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Improving the Climate and Energy Programme and its Implementation Plan

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North Karelia, forest region in Eastern Finland

- North Karelia is a province of Finland and the easternmost region of continental Europe
- Population 162 500
- Number of municipalities 13, of which 5 are towns
- Regional centre Joensuu is a university city
- Total area 23,000 km²
- Forests: 70 % of total area, 89 % of land area



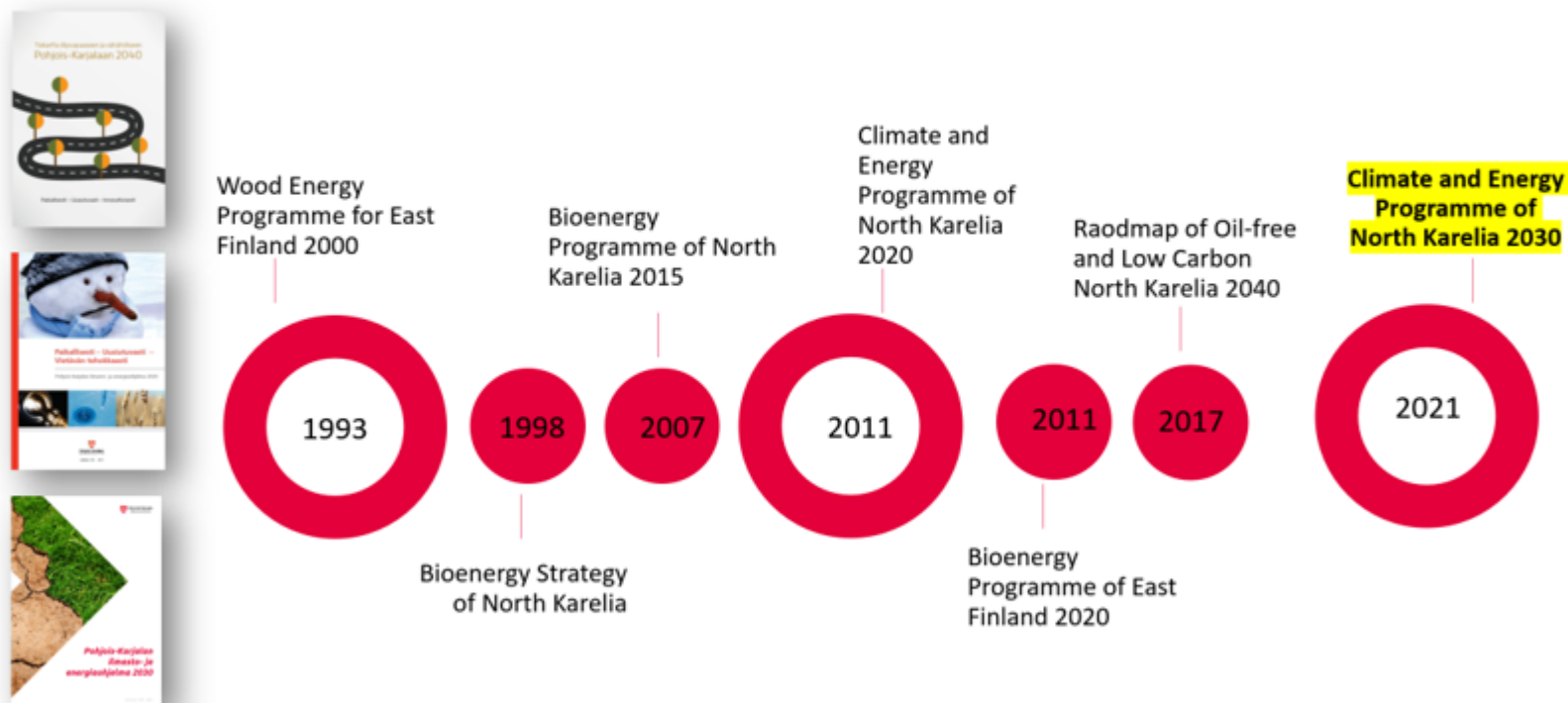
North Karelia Climate and Energy Programme 2030 1/3

- Presents the region with important objectives of climate change mitigation and adaptation. They combine the protection of business, well-being and biodiversity.
- Opens up new opportunities for increasingly diverse business life and brings together the objectives of the regional programmes and strategies.
- Implements the EU 's and Finland' s climate and energy targets regionally. The main objective and vision is that North Karelia will be a forerunner in climate sustainability in Finland by 2030.
- Has been jointly prepared by the Regional Council of North Karelia and the Centre for Economic Development, Transport and the Environment for North Karelia, in a wide co-operation with municipalities and other stakeholders in the area.



North Karelia and the Climate and Energy Programme 2/3

Timeline of our strategic climate and energy work



NORTH KARELIA

North Karelia Climate and Energy Programme 2030 3/3

Great direction in the region

- **Renewable energy** accounts for 71 % of all energy use
- RE Target 80 % 2030
- **Greenhouse gas emissions** decreased already -34 % (2007-2020)
- GHG emission target -80 % 2030

Energy in North Karelia

Energy	2018	2020
Total energy consumption	11,8 TWh	11,3 TWh
Share of renewable energy	67 %	71 %
Energy self-sufficiency	64 %	66 %
Wood-based bioenergy	5,6 TWh	5,7 TWh
Other renewable energy		
Biogas	20,6 GWh	20,6 GWh
Hydropower	765 GWh	*924 GWh
Heat pumps	260 GWh	351 GWh
Peat	515 GWh	344 GWh

*Include in 2020 both wind and hydro power

POHJOIS-KARALIA
Pohjois-Karjala



Greenhouse gas emissions of North Karelia 2020

Emission source	Emission 2020, kt, CO ₂ -equivalent	Change 2007-2020
Consumption energy	63,1	-67,6 %
Electricity (heating)	39,3	-67,1 %
District heating	98,3	-49,3 %
Oil heating	36,3	-59,8 %
Other heating	42,0	6,2 %
Industry	35,0	-41,4 %
Work machinery	108,9	-9,6 %
Transport (roads)	285,9	-25,0 %
Transport (railways)	5,7	-64,2 %
Transport (water)	8,1	-19,7 %
Agriculture	290,9	-8,9 %
Waste treatment	52,5	-28,5 %
F-gases	33,2	-33 %
Wind energy	0,0	-
Total amount	1099,1	-34,3 %

Regional Council of
POHJOIS-KARALIA

Inspiration from AgroRES

The project has brought insight into the updated Climate and Energy Programme:

- Background material on the possibilities of agriculture and rural renewable energy production
- Additional insight regarding reduction of agricultural emissions and promotion of renewable energy
- Excellent renewable energy visits to various destinations have had an impact on stakeholders and investors

North Karelia 2030

Climate sustainable
Resource-efficient
Diverse
Networked and competent
Sustainable growth



A forerunner in climate sustainability

Full of life and well-being

A region full of life and a population full of well-being
It is possible to live and work anywhere in the region

Age distribution, prevention of social exclusion, nature services promoting public health

Climate-friendly planning, urban planning, transport system

Protects the biodiversity

Protecting conservation areas, water systems, valuable habitats and nature sites

Biodiversity is treasured in all activities

Suppressing and preventing the loss of species

Goals recorded: Regional Forest Programme, Finnish Lake District's Rural Environment and Climate Programme, Climate Roadmap for Agriculture

Low-emission energy in a self-sufficient way

Developing and supporting decentralised energy production

Energy is low-emission and comes from local natural resources

A kilowatt hour saved is the cleanest and most economical energy

Transport and heating energy and consumer electricity pose the greatest challenges in reducing emissions

Climate resilient construction and housing

In both urban and rural areas

Construction and housing materials, energy solutions, carbon-neutral concrete construction development, increasing wood construction

Mobility, employment, entrepreneurship

Extending the lifetime of buildings and climate-wise housing solutions

Uses natural resources sustainably and enables business

Sustainable use of natural resources is based on resource efficiency and circular economy – side streams, secondary raw materials

Products with a high degree of processing and a higher added value

Smart and clean solutions

Objectives of the national waste plan: amount of waste, circular economy

Expertise and research data put to extensive use. A region that engages

Transferring competence and research data to operators in a flexible way

Utilising regional strengths – educational and research organisations and actors, companies, networks, innovations, ecosystems

Culture of experimentation, sustainable and renewable solutions

Including residents, villages and communities

80 % reduction in emissions from 2007 – Hinku, carbon neutral municipalities

Transport and heating emissions pose the biggest challenge

The region had 8 Hinku municipalities in 6/2020. Reduction in emissions 2007 -> 2018 was just 25 %

We need innovation, investment, research and its implementation, support, lobbying

Carbon sinks and carbon storage need to be developed

Implementation of Climate and Energy Programme of North Karelia 2030

Examples 1/3

Biogas production in North Karelia

- ❑ The first biogas filling stations in North Karelia opened in:
 - ❑ Joensuu 11/2022
 - ❑ Kitee 05/2023



Implementation of Climate and Energy Programme of North Karelia 2030

Examples 2/3

Hydrogen and solar power investments

- ❑ **Green hydrogen production combined with bioenergy based heat and power generation in Joensuu**
- ❑ **Solar energy production under planning in the same plot**



Implementation of Climate and Energy Programme of North Karelia 2030

Examples 3/3

Energy communities

- ❑ An energy community is being piloted in North Karelia in Tohmajärvi!
- ❑ More cases coming



Implementation of the Programme:

Financing new rural renewable energy projects

- **Regional Council of North Karelia has financed and is financing 10 rural renewable energy projects (2022–23) for a total budget of 1.7 million euros including the following ERDF projects:**
 - Planning and implementation of the harvesting of climate-resilient continuous cover forests by means of digitalization in North Karelia
 - Climate resilient North Karelia
 - Novel digital solutions and multi-sourced data in assessing trafficability of forest roads
 - Climate City Joensuu 2025
 - Energy efficiency drives competitiveness of industrial parks
 - Fresh Fuelchips - More from Less
- **... and nationally funded projects about:**
 - Value chain innovations by SMEs - small trees into wood products
 - Carbon balance in North Karelian forests and use of wood
 - Future wood industry
 - Wind power in Eastern Finland
- **The new EU program period has been delayed due to technical reasons of the national EURA system, opening in May 2023**
- **Regional Council of North Karelia and Centre for Economic Development, Transport and the Environment for North Karelia have started a new forum (in the beginning of 2023, “Climate task group”) to accelerate and promote the implementation of the Programme, including promotion of rural renewable energy**
- **New data of renewable energy production and use in North Karelia 2022 will be available by energy fraction from the end of 2023 (latest data from the year 2020) and it will show the development in 2020–2022**

Thank you!

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