

Press Release

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carbonclean and EEW strengthen collaboration in Carnot Batteries: Developing thermal waste utilisation plants into flexible storage power plants

- EEW and carbonclean seek to store renewable energy generated from the resource waste for later use.
- A Carnot Battery, a high temperature ceramic energy storage system, can store electricity in the form of heat, releasing it again later as electricity.
- Carnot Batteries increase the flexibility of electricity production in power plants and can play an important role in the volatile renewable electricity markets of the future.

EEW Energy from Waste GmbH (EEW) has commissioned Carbon-Clean Technologies GmbH (carbonclean) to conduct a feasibility study. The two companies are thereby strengthening their collaboration. The primary goals are to both validate the technical concept of the integration of the Carnot Battery into waste utilisation plants and to build economic operating models in the increasingly differentiated markets for electricity and heat supply. The project is co-funded by the European Regional Development Fund.

Bernard M. Kemper, Chief Executive Officer of EEW: „Two things will be critical for the energy markets of the future: renewable energy sources and the flexibility of energy suppliers.“ With an average proportion of 50 percent biogenic materials in the waste, this share of energy produced in waste utilisation plants is recognised as coming from renewable sources. Efforts to improve the flexibility of waste utilisation plants are only now starting because the necessary technologies have not been available. With the Carnot Battery, however, it is now possible to make the renewable electricity generated from waste available at exactly the times it is needed. Currently, this function is mostly performed by fossil-fuelled power plants.

carbonclean has developed a technology, the Carnot Battery, with which waste utilisation plants can be integrated into the energy markets as flexible storage power plants. EEW is, through this partnership, conducting the first investigation of this technology in Germany.

Lars Zoellner, CEO of carbonclean: “The partnership with EEW, the market leader in thermal waste treatment, will generate valuable results for the development and operation of our Carnot Battery. We see this partnership as a significant step towards bringing our technology to market. Our technology has the potential to make a significant contribution to the low carbon energy transition.”

As fossil-fuelled power plants are being phased out, waste incineration plants will play an increasingly important role in the electricity and heating markets because of their important and continuing role in the clean disposal of household waste. Developing these plants into storage power plants, enables them to better support the future renewable energy system in both electricity and heat generation.

With over 50 years of expertise and innovation in the field, EEW has developed waste treatment into a highly efficient process. “EEW does more than simply treat and recycle waste safely and reliably. Today, we are an important part of the circular economy and are building Energy from Waste to be an intelligent component of the low carbon energy transition,” says Bernard M. Kemper. “We see carbonclean’s innovative storage technology as a pioneering element of our business development which targets sustainability. We look forward to the collaboration and to the test of the technology at one of our sites.”

About EEW:

EEW Energy from Waste (EEW) is a European leader in the thermal utilisation of waste and sewage sludge. To sustainably utilise the energy contained in these resources, the company designs, builds and operates energy from waste plants with cutting-edge technology. EEW therefore plays an essential role in a sustainable circular economy. Currently, 1,150 employees at the EEW Group’s 18 plants in Germany and neighbouring countries are responsible for the energy recovery of up to 5 million tonnes of waste per year. EEW transforms the energy contained in the waste, providing it in the form of process steam for industrial plants, district heating for residential areas, and eco-friendly electricity. The recovery of energy from waste at EEW’s plants conserves natural resources, reclaims valuable raw materials and reduces carbon emissions.

About carbonclean:

Carbon-Clean Technologies GmbH, founded in 2008 in Cologne, has developed a ceramic high temperature storage technology in collaboration with the Institute for Energy Systems and Technology at the Technical University of Darmstadt since 2013. The storage technology enables thermal power plants to better support renewable generation by increasing flexibility and enables sector coupling between the electricity and industrial or district heating supply.

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