KUOPIO

KUOPIO CLIMATE POLICY PROGRAMME 2020–2030

Summary

City Council, 7 September 2020, § 55

1. Background and preparation of the programme

The City of Kuopio has long been active in mitigating climate change and reducing greenhouse gas emissions. The first climate strategy for Kuopio was completed in 2003, and in 2009, the first climate policy programme was approved for the years 2009–2020.

The preparation of the new climate policy programme was carried out as consultant work by Ramboll. The work begun in the summer of 2019 by calculating city's carbon balance and making emissions reduction scenarios. During the autumn of 2019, two stakeholder workshops were held to put forward visions and scenarios as well as measures for the programme. Approximately a total of 60 people from the city organisation and various stakeholder groups took part in the stakeholder workshops. In addition to these, local residents were also included by organising a resident survey and workshop. The answers to the resident survey were given on an online form, a total of 279 responses were received.

The first draft of the climate policy programme was completed in November with the second draft complete in January 2020. The second draft was submitted for comments to both the city organisations as well as a number of different stakeholders. More than 30 stakeholders submitted comments on the draft programme. The final version of the programme was completed on 17 April 2020.

The programme preparation has taken into account various scenario analyses and the existing policy objectives and regulations, such as the European Commission's long-term emission reduction targets, the Paris Agreement climate targets, the national energy and climate strategy and Climate Law, and the Government Programme targets set by the Finnish government.

The new climate policy programme also supports and supplements the other programmes and objectives of the City of Kuopio, including the Kuopio Resource Wisdom Programme, the Kuopio Region Public Transport 2025 programme, as well as the carbon neutrality targets set for the members of the FISU network. In this way, the Climate Policy Programme reinforces other programs and commitments with a focus on climate policy.

2. Greenhouse gas emissions

Distribution of Kuopio's greenhouse gas emissions among different sectors in 2018 and the emission reduction target by 2030

Kuopio's greenhouse gas emissions in 2018 totalled 727.3 kt CO2- eq, distributed among different sectors according to Figure 1.

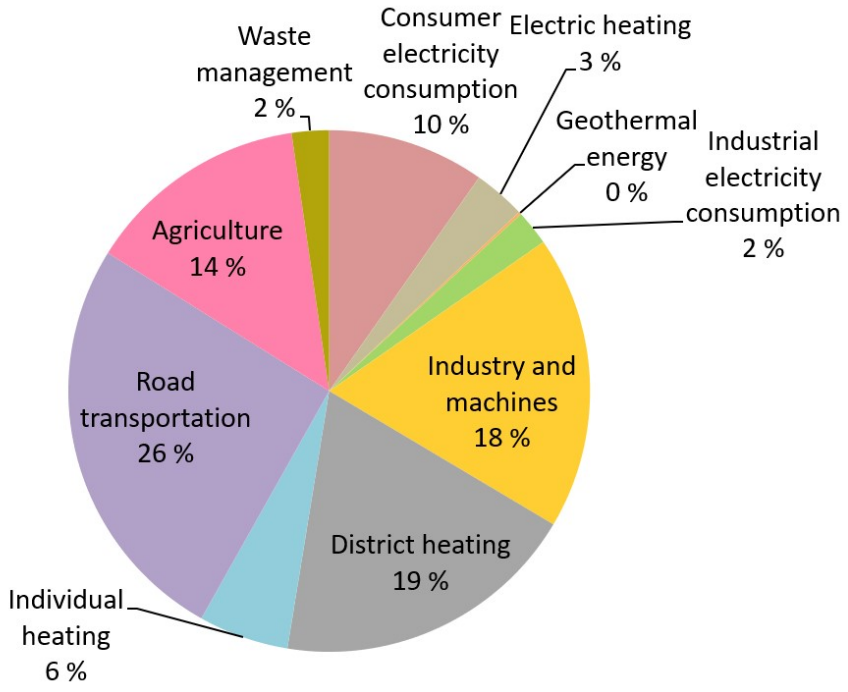


Figure 1. Distribution of Kuopio's greenhouse gas emissions among different sectors in 2018 (Kuopio CO2 report 2020)

The emission reduction requirement to reach the level of 2030 is approximately 175,611 t CO2-eq (Figure 2). The largest emission reduction requirements are in the following sectors: road transport, industry and machinery, and agriculture.

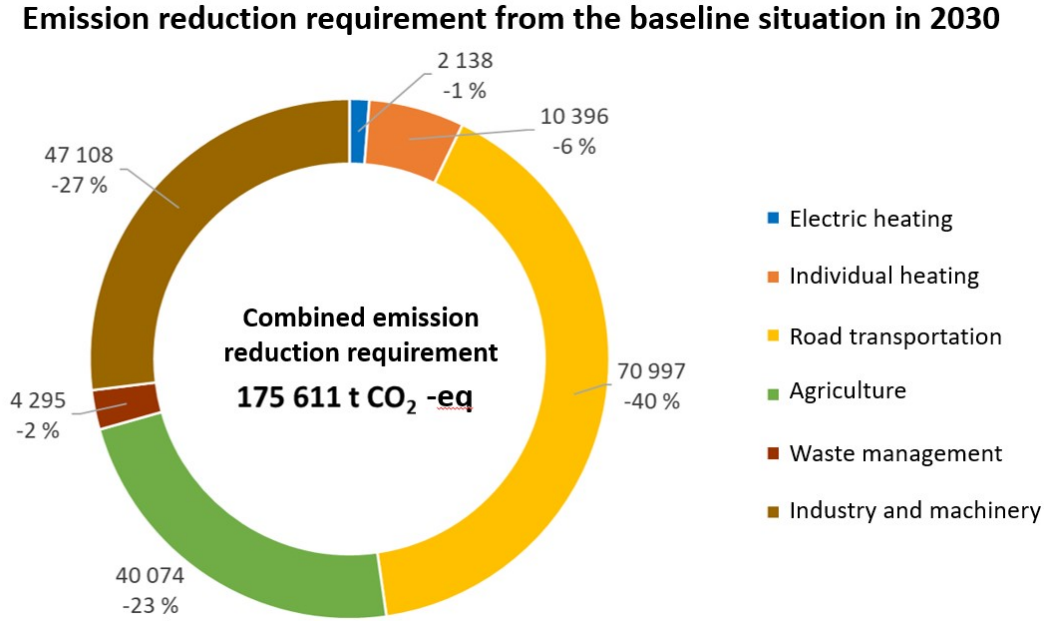
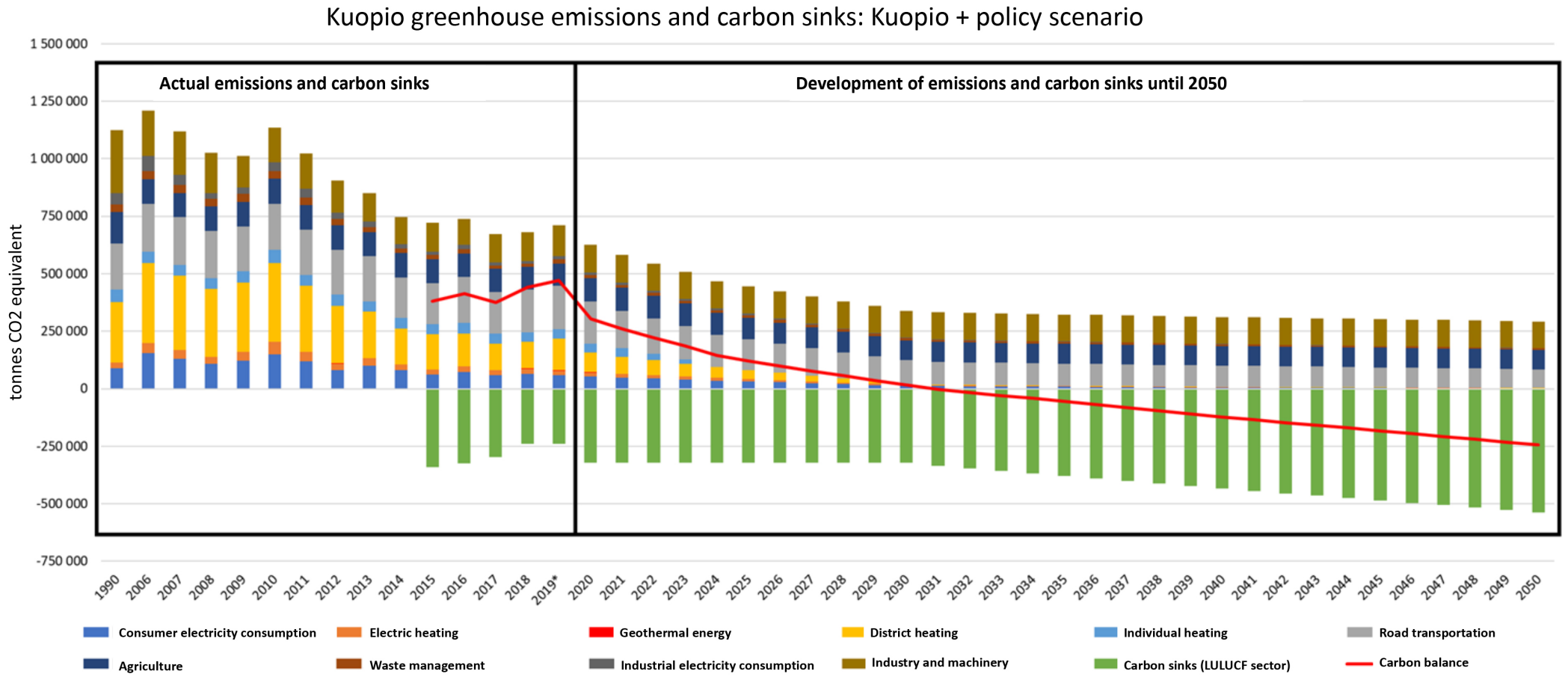


Figure 2. Emission reduction requirements by sector (Kuopio emission reduction survey material 2020)

Greenhouse gas emissions

Development of Kuopio's greenhouse gas emissions and carbon sinks



In preparing the programme, various scenario analyses have been taken into account in order to achieve carbon neutrality by 2030, i.e. the development of emissions and carbon sinks has been modelled in accordance with the so-called baseline, the policy scenario, the Kuopio scenario and the Kuopio + policy scenario.

Figure 3. The development of emissions and carbon sinks according to the measures taken by the City of Kuopio and according to the policy scenario until 2050. The emission reduction need in 2030 will be about 16,000 tons CO2-eq and carbon neutrality will be achieved year 2031 approx.

3. Vision of the programme:

Climate Wise Kuopio – Carbon neutrality by 2030

Sustainable energy production and consumption

Climate wise, health-promoting, centralised and decentralised renewable energy production.

New solutions will be constantly created in order to improve energy efficiency.

Smart mobility and urban structure that supports it

Climate effects and climate change adaptation play a key role in the city planning and land use planning.

We encourage new ways of mobility and enable them through the city infrastructure.

Forms of mobility and practical solutions supporting good environmental status and health, as well as easily accessible services.

Environmentally friendly food production and consumption

Savonian local food and vegetarian food as part of Kuopio residents' eating habits.

The nutrient cycle and carbon sequestration capacity of agriculture are improved through cultivation.

Resource wise consumption

Existing resources are used wisely.

The city's growth is in line with carbon neutrality targets and through a circular economy.

At the individual level, climate awareness is part of a smooth everyday life.

Sustainable everyday choices in living, mobility, and eating are easy to make.

Forests and carbon sinks

Forests are managed in a climate-wise manner and carbon sinks are maintained in the area.

Kuopio region and Kuopio residents

Climate-friendly life succeeds both in the city and in the rural environment.

Kuopio businesses, homes, schools, daycare services, and other communities live sustainable lives.

Clean nature with its waterways and forests is nearby and promotes the wellbeing of people.

4. Implementation of the programme

The primary focus of emission reduction measures is in actions taken by the Kuopio city group itself.

In Kuopio, the aim is to achieve zero emissions and carbon neutrality, so that it takes into account the actual greenhouse gas emissions from the area's operations and the carbon sinks generated in the area, in addition to which, if necessary, emissions in the area are compensated by emission compensations. In order to achieve this target, the following hierarchy of mitigation measures will be followed

1) emissions will be reduced
2) carbon sinks will be increased
3) emission compensations will be utilised, if necessary

Kuopio will pursue its carbon neutrality target with measures that cover the following sectors:

Actor	Sector	Emission reduction target (t CO2 -eq.)
	Total emission reduction target by 2030	- 173 000
Kuopio City Group	**1. Energy production and consumption**	- 39 600
	2. Mobility and urban structure	- 21 700
	3. Agriculture and food	- 3 200
	4. Consumption and material flows	- 38 000
	5. Forestry and carbon sinks	- 6 000
Other actors	**All sectors**	- 64 500

The total emission reduction target for the Kuopio City Group is approximately 108 500 t CO2 -eq. (including development according to the baseline scenario + increased carbon sinks)

The share of other actors and/or compensable share

The actors in the city group can decide for themselves what measures they will take in order to achieve the emission reduction targets set for each sector. Sectoral tables (pages 7-13) provide example measures and estimates of their emission reduction potential. In the tables, the example measures that have already been approved for implementation under another programme (for example, the Kuopio Resource Wisdom Programme) are marked with a colour code. The example measure with the highest emission reduction potential in its sector is marked with a red circle.

Energy production and consumption

The emission reduction potential for the example measures in this sector is a total of 39 600 t CO2-eq.

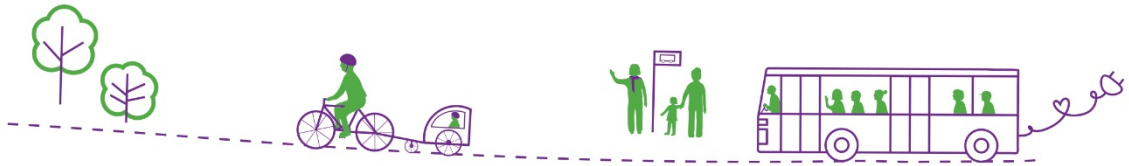
*	No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission reduction potential (t CO2 -eq.)	Indicators
	1	The electricity purchased by the City of Kuopio and the Kuopio City Group is emission-free	The City of Kuopio and the municipal enterprises and limited companies belonging to the Kuopio City Group	by 2030	No additional resources required. Requires availability and competitive pricing of alternative energy sources. Can be promoted through adding environmental criteria to procurement.	approx. –500 t CO2 -eq	Share of energy production measures in electricity consumption (%)
	2	Discontinuing the main energy use of peat in Kuopio by 2030 and replacing it by emission-free energy sources.	Kuopion Energia Oy Savon Voima Oyj	by 2030	Requires availability and competitive pricing of alternative fuels. May be promoted e.g. through the City of Kuopio corporate governance and by taking into account area reservations for low-carbon energy production in the city planning.	approx. –31 000 t CO2 -eq.	Share of peat in fuels from local energy production (%)
●	3	Discontinuing oil heating in city properties and replacing it by emission-free solutions.	Facility Management Energy advise	2020–2024	Requires investment in upgrading the heating solutions for the city-owned properties. Cost € 5000 / 100 k-m2 upwards, depending on the replacement solution.	approx. –5 000 t CO2 -eq.	Number of oil-heated properties
	4	Promoting renewable energy solutions and energy efficiency in the construction of new properties and the renovation of existing ones. The goal is to improve the average energy efficiency of the city-owned properties by at least 10%.	Urban Environment Service Area Facility Management	2020–2025	Requires a review of the energy efficiency of properties and the implementation of identified efficiency improvement measures. Can also be incorporated into building regulations for new buildings.	approx. –3 000 t CO2 -eq.	Energy consumption (KWh/property or resident)
	5	Reducing the share of internal combustion machinery and investing in energy-efficient machinery.	Urban Environment Service Area Facility Management	2025–2030	Requires the environmental criteria of procurement to be taken into account when renewing the machinery.	approx. –100 t CO2 -eq.	Share of internal combustion machinery in the city's heavy machinery
	6	Investigating the possibilities of waste heat recovery and utilisation from large industrial and other properties.	Kuopion Energia Oy Savon Voima Oyj	2020–2023	Requires a more detailed investigation in the first phase and the implementation of the potentially identified measures in the next phases.	In principle, the emission reduction potential is not significant with the current industrial operations in Kuopio.	Amount of waste heat recovered

** Measure already approved for implementation under another programme:* ● *Kuopio Resource Wisdom Programme*

Mobility and urban structure (1/2)

The emission reduction potential for the example measures in this sector is a total of 21 700 t CO2-eq.

*	No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission eduction potential (t CO2 -eq.)	Indicators
● ● ●	7	Increasing the proportion of pedestrian and cyclist traffic to at least 55 % and public transport to at least 10 %. This goal will be reached by: a) Designing areas and the city more for walking, cycling and public transport and less for car transport. b) Improving the coverage, quality, and maintenance of bike and pedestrian routes. c) Streamlining travel chains to reduce motoring, for example, through park-and-ride connections, city bikes, trunk routes, demand-responsive transport and car-sharing.	Urban Environment Service Area Kuopio Regional Public Transport Committee	by 2030	Information-based design, which makes it possible to take into account different modes of transport and indirect greenhouse gas emissions in regional planning.	approx. –2000 t CO2 -eq.	Distribution of modes of transport (%)
	8	Local measurement of the increase in the shares of cycling and walking as modes of transport	Urban Environment Service Area	2022–2023	Investment in a monitoring measurement system. Can also be implemented, for example, through a survey.	No direct emission reduction effect	Recent shares of modes of transport measured / not measured
	9	Transitioning to low-emission public transport. In 2026, at least 15 electric buses will be used in Kuopio public transport.	Urban Environment Service Area Kuopio Regional Public Transport Committee	2022–2026	Investment in new vehicles. The price of a new electric bus is approximately double that of a diesel bus (about € 400,000 / bus)	approx. –900 t CO2 -eq.	Share of electric buses in the fleet (%)



** Measure already approved for implementation under another programme:* ● *Kuopio Resource Wisdom Programme,* ● *Kuopio programme for the promotion of cycling*

Mobility and urban structure (2/2)

No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission reduction potential (t CO2 -eq.)	Indicators
10	Enabling the market-based expansion of the network of charging and refuelling points, for example, through planning for or mapping out potential charging locations, and using various policy instruments. Implementation of recharging points in connection with the city-owned properties.	Urban Environment Service Area Facility Management	2020–2029	Planning and mapping. The price of a charging point is approx. €1500–5000 / charging point.	approx. –11 000 t CO2 -eq.	Shares of different motive powers in the car fleet (%)
11	Adapting to climate wise land use planning and city planning: a) Implementing a planning and impact assessment checklist for all levels of planning b) Considering the climate effects of the placement of services, transportation, and habitation at every level of planning c) Collaborating more closely and educating ourselves on climate matters	Urban Environment Service Area	2020–2023	A study of the methods to be employed in the planning phase and putting them into practise in normal operations.	Emission reduction potential is project-specific.	Implemented / not implemented
12	Promoting wood construction: a) In the new construction of the city, an approach will be introduced in which, at the initial stage of the design of each public building, an assessment is made of how wood can be utilized in its construction. b) The development in the amount of wood used for construction in city buildings will be monitored annually. c) Wood construction will also be promoted through city planning	Urban Environment Service Area Facility Management	2020–2029		Emission reduction potential is project-specific.	Wood construction projects carried out

Agriculture and food

The emission reduction potential for the example measures in this sector is a total of 3 200 t CO2-eq.

*	No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission reduction potential (t CO2 -eq.)	Indicators
	13	Providing climate friendly food at the City of Kuopio catering services: a) Increasing the usage share of locally produced food and vegetarian food b) The city, in collaboration with Servica, will implement food carbon budget calculation and plan measures to decrease the carbon footprint of food c) The procurement criterion is the purchase of foodstuffs from companies with the aim of clearly reducing greenhouse gas emissions from production. d) City planning will take into account local food production and urban farming	City of Kuopio Servica Oy	2020–2025	Resources: no additional resources required Drivers: Environmental criteria in procurement	approx. –3 000 t CO2 -eq.	Share of locally produced food, share of plant-based protein
●	14	Halving food waste by 2030. The monitoring of food waste will be extended to all food service points operating on the city's premises.	City of Kuopio Servica Oy	by 2030	Resources: no additional resources required Drivers: Monitoring, menu design, environmental education	approx. –200 t CO2 -eq.	Food waste amount (kg)

** Measure already approved for implementation under another programme:* ● *Kuopio Resource Wisdom Programme*

Consumption and material flows (1/2)

The emission reduction potential for the example measures in this sector is a total of 38 000 t CO2-eq.

No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission reduction potential (t CO2 -eq.)	Indicators
15	Setting low-emission solutions a selection criterion for public procurement, with particular attention to: a) Public transport in the urban are b) Procurement by the Kuopio city organisation (including e.g. heavy traffic, foodstuffs, energy solutions of subcontractors)	Procurement plans for all Service Areas	2020–2030	Requires updating procurement instructions and forms, as well as a procurement monitoring system which can be used to oversee the achievement of the goal.	approx. –3 000 t CO2 -eq.	Environmental impacts used as selection criteria: Implemented / not implemented
16	Taking circular economy into account in construction and construction planning: a) Supporting renovation and focusing on the renovation of the city-owned properties instead of demolition b) In the design and construction of new buildings, attention will be paid to the fact that the lifespan of the buildings is as long as possible, that the building can be adapted to a new use, e.g. by modifying partitions, and that the building parts can be dismantled as separate elements	Urban Environment Service Area Facility Management	2020–2030		Emission reduction potential is project-specific	
17	Decreasing the amount of waste generated and increasing the recycling of materials a) in the city's own building projects b) in municipal waste management	City of Kuopio and enterprises in the City Group The Savo-Pielinen Waste Management Committee Facility Management	2020–2025	More specific measures of the Waste-Free Kuopio 2050 report	<1000 t CO2 -eq.	Amount of waste generated (t/y) or alternatively, emptying counts per year by type of container, waste processing method shares (%)

Consumption and material flows (2/2)

No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission reduction potential (t CO2 -eq.)	Indicators
18	Promoting the creation of industrial symbioses and the utilisation of material flow by-products and supporting these through land use planning. For example: for reusable concretes, bricks and ashes generated in the area, there are at least 5% more pre-planned and licensed construction sites than the annual masses generated in the area.	Growth and City Group Services Urban Environment Service Area Jätekukko Oy (and other businesses)	2025–2029	Requires project-specific assessment as well as development work and business networking across organizational boundaries.	<1000 t CO2 -eq.	Number of identified industrial symbioses in Kuopio (pcs) Material recovery share (%)
19	Encouraging inhabitants, businesses, and other actors to undertake similar measures to those undertaken by the City of Kuopio through communications, guidance, and education. a) Energy efficiency of the premises not owned by the Kuopio City Group will improve by an average of 10 %. b) Oil heating will also be discontinued in properties not owned by the Kuopio City Group. c) The usage share of locally produced food and vegetarian food will be increased in such a manner that the carbon footprint of food is also reduced beyond the Kuopio City Group.	Growth and Learning Service AreaSavonia Oy Savo Consortium for Education	2020–2030	Requires adequate resources for advice, training and communication, investment in skilled staff and the identification of good examples and practices. The City of Kuopio can also instruct residents to apply for state subsidies to improve energy efficiency.	approx. –34 000 t CO2 -eq.	Energy consumption / inhabitant (MWh/inhabitant) Number of oil heated buildings (pcs)

Forestry and carbon sinks

The emission reduction potential for the example measures in this sector is a total of 6 000 t CO2-eq.

No.	Example measure	Executor(s)	Schedule	Required resources / drivers	Emission reduction potential (t CO2 -eq.)	Indicators
20	Keeping the felling of forests owned by the City of Kuopio at a sustainable level and increasing the carbon sink of the city's forests systematically by forest management measures.	City of Kuopio / Land management services	Continuous	Measure will require no additional resources	approx. –6 000 t CO2 -eq.	Harvest volume In city-owned forests (m3/y) and forest age
21	Increasing the amount of green space in the urban environment. a) maintaining existing green space b) considering green space accessibility in city planning c) implementing a green space network plan and taking it into account in other planning	Urban Environment Service Area	2020–2029	Increasing green space requires sustainable city planning and land use planning. Carbon sinks are dependent on the surface area of the green space.	Carbon sinks approx. 1.5–3 t CO2-eq / hectare new green areas in forestry class A	Green space surface area (ha)

5. Preparing for climate change and adapting to it

Both mitigation and adaptation measures are needed to reduce the effects of climate change. Mitigating the climate change means reducing greenhouse gas emissions and looking after carbon sinks through various measures. Adaptation to climate change means the ability of man and natural systems to function in the prevailing climate and the ability to prepare for changes in the climate.

In addition to the objectives of the climate policy programme, the programme contains a plan and measures for adapting to and preparing for climate change. Through well planned adaptation measures, the negative effects of climate change can be mitigated, and the positive effects made use of.

With an adaptation and preparedness plan, the city will mitigate climate-related risks, costs, and effects.

The climate policy programme includes an adaptation plan which is divided into following components:

- stormwater treatment and urban landscaping
- nature and agriculture
- city planning and land use
- transport
- energy
- construction
- other measures and
- notable health effects

The adaptation and preparedness plan will be taken into account in particular in land use planning.

6. Programme monitoring

The monitoring of the implementation of the programme's objectives will be carried out as part of the monitoring
of Kuopio's resource-wise objectives and programme. The steering group of the Kuopio Resource Wisdom Programme and the City Board are responsible for monitoring the programme.
In addition, Kuopio's CO2 emissions are regularly monitored using the results of Sitowise Oy's annual greenhouse gas emission calculation (ordered by regional environmental protection services).


CLIMATE WISE
KUOPIO
– Carbon neutrality
by 2030
KUOPIO