



Republic of Karelia

**Municipal Entity
City of Kostomuksha**



City of Kostomuksha



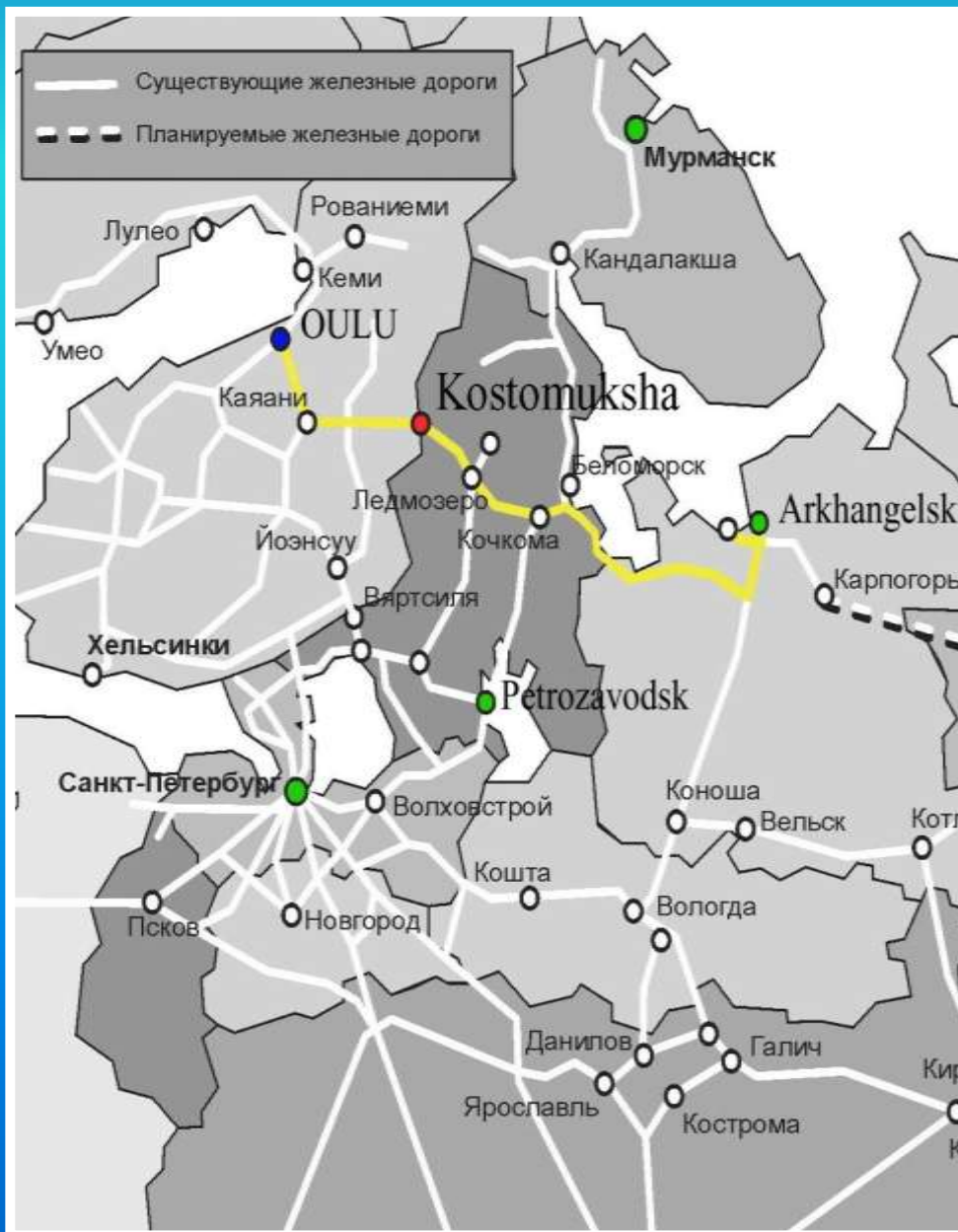
Foundation – 25th April, 1983

**Population size – 30,0 t.
people**

Area – 4,046 t. km²

Settlements – 7 (6 rural)

Communication Lines



**Distance from
Kostomuksha as far as**

Helsinki – 720 km

St.Petersburg – 900 km

Murmansk – 800 km

Petrozavodsk – 500 km

Arkhangelsk – 750 km

Moscow – 1400 km

Kajaani – 165 km

Oulu – 300 km

Kostomuksha – territory of implemented projects



PIK – Border industrial complex



Enterprises
«**Sibirit-3**»,
OOO «**Istern mining services**»,
«**Orica CIS**»
represent chemical industry



OOO «**SWEDWOOD-KARELIA**»
- wood-processing plant
- construction of the branch
(furniture factory «**IKEA**»)



«**PKC-group**»
- finnish enterprise
(electric-equipment for
trucks «**VOLVO**»)

Why do we take an active part in the international co-operation?

- Getting new knowledges
- Realisation of the purposes
- Establishment of the relationships

Dialogue between the local goverment and the participants of the project.

New possibilities in the development of enterprise.

Positive experience of international activities and implementation it on our territory.

Changing the way of thinking, the way of life.

Purpose:
Improving the efficiency of heating

Company Sweco Systems Umeå analysis of the energy balance of the city.

Today we have:

Central heating of the mining company (Severstal –Karelian Pellet)- consumes 75 000 tonnes oil for heating, amount 375 000 GCal

Kostamus city has a consumption of 237 000 GCal / 2010 and consumes 220-225 000 Gcal during an average year . The area of the city housing stock – 545 thousand square meters.

Per 1 sq. m of housing stock 0,29 GCal /year

Tasks:

Improving the efficiency of heating:

- Construction of city-fuel boiler using alternative biofuel.
- Modernization of heating production on the public corporation (Severstal – Karelian Pellet).

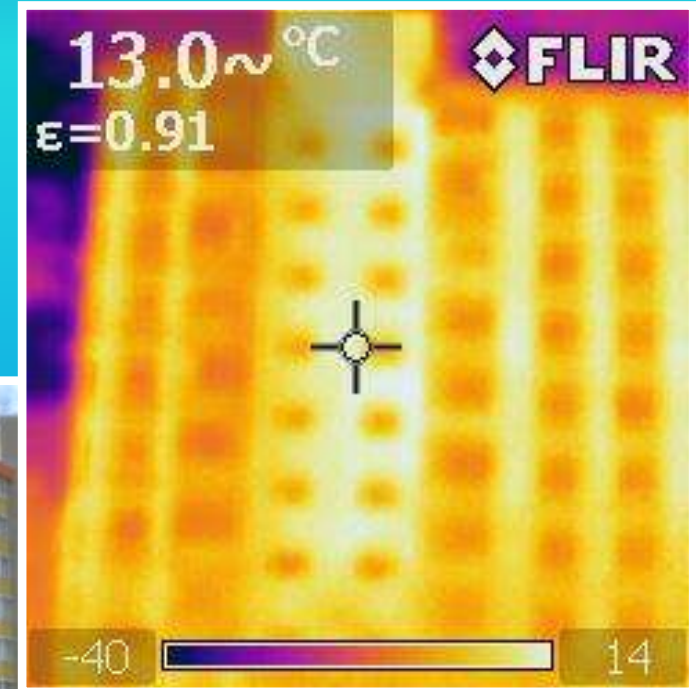
Reduction of losses and the specific gravity consumption of heat for 1 sq. meter housing stock:

- The transition to a closed heating system.
- Installation of commercial metering devices to each customer.
- Implementation of advanced energy saving technologies

Our steps:

Made an Energy Plan for Kostomuksha

In 2011, together with Swedish partners on the project by SWECO (with financial support from NEFCO)



Kostomuksha - Action Plan

- **Education among personnel within sustainability, use of energy and energy costs, education /information to citizens about energy savings that they can implement by themselves/**
- **Energy inventories, energy passports for buildings**
- **Create a project together with (Severstal-Karelian Pellet) about energy recycling of surplus heat from iron pellets production**
- **Installation of measuring equipment for consumption/use of heat and water**
- **Change the charging/invoicing system so that everyone has to pay for real consumption, not according to estimations and norms**
- **Install steering and control systems for heat production and consumption of heat**

Kostomuksha - Action Plan

- **Rebuild the sub centrals for heat in such way that heat and water systems for buildings can be separated from the primary system (culvert system and production facilities)**
- **Install frequency controlled pumps in the culvert system so that the flow can vary according to the actual need**
- **Adjust the heating system to distribute the heat within the building to avoid uneven temperatures and that the best located buildings have to loose heat in favour to “not so good located” buildings**
- **At the hospital and other similar buildings there is a system used with circulation of air, supply air and exhaust air, here it could be installed systems for recycling of heat**
- **Modernize the street light system to use LED-lamps and low energy lamps.**
- **Change water taps to such models that uses a “low flow/low pressure**

Heating station on the Biofuel-Construction

Implementation period of the project - 2011-2014 years

Power - 50 MW

The volume of produced heat – 250 000 Gcal

The volume of investments - 1 050 mln. rubl.

or 26 mln euros



Current situation: :

- ✓ allocated land
- ✓ performed with the assistance of the Finnish company ” Pro-TEAM” feasibility study
- ✓ started the preparation of raw materials (in the District allocated 250 hectares of peat bogs of 1,000 ha required)
- ✓ need for potential investors



Modernization of the heat production - public corporation Severstal-Karelian Pellet

**The use of waste heat roasting machines for heating of buildings.
Reduce the cost of production of heat.**

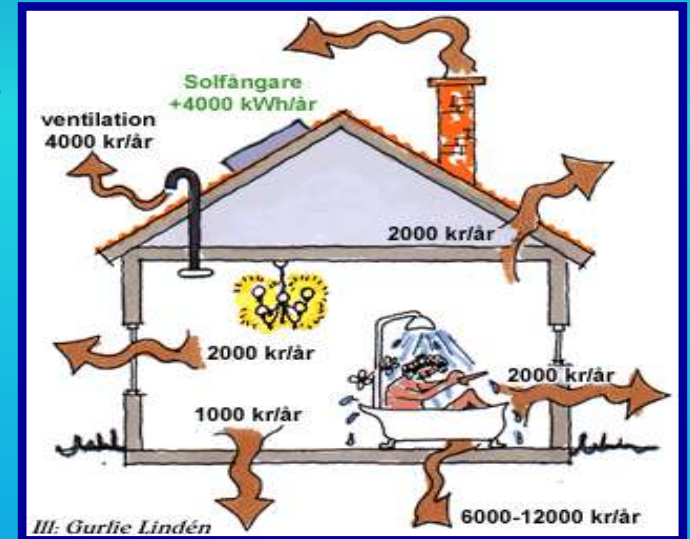


Modernization of boiler systems

measures will reduce the transaction costs of production and transfer of thermal energy.

Modernization- system of the heat distribution and the introduction energy-saving equipment for city facilities

1. Implementation of systems for heat: 47 meters measuring equipment or 34% of the total number of houses. Total number houses 138
2. The formation of a civil conscience for economical use of public resources
3. The use of energy-saving technologies in buildings



4. The use of energy-saving technologies while constructing the industrial buildings and residential houses
5. The transition to a closed heating system
6. Implementation of the recovery systems

Result

Implementation of these measures, according to Swedish specialists Sweco Systems Umeå will reduce the heat consumption of up to 40%

SWECO 



Future- cooperation
Vesterbotten County
(Sweco Systems and Avec Group)

- 1. Finding suitable technology for taking care of surplus heat in Karelian Pellet for heating the city of Kostamuksha**
- 2. Implementation of Energy plan in the city, follow up activities**
- 3. Creating a turn key solution for renovation of the plant for waste water and sludge treatment.**
- 4. Testing certain devices for measuring the energy consumption in houses, buildings and blocks of apartments in one certain area of the city.**

Welcome to Kostomuksha

www.kostomuksha-city.ru