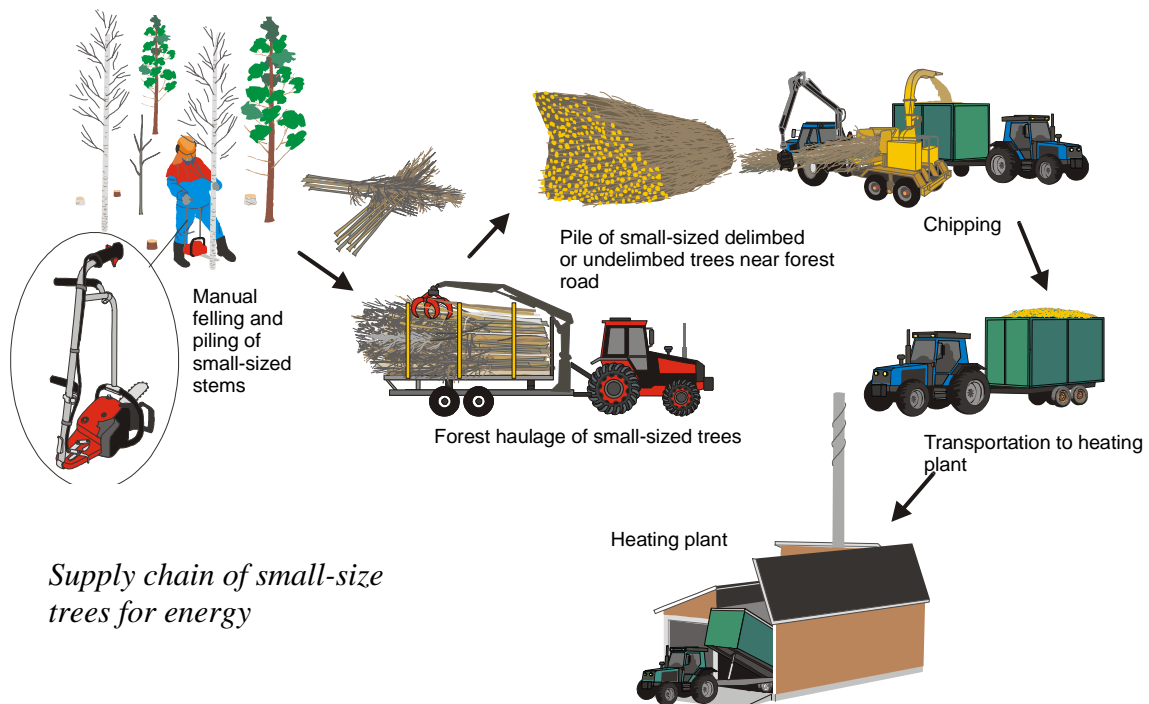


# The Rahkola Energy Cooperative

*The Rahkola Energy Cooperative is situated in Saarijärvi . Saarijärvi is a municipality in Central Finland locating 350 km north from Helsinki. The Rahkola Cooperative was founded in 2003 and members are local forest owners. The cooperative is responsible for fuel supply and operation and management of Ariterm Oy boiler factory and shopping centre in Saarijärvi.*



*Supply chain of small-size trees for energy*

## Pioneers of the field

A group of four forest owners in Saarijärvi founded the Rahkola Energy Cooperative in 2003. The operation started with the heating of the premises of Ariterm Oy, and a shopping centre located in Saarijärvi joined the cooperation later. Right from the beginning, the cooperative has aimed at utilising the machines and competencies of the associates as much as possible in its operations.

## Reliability of operation with high-quality fuel

In the production of heat, the cooperative is compensated according to the amount of produced heat. The humidity of each delivered load of fuel is determined, which indicates its energy content. 2/3 of the fuel has come from the forests of the associates themselves, and the rest has been bought directly

from private forest owners. Cooperation with the forestry society will be increased in the future in order to facilitate the procurement of raw material. Stem-wood chips have been the primary raw material for fuel. Good, homogenous chips ensure the trouble-free operation of the burning equipment.

Pine cones purchased at the nearby nursery garden have previously been used as fuel, too. The cones have been excellent fuel, because their humidity is 6–8% due to the drying performed during seed production. The cones have been transported with a tractor-drawn trailer of 40 m<sup>3</sup>, so that the 30-kilometre distance has not prevented the acquisition of good fuel.

## Heating of Ariterm Oy – boiler manufacturer’s premises

Ariterm Oy is a Finnish small-scale biomass boiler manufacturer. Arimax bioenergy boilers and devices are designed for use with biomass fuels. The product range

includes boilers in output ranges 40-3000 kW and whole heating systems up to 500 kW. Factory-made heating centres, so-called containers, are manufactured for wood chip and pellet in output ranges 40-500 kW.

Since the year 2003, the premises of Ariterm Oy have been heated with an Arimax Bio 400 boiler and an Arimax Bio Jet 400 burner. The factory owns the premises and the equipment. The cooperative is in charge of fuel supply and heat production for the property, including fault resetting and ash removal. Annual energy consumption has varied between 650 and 900 MWh, and the consumption of chips respectively between 700 and 1200 bulk m<sup>3</sup>.



Ariterm Oy factory premises. Photo. Ariterm Oy.



The boiler of the Ariterm Oy factory. Photo: Ariterm Oy.

## The shopping centre

During the year 2005, the cooperative built a heating plant within the premises of a shopping centre in Saarijärvi. Heating started in November 2005, and the investments were 85 000 euros. The equipment includes an Arimax Bio 300 boiler and an Arimax Bio Jet 300 burner. Over 300 MWh of heat energy have been produced in less than a year. The heated premises consist of two separate parts, and the amount of produced energy is determined with two different energy meters.

## The Rahkola cooperative in brief



Year of foundation	2003
Members	4 associates
Heated premises	Ariterm factory and office A shopping centre
Boilers, kW	400 kW (Ariterm Oy) 300 kW (shopping centre)
Annual energy production	650 – 900 MWh (Ariterm) 350 MWh (shopping centre)

## Contact information

*Mr Simo Kuhno*  
Rintalantie 98, FI-43100 SAARIJÄRVI  
Tel: +358 14 421799, +358 40 593 2346  
Email: kuhno.simo@reppu.net

Ariterm Oy  
Boiler manufacturer  
www.ariterm.fi

Produced by Jyväskylä University of Applied Sciences and VTT, May 2007