

e-woodstove

The first e-woodstove in the world, a wood-nano-cogeneration unit (CGU) for use in the home for the generation of heat, service water and electricity, produces 15-22 kW for heating and service water and 250 watts of electricity. Also available as a boiler for the heating room.

The technologies

Wood gasification: the waste gases from the combustion chamber are not fed directly into the chimney (as in conventional stoves) but redirected into a second chamber for post-combustion. This increases the energy utilisation of firewood to > 92%

Power generation: by means of thermoelectric generators (TEGs), which allow a direct conversion of the heat energy created by the wood fire into electrical energy (Seebeck effect)

Maintenance free

Thermoelectric generators have been used for many decades as a reliable technology for providing energy to space probes far distant from the earth.

Unlike conventionally operated CGUs with service-intensive Stirling motors, thermoelectric modules are completely maintenance-free and function silently.

www.e-woodstove.com

A world first

The electricity-producing generators are the “energy heart” of the e-woodstove. In order to generate electricity on a sustainable basis, the wood-gasifier has been completely redeveloped and – as it were – built around the “energy heart”. This allows for the optimal use of the thermoelectric modules.

Emergency wood-based power generator

The e-woodstove works with peripheral accessories (battery and inverter) – even in the event of a power failure, when conventional heating devices fail.

The wood fire of the e-stove warms up the house and the shower water. The electricity generated supplies the heating pumps, the control unit, the LED lighting, etc.



Thermoelectric generators consist of a large number of thermoelectric modules

Products

e-woodstove zero

water-bearing with high efficient wood-nano-cogeneration unit for the generation of heat and domestic hot water prepared for subsequent installation of a power e-modul with 250W

e-woodstove 250W

e-stove with standard power e-module 250 watts

Diverse e-woodstove coverings

ELECTRICITY FROM WOOD
with maintenance free and soundless Thermoelectric Generator



Your benefits

Efficiency

- Less wood consumption – up to 4 hours burning per wood charge
- Easy to clean
- No maintenance of the power generators required
- Optimal in combination with photovoltaic systems
- Less dependency on volatile oil, gas and electricity prices
- Made in Germany: top-quality material, long service life

Environmental factors

- Thanks to its high degree of efficiency (> 92%), significantly less use of wood than with conventional stoves and correspondingly lower emissions of particulates and greenhouse gases (GHGs)

Why the e-woodstove?

Thanks to its high thermal output, the e-woodstove can be used as a supplementary heating and a living room heater as well as both as a heating system in its own right and a hot-water generator for the home.

Depending on the electrical technology used, the electricity generated can be directly used for domestic consumption, or alternatively, either stored in an appropriate battery system or used for heating, the fridge, charging devices and similar via an island inverter.

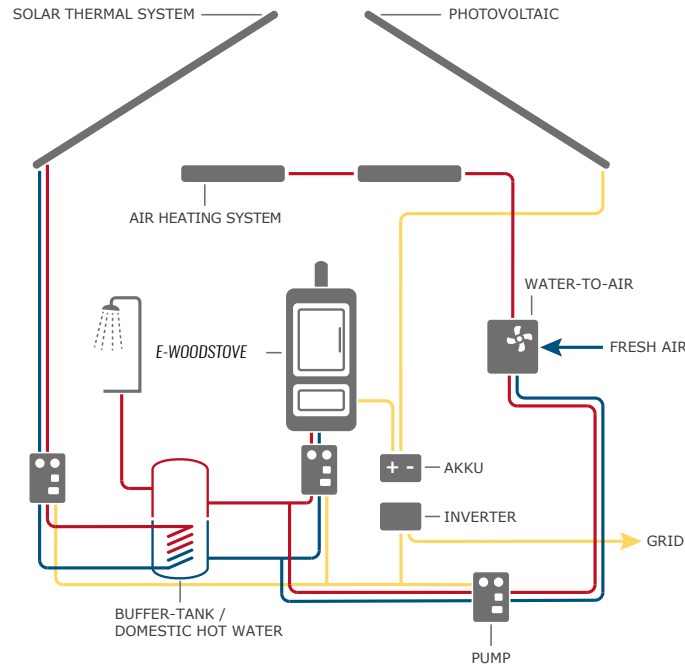
Developer team

The team consisting of experienced and creative engineers as well as sales and marketing experts are developing the e-stove in cooperation with partners from the world of science and research.

Located directly on the edge of the harbour in the Hanseatic City of Wismar, in the Centre for Technology and Research (TFZ) designed by the French star architect Jean Nouvel, are the premises of the HE Energy GmbH company – consisting of office, construction, laboratory and production.

Horst Erichsen is the managing director of HE Energy GmbH with over 30 years of experience in project development and control in the field of “renewable energies” and the sale of wood-fired heating and solar panels.

Installation diagram



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Project partners

- Deutsches Zentrum für Luft- und Raumfahrt (DLR e.V.), Cologne
- Deutsches Biomasseforschungszentrum gGmbH (DBFZ), Leipzig, A company of the Federal Republic of Germany represented by the Federal Ministry of Food and Agriculture (BMEL)
- Fraunhofer-Institut für Physikalische Messtechnik (IPM), Freiburg
- Fraunhofer-Institut für Keramische Technologien und Systeme (IKTS), Dresden
- The An-Institut of the University of Applied Sciences in Wismar, Institut für Polymertechnologien e.V. (IPT), Wismar
- Hochschule Wismar, University of Applied Sciences with the faculties of architecture and design and economics



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