 homes are connected to a heat grid. The grid is highly efficient in the winter, but in the summer it can be hard to find customers with a need for the produced heat.



About KIC InnoEnergy

KIC InnoEnergy SE is a European company that fosters the knowledge triangle of education, research and business in order to boost innovation and entrepreneurship. Our strategic objective is to become the leading engine for innovation and entrepreneurship in the field of sustainable energy in the world. KIC InnoEnergy is, along with Climate and ICT Labs, one of the three Knowledge and Innovation Communities (KICs) created under the leadership of the European Institute of Innovation and Technology (EIT). We are a commercial company with 27 shareholders that include top ranking industries, research centres and universities - all of them key players in the energy field. More than 100 additional partners contribute to our activities, forming a dynamic network that is always open to new entrants that will further our pursuit of excellence.

KIC InnoEnergy is profit oriented, but has a "not for dividend" financial strategy; we reinvest any profits generated in our activities.

Foreseeable impact

If we take 100 as the cost of any good produced or consumed in Europe, 27% is energy cost. Thus, just 1% of reduction in the cost of energy will represent €20B of savings, ensuring increased competitiveness in the European industry.

info@kic-innoenergy.com
www.kic-innoenergy.com

Success story. **SolabCool**



Heat for cooling?

Using excess heat for cooling systems seems contradictory, but De Beijer insists it makes perfect sense. "To give you an example, the waste incineration plant in the village of Duiven in the Netherlands supplies 70MW of heat to dwellings and buildings in the winter and only 7MW in the summer," he explains. "Heat sales can be increased substantially if it is sold for cooling in the summer. Without any adjustments, that heat can be transported through the same pipes to the same buildings, and used for cooling."

Aart De Geus, project coordinator of the Storage innovation project, explains further. "A solid, such as silica, adsorbs water damp. The silica is heated until the water dampens out and condenses. Now, if you wish to evaporate the water again, you will need to add heat. That heat comes from the surrounding area: the building or office that needs to be cooled. And voilà, we have a cool environment!"

Currently this technique is only used in industrial environments, due to the cost and size of the system, the necessary high temperatures and the use of chemical fluids. This is where Henk De Beijer and his team come in with their innovative idea.

Storage, an innovation project

Armed with a strong concept and a business and sales plan, De Beijer's team teamed up with TNO (a Dutch independent research organisation) and the Eindhoven University of Technology (TU Eindhoven) for one of KIC InnoEnergy's first innovation projects, 'Storage'. Together they developed a small, highly efficient and sustainable cooling system. Two years later, SolabCool's preproduction plant was born, and today there are 7 people working in production, marketing and sales.

The product is currently undergoing field-testing to iron out differences between the new, industrially produced system and the prototypes. "We want to have a product that installers can get up and running independently from us," De Beijer clarifies. "So far these tests are going well. There are of course a few details that need to be adjusted and redefined, but this is what field tests are for."

Starting 2015, the plant will go into full production, selling two products: **SolabCascade**, a modular SolabCool system for small companies, and the **SolabChiller**, optimised for homes. The first target will be the market in the Netherlands, where the heat nets have a great surplus of heat in the summer, and the installation of air conditioning systems goes up by 4 to 5% each year.

The following target is the solar cooling market in the south of Europe. The number of AC systems is rising in this region too, using plenty of waste electricity. As SolabCool is driven by moderate temperatures it will require hardly any adjustments to make it suitable for the solar application. Thirdly, the company has its eye on Germany, where many buildings and complexes are already attached to a CHP unit. These heat engines, producing both electricity and heat are perfectly suited for SolabCool's systems.

KIC InnoEnergy Powered

Henk De Beijer credits KIC InnoEnergy's large knowledge network as instrumental in creating added value to the technology. "It's very valuable to be able to check ideas and concepts with other scientists," he affirms. "The scientific support sped up the development process considerably and allowed us to deliver a higher quality product. KIC InnoEnergy's market network also played a role: at their Business Booster event in Barcelona, a leading European energy utility company showed interest in the SolabCool technology."

The Future

"SolabCool has one more year within the innovation project, then once the production process finishes, it will start standing on its own. I think their future looks bright". – states Aart de Geus.

De Beijer's stated aim is to go quickly from selling 3,000 systems a year to 100,000, and to export cooling systems from Europe to China and the United States, rather than the other way round. With a number of new European laws for the protection of the ozone layer working to SolabCool's advantage, large-scale success may be just around the corner.

If you would like to know more about KIC InnoEnergy's Business Booster event, connecting our incubated ventures with industry and investors, check: www.kic-innoenergybb.com

