



## Wooden house uses renewable energy

A couple from Estonia decided to use renewable energy and installed an Inverter Mini, Thermia's latest and most advanced inverter-driven ground source heat pump. Using heat pumps is an innovative and creative way of taking action to protect the environment and is a solution that will contribute positively to reducing CO<sub>2</sub> emissions in the years to come.





House from the front

### Modern, wooden family house

The single-family house is located in Luige, 15 km south of the Estonian capital Tallinn. The house was constructed by Timbeco, a company that specializes in building customized pre-fabricated houses, made predominantly

of wood. These houses are well insulated and are characterized by low heat losses. The house provides 138 m<sup>2</sup> of living space and has a 41.5 m<sup>2</sup> garage, giving a total area to be heated of 180 m<sup>2</sup>. Thanks to the advanced Thermia solution, this requires just 6.4 kW of heating energy. To maximize living comfort and keep running costs as low as possible, the couple chose to install a water-based floor heating system.

### Green solution from Thermia

The Inverter Mini installed in the house can provide both heating and cooling and is Thermia's latest and most advanced inverter-driven ground source heat pump. In addition, the Inverter Mini offers the fastest and most cost-efficient hot water production in its segment. This is enabled by two technologies developed by Thermia: the inverter itself and tap water stratification with a built-in 180-liter water tank. In daily use, this means there is no problem



Thermia Inverter Mini

*'...one of the best heat pumps in its segment, the Inverter Mini is ideally suited to wooden houses and a green lifestyle...'*

**Toomas Kibus,**  
Product Manager,  
Airwave Estonia

## Fact Box

### Location:

Luige, near Tallinn in Estonia

### Building characteristics:

- Heat demand: 6,4 kW
- Heat distribution system: 35/30 C
- Occupants: 2

### Applied solution:

Geothermal heating

- 2 x 250 m horizontal ground loops
- Thermia Inverter Mini 1,5 – 7 kW
- Cost and CO<sub>2</sub> savings: 50% compared with a gas- or oil-fired system

**Completion date:** 2018



View of the house from the garden

meeting high hot water demands in the morning or evening.

*“The new heat pump can meet the requirements of the most demanding homeowners and is in a class of its own in terms of hot water production. Moreover, the new mechanical design makes the Inverter Mini the quietest heat pump in its segment. During operation, the sound level can be as low as 29 dB, which is comparable to the noise of rustling leaves. This makes it ideal for installation in a wooden house situated in a quiet suburb”, explained Toomas Kibus from Airwave, Thermia’s representative in Estonia.*

When equipped with optional accessories, the Inverter Mini can provide pleasant cooling during the summer months. By taking advantage of the cool brine in the ground loop, cooling is created at a cost equivalent to the energy consumption of a couple of light bulbs. Cooling produced by a

ground source heat pump is significantly more cost efficient than traditional air conditioning. The Inverter Mini’s control system can be directly connected to the internet, allowing the user to monitor the heat pump from any smartphone, computer or tablet. The ‘Thermia Online’ app that enables this functionality is available for both Android and iPhone operating systems.

### Environmental footprint awareness

The new Inverter Mini provides extremely energy-efficient heating and guarantees comfort, all year round. Compared to a conventional installation based on gas or oil, the new system uses 70% less energy while reducing both costs and CO<sub>2</sub> emissions by around 50%.



Heating room



AIR WAVE

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Airwave LLC is one of the largest heating, ventilation and air conditioning systems suppliers in the Baltic States and has been active in this field since 1999. With head offices in Tallinn, Riga and Vilnius, the company distributes equipment throughout Estonia, Latvia and Lithuania. Airwave’s product range includes heat pumps, air conditioners, ventilation machines, humidifiers, dehumidifiers, water chillers, installation accessories and tools. We are a major authorized distributor and service center for leading international brands in heating and air-conditioning. Our customers include professional cooling and ventilation equipment installation companies and the contractors of specialized equipment for HVAC applications. Airwave has over 200 regular customers across the Baltic region.



K&S Torutööd OÜ is a leading installation company with vast experience in geothermal energy that offers its customers a complete solution. K&S Torutööd OÜ can supply and manage all phases of the project, from design to drilling the borehole and installing the ground source heat distribution system, right up to the commissioning of the whole heating and ventilation system. K&S Torutööd OÜ provides a comprehensive service for the entire system, enabling its customers to enjoy efficient, reliable and sustainable energy systems for many years to come.



Airwave OÜ

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### Pioneering heat pumps

For the last 50 years, we have dedicated all our resources and knowledge to developing and endlessly refining one product: the heat pump. Our focus on geothermal energy has given us world leading knowledge in heat pump technology.



### Engineered with passion

Developing truly sustainable renewable energy solutions can only be achieved with passionate, dedicated, and uncompromising experts. Some of Europe’s most highly qualified engineers can be found in our own R&D center.



### Born in Sweden

All our products are designed, manufactured, and tested in Sweden using the latest technology and the highest quality components. All components inside our ground source heat pumps are made in Europe by world-leading industry specialists.

