



Climate City Contract

2030 Climate Neutrality Investment Plan

2030 Climate Neutrality Investment Plan of the City of Tampere



TAMPERE





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Glossary of Terms

Acronym	Description
AP	Action Plan
IP	Investment Plan
KPI	Key Performance Indicator
MEL	Monitoring Evaluation & Learning
MRV	Monitoring Reporting Verification
WP	Work Package



1 Part A – Current State of Climate Investment

Part A “Current State of Climate Investment” is the **structural element** of the climate neutrality investment plan, putting the basis for the development of the plan through a detailed-oriented evaluation and assessment of your city’s existing financial policies and funding/financing activities.

1.1 Module IP-A1: Existing Climate Action Funding and Financing

This section represents the initial step of the 2030 Climate Neutrality Investment Plan (Investment Plan) and will require you to evaluate and assess previous and existing funding and financing for climate activities by field of action.

A-1.1: Textual element

Tampere's climate investments are part of the city's normal investment budget and financing. Typically, no separate funding is sought for these investments, and therefore the financial situation must be described through the city's regular budget.

However, as a frontrunner Tampere has already included a climate budget in its official city budget four times. In addition to the emissions budget, the climate budget specifies the financial resources allocated to climate change mitigation, adaptation and sustainable mobility. Tampere's climate budget considers actions that are identified as being implemented *primarily* for climate reasons.

Climate budget is used to monitor the progress towards the climate neutrality target and the adequacy of implemented measures. At the same time, the target of climate neutrality becomes more concrete in the annual budget. The climate budget is compiled annually in the city's official budget, which reviews the targets and actions for the coming years in terms of euros and emission reductions. The progress is monitored annually in the official financial statements. If insufficient progress and financial resources are identified, this is highlighted in the reporting of the financial statements and thus communicated to decision-makers.

In addition to sector-specific emissions budget, the climate budget also examines the financial resources allocated to climate measures. In the most recent budget for 2023, the city organisation's climate investments totaled 12 million euros and the subsidiaries' 38 million euros. The most significant measures in monetary terms are related to tram infrastructure and fleet, electric boilers of Tampereen Energia Ltd as well as pedestrian and cycle paths.

The climate budget is currently carried out in the same cycle as other financial planning, i.e., it is implemented for the next four years. Ideally, financial planning would always be based on long-term planning and would also consider long-term impacts. Climate budget's effectiveness can be increased by improving impact assessments that consider the life cycle impacts holistically, rather than focusing only on the operations and effects in direct monetary effects of the next few years. It is expected that such information will help the city make budget decisions that would be environmentally and socially optimal, as well as economically viable in the long term. This kind of development work is being done in Tampere, but it still requires a lot of development and additional data, combining different data sources and demanding calculations.

Climate budget has so far only been able to quantify the measure-specific emission reduction impact only for some measures, and this will be developed in the coming years. In addition, the assessment and, where possible, monetisation of the co-benefits of the measures has been on the development list, and project funding has been obtained to continue this work.

In some cities, the climate budget includes measures in line with the EU taxonomy. In the case of Tampere, a taxonomy-based climate budget would consider a very large part of the total budget. This is why Tampere has so far chosen to use a different approach, as it better communicates to stakeholders the level of investment in climate action. However, Tampere will probably also have to start classifying its investments also according to the taxonomy, due to the funding requirements. However, this work has not yet started.



Table 1 summarises the share of the most significant climate actions compared to the budget of the whole city organization in 2022 (investments and operating budget). The figures are based on the latest reported climate budget for 2022. When interpreting the figures in the table, it should be noted that they only concern the city organisation and not the entire city group, so for example the energy producer Tampereen Energia, which is a subsidiary, is not included in the figures.

It should also be noted that the budget shares of climate action may at first glance seem small. This is due to Tampere's large overall budget for both operating expenditure and investment. In 2022, just under €900 million of city operating expenditure (totalling around €2 billion) still consisted of social and health services, which will no longer be provided by municipalities from 2023. In addition, as regards investment, it should be noted that Tampere is a very fast-growing city with a service network that requires a lot of investment, including in infrastructure upgrades.

Fields of Action	Sector Subsection	% Current Budget Allocation
Transportation	Construction of walking and cycling paths (investment)	1,7 % (4,0 M€)
	Maintenance of walking and cycling paths (operational cost)	0,10 % (2,0 M€)
	Planning costs for the promotion of sustainable mobility (operational cost)	0,16 % (3,2 M€)
	City bike system (operational cost)	0,03 % (0,7 M€)
	Park-and-ride facilities (investment)	0,06 % (0,2 M€)
	Walking and cycling guidance, bike parking and counters (investment)	0,11 % (0,3 M€)
Built Environment	Energy efficiency measures in buildings (investment)	0,34 % (0,8 M€)
	LED lighting replacement (investment)	1,3 % (3,1 M€)
Energy Systems	Increasing renewable energy in buildings (investment)	0,18 % (0,4 M€)
Green Infrastructure and Nature Based Solutions	Nature-based stormwater solutions (investment)	0,86 % (2,1 M€)
	Nature-based stormwater solutions (operational cost)	0,03 % (0,6 M€)
Waste and Circular Economy	Waste management investments, deep waste collection systems (investment)	0,15 % (0,4 M€)

Table 1: Finance Sources By Field of Actions



1.2 Module IP-A2: Strategic Funding and Financing Evaluation

You will evaluate your city’s existing financial policies to understand how they are currently managing the capital allocation towards net zero. This will include strategies in place and what your city has at its disposal to facilitate the transition. Your team should identify the forms of capital it has access to and which are specific to their climate neutrality targets.

A-2.1: Textual element

Existing strategies for capital deployment:

Tampere city council approves the principles for financing. The principles state that the primary mission for financing is to support the achievement of the city’s strategic goals. Carbon neutrality by 2030 is one of the city’s strategic goals. City of Tampere has the climate budget in place which combines climate work with the city’s budget and financial statement. The city has Carbon Neutral Tampere 2030 Roadmap, and the climate budget monitors our progress towards carbon neutrality.

Table 2 summarises the latest confirmed income sources of the city organisation in 2022. The total amount of the city’s revenue was 2 118,1 million euros. Compared to the previous year, revenues increased by 41,5 million euros (2.0%). The largest contributions consisted of tax revenue (1 566,2 million euros) and government funding (379,9 million euros). COVID-19 pandemia continues to affect government funding. The largest dividend income (35,7 million euros) the city received from its energy company (Tampereen Energia Ltd, 20,0 million euros) and its waste management company (Pirkanmaan Jätehuolto Ltd, 1,7 million euros). It is important to note that the figures for 2022 still include the social and health care sector, which was separated from all municipalities in Finland at the beginning of 2023. This reform is one of the most significant administrative reforms in Finnish history. The reform will reduce the city’s net costs (operating margin and depreciation) by around €908 million. Tax funding (tax revenue and state funds) will decrease by a total of around € 898 million.

The latest confirmed net investment in 2022 for the City of Tampere was 238,4 million euros and the latest confirmed investment income financing rate, which reflects the ratio of the city’s average result before depreciation to investment, was 61 % in 2022. The rest of the investments must be financed mainly with new debt. For the period 2023-2026, the investment income financing rate is estimated to vary between 43% and 57%. Currently the city’s financing is based on budgetary loans. The total amount of the city’s loans in the 2022 financial statements was 925,9 million euros. In 2022, the change in the loan portfolio was 34,9 million euros, and long-term loans from MFIs decreased. Allotments for capital expenditure was 5,9 million euros and proceeds from the sale of non-current assets was 16,8 million euros in 2022. The remaining investments were covered by funds accumulated from previous years.

Some of the budgetary loans have been taken from special credit institutions such as the Council of Europe Development Bank (CEB) and European Investment Bank (EIB). The city has some loans that have been taken for a special project but mainly the city uses budgetary loans to finance investments. For the year 2023 the city is aiming to withdraw green loans that are for a special project that fulfils the green loan/taxonomy criteria. The city’s daughter companies (subsidiaries) have green loans and special credit institution loans to finance their investments towards net zero. The city encourages daughter companies to take green loans for their investments in suitable cases.

The most important sources of capital for the City of Tampere in 2022 are summarised in Table 3.

Existing regulatory policies that support capital deployment:

At the national level, the Climate Act and the Medium-term Climate Change Policy Plan aim at carbon neutral Finland by 2035. National level policies and actions support capital allocation towards net zero also in the cities. Tampere has been an early adopter of the climate policies and actions and the city is a forerunner in climate issues in many ways.



Many EU climate policies and regulations are implemented at the city level or have an impact on the cities. These include, but are not limited to, the EU emissions trading system (ETS), The Fit for 55 package, Energy Efficiency Directive and RePowerEU programme. The RePowerEU programme was launched by the European Commission after the energy crisis caused by Russia's invasion to Ukraine and it aims at saving energy, producing clean energy, and diversifying energy supplies. In other words, phasing out fossil fuels that have at least partially been of Russian origin in the past. The city of Tampere took immediate action and made sure that the city and the city's daughter companies do not use fossil fuels originated from Russia.

Implementation of national and EU level regulations often have cost implications and may require investments. Albeit potentially requiring more resources in the initial stage, the long-term effects on the local economy will usually be of positive nature, not to mention the effects on health or other environmental matters. For instance, measures carried out due to energy efficiency regulations reduce operational costs in cities.

New policies and regulations related to climate change can also affect the operations of companies in cities and, along with that, the economy of cities. For example, the EU taxonomy requires certain financial and non-financial actors to report on their activities based on a common definition of environmentally sustainable activities, including climate change mitigation. The taxonomy aims at redirecting capital flows towards such activities. It should be noted, that for example all the buildings that the city builds are in energy efficiency class A so all the buildings are taxonomy compliant.

A key local initiative supporting climate investment is the Tampere City Strategy 2030, which includes a focus on carbon-neutral actions. In addition, the city's activities are guided by environmental and climate policy, which provides a strong backbone, demonstrating that Tampere is serious and long-term in its pursuit of carbon neutrality, in broad cooperation with stakeholders in the region.

The carbon-neutral Tampere 2030 roadmap is the most important plan for the climate work. It is complemented by a local Sustainable Urban Mobility Plan (SUMP), which aims at promoting a transition into more sustainable modes of transport required by traffic climate targets. Furthermore, Strategic Local Master plan for main city area is important in promoting sustainable land use in a growing city. City of Tampere housing and land policy guidelines 2022-2025 enables a sustainable lifestyle for its residents through its housing land policy measures

For a more comprehensive description of policies supporting climate investment, see Module IP-C1.

Assessment of the city's capabilities:

Tampere is well placed to develop an investment plan. For several years, Tampere has been preparing a climate budget, which includes the costs of climate investments for the coming years, both for the city organisation and its subsidiaries. For the current investment plan, the existing climate budget had to be slightly extended with additional information and the timeframe has been extended from the next four years to 2030.

With the preparation of the climate budget, Tampere already has a well-established cooperation between the climate and finance departments, which streamlines the preparation of the investment plan. In addition, Tampere has long invested in assessing the economic impact of climate measures, which will provide the necessary input for the investment plan.

Tampere's challenges in preparing the investment plan relate to identifying more diversified financing opportunities for climate investments. The preparation of the Investment Plan is expected to provide further support for this.



Income Category	City income	% of city budget
Tax	Tax revenue	56 %
Subsidies and grants	State contribution (central government transfers to local government)	18 %
Revenue	Revenue from sales	12 %
Revenue	Revenue from payments	5 %
Revenue	Rental revenues	4 %
Subsidies and grants	Subsidies and grants	3 % (0,2-0,3 % for climate actions)
Revenue	Financial revenue from subsidiaries	2 %
Revenue	Other operating revenue	1 %

Table 2: List of income sources for the city in 2022

Type	Size Range	Level	Description
<i>Source of Capital</i>	<i>Quantum of Capital Accessible to the city through this source</i>	<i>Private or Public</i>	<i>(Description of capital source e.g. cost & provider)</i>
Investment income financing	127,7 million euros	Public	61 % of the investment in 2022 was financed by city's own income. The rest of the investments must be financed mainly with new debt.
Changes in loan portfolio	34,9 million euros	Public	In 2022, the city had loans from a number of different providers. The total loan is divided among the lenders as follows: <ul style="list-style-type: none"> - Municipality Finance Plc (MuniFin) 33 %. - Daughter companies 30 %. - European Investment Bank 22 %. - Council of Europe Development Bank (CEB) 10 %. - Nordic Investment Bank (NIB) 4 %. - Deutsche Pfandbriefbank AG 2 %.
Allotments for capital expenditure	5,9 million euros	Public	-The Housing Finance and Development Centre of Finland 1,7 M€. -The Finnish Transport and Communications Agency Traficom (2,8 million euros). -SURE – Smart Urban Security and Event Resilience Project of City of Tampere (appr. 0,3 million euros) - Granted funding by EU's Urban Innovative Actions (UIA) - TAHERA – Passenger transport rail yard of Tampere -project (appr. 0,6 million euros) – funding by Finnish Transport Infrastructure Agency - Business Finland appr. 0,05 million euros

Table 3: List of capital sources for the city in 2022



1.3 Module IP-A3: Barriers to Climate Investment

You will need to evaluate and identify the range of structural, policy, economic, and financial barriers for capital deployment in support of climate action.

A-3.1: Textual element

According to the latest estimates in Tampere's financial statements of 2022, both access and conditions for municipalities to finance has continued to be favourable, although margins were slightly upward, and since then the margins have continued to rise. However, the predicted recession in Finland could change the situation relatively quickly. For domestic long-term financing for investment (including climate investment) is available to the domestic municipal sector from specialised lending institutions such as MuniFin (Municipality Finance Plc), the European Investment Bank, the Nordic Investment Bank and the Council of Europe Development Bank CEB. In short term financing of less than one year, the municipal bond market is efficient.

Furthermore, Europe's entire public sector became heavily indebted during the COVID-19 pandemic. With monetary policy finally starting to normalise last year and interest rates becoming clearly positive, the burden of interest expenditure on public finances will be on a different scale from what we have become accustomed to. Credit rating agencies will have to seriously consider the risks associated with debtors and differences in ratings are likely to emerge. In international financial markets, the risk-free status of the public sector as a debtor has disappeared and investors will continue to make greater distinction between good and bad debtors. In Finland, municipal financing has been readily available from a variety of sources and has always been on good terms. The Finnish State excellent reputation and high credit rating have also helped municipalities in the loan market. Overall, the financing opportunities in Finland have traditionally been good and the city and city's daughter companies are in a good position to acquire funding from credit institutions. However, the recently increased interest costs may affect the feasibility of investments, including climate investments. To manage the interest rate risk, the City of Tampere has changed variable interest rates to fixed interest rates.

Although the situation may look reasonably good at the moment in general, the City of Tampere has identified various potential barriers to financing especially climate investments. Tackling barriers to capital deployment is a critical aspect of Tampere's efforts to achieve climate action goals within the EU's 2030 mission. By addressing structural, policy, economic, and financial obstacles, Tampere can create an favourable environment to attracting the necessary investments and driving the implementation of climate-related initiatives. Following potential barriers for capital deployment have been identified:

Structural Barriers:

- To better mobilise green investments, we should cooperate more effectively between different departments within the city organisation.
- The city doesn't have a monitoring system of the cost savings or impact of the "normal" investments versus green investments. Such information is currently only available for some individual investments and mainly only to forecast the cost difference, not the actual realised cost savings.
- Outdated or insufficient infrastructure can create a barrier to the implementation of climate-related projects, such as renewable energy installations or electric vehicle charging networks.

Policy Barriers:

- The guidance and policies regarding the city's own and daughter company investments could be more clearly towards climate neutral investment. The daughter companies could be more clearly and strictly directed in their investments towards climate neutral investments and also the city could for example require that the daughter companies use green financing. The city could demand that the daughter companies calculate their climate impact and make a plan on how to transition being carbon



neutral. The city could also monitor and help the daughter companies with green/sustainable procurement and other processes.

-Current political decisions may not always be sufficiently in line with the city's climate objectives, hindering e.g. the development of sustainable infrastructure.

-If climate policy is not effectively and credibly integrated across city departments, conflicting priorities can emerge, leading to inefficient allocation of resources.

Economic Barriers:

- Many climate-friendly technologies and infrastructure have high investment costs, which can reduce the city's ability to invest.

- Slow or otherwise unsuccessful co-operation with companies and other organisations in climate investments can raise investment costs or risk the investment actualization

-The unpredictable nature of returns from climate investments, especially in emerging technologies, can make investors hesitant to commit capital.

Financial Barriers:

- The city should develop knowledge of the financing opportunities besides bank loans to finance the city's climate investments further. To improve this, the city would need more resources and expertise that have opportunities to delve deeper into the matter.

-The city has insufficient human resources to identify and submit suitable applications for EU funding.

-Investors may perceive climate-related projects as riskier due to uncertainties in technology, policy changes, or market demand.

-Increased interest costs may affect the feasibility of climate investments. To manage the interest rate risk, the city has changed variable interest rates to fixed interest rates.

-Possible changes in green financing criteria may lead to inability to provide information needed to apply for green financing.

-There might be too slow or unsuccessful co-operation with companies and other organisations with climate investments. The city needs more co-operation with companies and other organisations to finance climate investments.

These main potential barriers are also summarised in Table 4.

Financial Barriers to achieving Climate Neutrality	Typology of Barrier	Description	Sector and stakeholders involved
Insufficient internal co-operation	Structural	To better mobilise green investments, we should cooperate more effectively between different departments within the city organisation.	Finance Department, Economic Department, Climate and Environmental Policy Department, other departments.
Insufficient information on the impacts of investments	Structural	Lack of monitoring the cost savings and impacts of the "normal" investments versus climate investments.	Finance Department, Economic Department, Climate and Environmental Policy Department.
Outdated or insufficient infrastructure	Structural	Outdated or insufficient	City organisation, private sector operators.



		infrastructure can create a barrier to the implementation of climate-related projects, such as renewable energy installations or electric vehicle charging networks.	
Insufficient guidance on investments	Policy	The guidance and policies regarding the city's own and daughter company investments could be more clearly towards climate neutral investment.	Finance Department, Local government
Decisions not sufficiently aligned with objectives	Policy	Current political decisions may not always be sufficiently in line with the city's climate objectives, hindering e.g. the development of sustainable infrastructure.	Local government
Insufficient capacity to invest	Economic	Many climate-friendly technologies and infrastructure have high investment costs, which can reduce the city's ability to invest.	Finance Department, Economic Department, Local Government
Investors' uncertainty about emerging technologies	Economic	The unpredictable nature of returns from climate investments, especially in emerging technologies, can make investors hesitant to commit capital.	Private investors
Insufficient knowledge of funding opportunities	Financial	Lack of knowledge of the financing opportunities besides bank loans to finance the city's climate investments.	Finance Department, Climate and Environmental Policy Department
Challenges in applying for EU funding	Financial	Insufficient human resources to identify and submit suitable applications for EU funding.	Climate and Environmental Policy Department, other departments
Potential riskiness of climate investments	Financial	Investors may perceive climate-	Private investors



		related projects as riskier due to uncertainties in technology, policy changes, or market demand.	
Impact of increased interest expenditure on investment	Financial	Increased interest costs may affect the feasibility of climate investments. To manage the interest rate risk, the city has changed variable interest rates to fixed interest rates.	Finance Department, Economic Department
Green financing criteria	Financial	Possible changes in green financing criteria may lead to inability to provide information needed to apply for green financing.	Finance Department
Slow or unsuccessful co-operation with companies and other organisations with climate investments	Financial	The city needs co-operation with companies and other organisations to finance climate investments.	Climate and Environmental Policy Department, Finance Department, other departments

Table 4: Barriers to Climate Investment



2 Part B – Investment Pathways towards Climate Neutrality by 2030

Part B “Investment Pathways towards Climate Neutrality by 2030” is in place to capture the actions and needs for mobilising and delivering the funding and financing needed for climate neutrality. This Part of the Investment Plan will be aligned with and build upon the Action Plan. In addition, each of these Plans are likely to entail multiple iterations over the course of the path to climate neutrality.

2.1 Module IP-B1: Cost Scenarios for Climate Neutrality

These are the actions and measures which make up the 2030 Climate Neutrality Action Plan that need to be costed. Given the Investment Plan needs to be practical, the measures defined within the Action Plan need to be tagged by how much they will cost for the city, considering implementation and operational costs, so the city budget can be adapted to include them.

Cities have the option to provide cost estimates at their own discretion on the measures disclosed in the Action Plan template as per table B-2.2 and in the Investment Plan template as per table B1.2. Given these cost estimates for the actions, cities can then include non-sectorial costs (the cost of the levers to implement these actions) these should be considered alongside the concrete actions.

B-1.1: Textual element

Tampere has been developing the costing of its climate measures for several years already and has been working to make the information available to decision-makers and citizens. Currently Tampere is preparing already its fifth climate budget for its City Budget, which will be approved by the City Council in November 2023. Climate budget reflects how much money the city has planned to spend on climate actions over the next four years. Tampere has already included a longer-term (until 2030) costing planning in its Carbon Neutral Tampere 2030 Roadmap, which was last updated in 2022. The roadmap also included cost estimates for some of the measures.

Building on these existing processes Tampere has prepared a comprehensive climate investment plan of the city group for the period 2024-2030 in cooperation with the city's internal departments and its subsidiaries. In August 2023 all departments and subsidiaries were asked, as part of the regular budget process, about the costs of their planned climate investments, their operational cost impacts, potential cost savings and, where possible, emissions impacts. This information is compiled in Tables 5 and 6. These tables also include a monetisation of direct benefits in the form of cost savings. The emission reductions are not monetised. Table 5 summarises the cost estimates of the most significant and identifiable planned climate actions of the Tampere City Organisation and Table 6 concentrates on its subsidiaries' actions for the period 2024-2030. All figures are still unconfirmed, and funding decisions for future years will depend on the decisions of the City Council and the boards of the subsidiaries. The figures considering the city organization for 2024 will be confirmed in November 2023. A more detailed breakdown of the timelines can be found from the Annex (Tables 14 and 15).

The actions in the tables are mainly based on the measures in the Carbon Neutral Tampere 2030 Roadmap. Some of the actions may also be new actions, which will be included in the update of the roadmap in 2023-2024.

The costs included in Tables 5 and 6 are planned costs. However, these investments will not yet fully achieve the carbon neutrality target. Additional financing needs and financing options to reach the target will be assessed in a future update of the Carbon Neutral Tampere 2030 Roadmap. Preliminary possible sources of funding are discussed in Module B-2 and Table 8.

In addition, the investment plan assesses the wider economic impacts of the city achieving its target of sustainable mode share by 2030, separately assessing the economic costs and benefits to the city organisation, citizens, and wider society. This has been done because mobility and modal shift have been identified as the key and most difficult elements to achieve the carbon neutrality target. The calculation is based on the city's own mobility cost-benefit analysis model. These results are compiled in Table 7. These results also include the monetisation of indirect benefits.



Fields of Action	Action/Indicator	Implementation Costs (M€)	Operational Costs (M€)	Direct impacts (cost savings M€)	Direct impacts (Emission reductions tCO2e)	Indirect impacts (co-benefits)
Transportation	Bike parking in service buildings	5,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Reduced need for owning a car -Noise pollution reduction -Financial benefits for consumers -Health benefits -A more comfortable urban environment -Mobility non-discrimination
	Construction of walking and cycling tracks	46,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Reduced need for owning a car -Improved air quality -Noise pollution reduction -Financial benefits for consumers -Health benefits -A more comfortable urban environment -Mobility non-discrimination
	Walking and cycling guidance, bike parking and traffic counters	0,6	0,4	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Health benefits -Reduced noise pollution -A more comfortable urban environment
	Charging points for electric cars in city properties	0,3	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Incentive to acquire an electric car -Improved air quality -Reduced noise pollution
	Construction of local train stops in Hankkio and Messukylä	6,0	1,4	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Improved public transportation network -Reduced need to own a car -A more comfortable urban environment -More efficient usage of urban space
	Transition to account-based payment system from card based in public transportation	0,2	0,07	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-More convenient use of public transportation
	Electric busses procurement	53	4,6	2,0	1	-Improved air quality -Noise pollution reduction



	Promotion of public transportation use (commuting to work and events)	N/A: No Initial investment Cost	0,9	0,09	N/A: No Emission Impact Assessment	-Health benefits
	Maintaining walking and cycling tracks	N/A: No Initial investment Cost	14	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-A more comfortable urban environment - Health benefits -Reduced risk of accidents
	Planning for the promotion of sustainable mobility	N/A: No Initial investment Cost	16,1	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	
Built Environment	Phasing out of oil heating	2,0	N/A: Operational Cost Not Known	-0,4	170	-Life-cycle savings -Reduced maintenance costs -Protecting the value of buildings
	Life cycle costing and carbon footprint calculations	1,4	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact assessment	-Life-cycle savings
	Environmental certification fee for construction	0,05	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact assessment	-More holistic impact assessment in construction
	Renewing building automation systems	2,9	N/A: Operational Cost Not Known	-0,3	148	-Life-cycle savings -Reduced maintenance costs -Protecting the value of buildings -Fewer indoor air quality issues -Improved comfort
	Replacement of outdoor lighting with LEDs	3,0	0,03	-1,3	N/A: No Emission Impact assessment	-Life-cycle savings -Positive impact on safety -Positive impact on urban image after dark
	Wooden buildings for kindergartens and schools	16	N/A: Operational Cost Not Known	0,4		-Promoting competition in building materials -Promoting wood as a construction material -Promoting wood construction expertise and businesses -Promoting a diverse urban environment



	Simulators and electric vehicles for teaching in vocational school	0,9	N/A: Operational Cost Not Known	-4,9	N/A: No Emission Impact assessment	-Modern equipment for teaching -Savings in fuel and maintenance costs -Smaller risk of accidents when studying
	Estimate of additional costs of low carbon construction	12	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-More holistic impact assessment in construction
Energy Systems	Solar panels in buildings	1,5	N/A: Operational Cost Not Known	-0,1	N/A: No Emission Impact assessment	-Life-cycle savings -Protecting the value of the buildings -Increased energy-sufficiency -Diversification of energy systems
Green Infrastructure & Nature Based Solutions	Nature-based solutions in stormwater management	5,8	0,7	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Well-being and a pleasant environment for city residents -Improved environmental safety and reduced risks -Adapting for the climate change early on might bring economic benefits later -A more comfortable urban environment
	Planning for the adaptation to climate change	N/A: No Initial investment Cost	0,7	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Adapting and planning for the climate change early on might bring economic benefits later
Cross Cutting Costs	-Development work on climate change mitigation and adaptation 9,6 M€ (Climate and Environmental Policy Department) -Promoting a just transition for residents and businesses towards a sustainable future 1,0 M€ (Carbon Neutral Actions development programme)					

Table 5: Sectorial Costing of City Organisation



Fields of Action	Action / Indicator	Implementation Costs (M€)	Operational Costs (M€)	Direct impacts (cost savings M€)	Direct impacts (emission reductions tCO2e)	Indirect impacts (co-benefits)	Subsidiary
Transportation	Construction of the second part of the tramway	50,5	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	680	-Reduced need for owning a car -reduced noise pollution -Improves fluency and attractiveness of public transportation	Tampere Tramway Ltd.
	Green parking - travel chain promotion	0,5	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Less noise pollution -Improving public transportation accessibility and usage	Finnpark Ltd
	Construction of the Pirkkala-Linnainmaa track	164	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Reduced need for owning a car -Reduced noise pollution -Improves fluency and attractiveness of public transportation	Tampere Tramway Ltd
	Expansion of tram fleet due to new track section	32	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Modern equipment increases travel comfort	Tampere Tramway Ltd
	Constructing of roads for light traffic	8,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Reduced need for owning a car -Reduced noise pollution -A more comfortable urban environment -Health benefits -Fewer accidents	Hiedanranan Kehitys Ltd
	Park-and-ride for tram in Hiedanranta	12,6	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Improved access to public transportation	Hiedanranan Kehitys Ltd
	Replacing gas cars with electric cars	N/A: No Initial investment Cost	0,6	N/A: No Identified Cost Savings	140	-Reduced noise pollution -Improved air quality	Finnpark Ltd, Pirkan Opiskelijajärjestö Ltd, Tampereen



							Särkänniemi Ltd
	Reducing carbon footprint of vehicles	N/A: No Initial investment Cost	1,1	0,1	450	-Reduced noise pollution -Improved air quality	Tampere Water
	Encouraging staff to use public transportation for commuting to workplace with employment travel ticket	N/A: No Initial investment Cost	0,1	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Health benefits	Pirkanmaan Voimia Ltd
Built Environment	Transitioning to LED-lighting in parking garages	0,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Life-cycle savings -protecting the value of properties	Finnpark Ltd
	Installing an exhaust air pumps in rental properties	0,5	N/A: Operational Cost Not Known	-0,02	16	-Life cycle savings -Protecting the value of buildings -Fewer air quality issues -Increase in comfort	Tampereen Vuokra-asunnot Ltd
	Renewing heating systems in rental properties (geothermal heating)	0,5	N/A: Operational Cost Not Known	0,1	N/A: No Emission Impact Assessment	-Life-cycle savings -Increase in comfort -Protecting the value of buildings -Diversifying energy systems	Pirkan Opiskelijaa-asunnot Ltd
	Renewing heating systems in rental properties (PILP)	2,1	N/A: Operational Cost Not Known	0,2	N/A: No Emission Impact Assessment	-Life-cycle savings -Increase in comfort -Protecting the value of buildings -Diversifying energy systems	Pirkan Opiskelijaa-asunnot Ltd
	Window renovation in rental properties	0,4	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Life-cycle savings -Protecting the value of buildings -Increase in comfort	Pirkan Opiskelijaa-asunnot Ltd
	Geothermal heating in new buildings in Särkänniemi	0,06	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	500	-Life-cycle savings -Improved comfort -Protecting the value of buildings -Diversifying energy systems	Tampereen Särkänniemi Ltd



Increasing urban green space in Särkänniemi	0,06	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-A more comfortable urban environment -Promotes exercising and walking -Health benefits	Tampereen Särkänniemi Ltd
Improving light traffic accessibility in Särkänniemi (new ticket sale and gate)	0,5	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-A more comfortable urban environment -Promotes exercising and walking -Health benefits	Tampereen Särkänniemi Ltd
Low-carbon construction when building city office block	0,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Life-cycle savings -Protecting the value of the building	Tampereen Virastotalo
RTS-classification for the city office block	0,4	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Protecting the value of the building	Tampereen Virastotalo
Installing a heat pump in TREDU building	0,5	N/A: Operational Cost Not Known	-0,5	28	-Life-cycle savings -Improved comfort -Protecting the value of buildings -Diversifying energy systems	TREDU-Kiinteistöt Ltd
Shutting down wastewater treatment plant in Viinikanlahti and Rahola	2,0	0,1	N/A: No Identified Cost Savings	15 000	-More efficient usage of urban space	Tampere Water Ltd
Promotion of the artificial groundwater plant project, including the Rusko post-treatment plant and transmission lines	30	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	1 000		Tampere Water Ltd
Yearly renewals of water distribution network	70	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	54	-Improved risk management -Improved security of water distribution	Tampere Water Ltd
Optimization of water production and distribution	0,1	0,06	-0,06	7,0	-Life-cycle savings	Tampere Water Ltd



	Transition to LED-lighting for indoor and outdoor lightning in Tampere exhibition and sports center	0,3	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	142	-Life-cycle savings -Protecting the value of the buildings -Decrease in energy consumption	Tampere Exhibiton and Sports Center
	Monitoring energy usage and balancing heating systems in rental properties	N/A: No Initial investment Cost	0,3	N/A: No Identified Cost Savings		-Protecting the value of the buildings -Life-cycle savings -Increased comfort	Pirkan Opiskelijasunnot Ltd
	Reducing the carbon footprint of Tampere Water plants and network investments	N/A: No Initial investment Cost	2,7	2,7	N/A: No Emission Impact Assessment	-Use of new technologies	Tampere Water Ltd
	Water leakage inspections in the wastewater network	N/A: No Initial investment Cost	0,2	0,2	N/A: No Emission Impact Assessment	-Improved risk management -Improved security of water distribution	Tampere Water Ltd
	Piloting an environmental tool in a facility construction projects	N/A: No Initial investment Cost	0,1	0,1	N/A: No Emission Impact Assessment	-Considering impacts more holistically in construction	Tampere Water Ltd
	Optimizing the input of precipitation chemical at a wastewater treatment plant	N/A: No Initial investment Cost	0,1	-0,04	50	-Reduced consumption of chemicals	Tampere Water Ltd
Energy Systems	Investments enabling energy savings in wastewater intake pumping	2,0	0,2	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Life-cycle savings	Tampere Region Central Wastewater Treatment Plant Ltd
	Investments in solar energy	0,8	0,1	0,2	15	-Life-cycle savings -Improved security of energy supply through decentralized energy production -Protecting the value of the buildings	Tampere Region Central Wastewater Treatment Plant, TREDU-Kiinteistöt Ltd, Palvelukiinteistöt Ltd, Tampereen Vuokra-asunnot Ltd



	Shutting down Lielahiti natural gas power plant	10	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	65 000	-More efficient usage of urban space	Tampereen Energia Ltd
	Additional investments in Naistenlahti 3 power plant: flue gas recovery and district heating battery	32	9	-39,6	N/A: No Emission Impact Assessment	-Improving efficiency in energy production	Tampereen Energia Ltd
	Lighting system renewal in TREDU buildings	0,3	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	14	-Life-cycle cost savings -Protecting the value of properties	TREDU-Kiinteistöt Ltd
	Investment provision for future energy projects in TREDU buildings	2,6	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Life-cycle savings -Protecting the value of the buildings	TREDU-Kiinteistöt Ltd
	Electric boiler and district heating battery	12	57,6	-88,4	N/A: No Emission Impact Assessment	-Increasing demand elasticity	Tampereen Energia Ltd
	LVIS energy saving procedures for city rental properties	0,6		-0,07	39	-Life-cycle savings	Tampereen Vuokra-asunnot Ltd
Green Infrastructure & Nature Based Solutions	Hiedanranta storm water solutions	5,3	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Well-being and a pleasant environment for city resident -Improved environmental safety and reduced risks -Adapting for the climate change early on might bring economic benefits later -A more comfortable urban environment	Hiedanranta Kehitys Ltd
Waste and Circular Economy	Piloting waste collecting system in Ojala-Lamminrahka region (multiplied by the city's ownership share of 49,69%)	0,3	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-New expertise in waste collection	Tampere Regional Solid Waste Management Ltd



	Construction of a sludge treatment and biogas plant	19,4	27	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Improved water environment status	Tampere Region Central Wastewater Treatment Plant
	Supporting circular economy	0,1	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Promoting local business	Tampereen Virastotalo Ltd
	Biogas filling station (Tarastejärvi) (multiplied by the city's ownership share of 49,69%)	0,4	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Improved availability of biogas	Tampere Regional Solid Waste Management Ltd
	Developing the capacity of a dry reactor at a biorefinery (multiplied by the city's ownership share of 49,69%)	2,0	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Improved availability of biogas	Tampere Regional Solid Waste Management Ltd
	Improving nutrient cycling (multiplied by the city's ownership share of 49,69%)	0,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Promoting circular economy	Tampere Regional Solid Waste Management Ltd
	Developing carbon capture (multiplied by the city's ownership share of 49,69%)	0,2	N/A: Operational Cost Not Known	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Promoting new businesses	Tampere Regional Solid Waste Management Ltd
	Heat recovery from wastewater treatment plants	2,5	0,5	N/A: No Identified Cost Savings	N/A: No Emission Impact Assessment	-Reduced need for district heat	Tampere Region Central Wastewater Treatment Plant Ltd

Table 6: Sectorial Costing of Subsidiaries



Fields of Action	Action / Indicator	Implementation Costs/Capex	Operational Costs	Direct impacts (Emission reductions)	Indirect impacts (co-benefits)
Transportation	Increase in sustainable transport modes from 55 % (2021) to 69 % (2030) – based on a cost-benefit analysis considering the whole society; comparing the difference in costs and benefits of the targeted development compared to BAU.	9,2 M€ decrease in the investments of the city organisation due to lower investment needs for car roads (NPV in 2024-2030)	<p>-A decrease of 380 000 € in the maintenance costs of the infrastructure grid due to lower maintenance needs for car roads (NPV in 2024-2030)</p> <p>-An increase of 55,8 M€ in public transport operating costs due to improved public transport service levels (NPV in 2024-2030)</p> <p>-An increase of 110 M€ in public transport fares due to increased public transport use (NPV in 2024-2030)</p>	-Cost savings for individuals of 720 M€ from reduced vehicle use (NPV in 2024-2030)	<p>-90,0 M€ extra costs for individuals due to increased travel time (NPV in 2024-2030)</p> <p>-27,0 M€ in health benefits for individuals from increased physical activity (NPV in 2024-2030)</p> <p>-Health benefits for society of 38,0 M€ due to reduced medical costs (NPV in 2024-2030)</p> <p>-Increase of 2,6 M€ in accident costs for society due to increased cycling and walking accidents (NPV in 2024-2030)</p> <p>-28,0 M€ less costs from climate change for society due to the reduction of greenhouse gas emissions (NPV in 2024-2030)</p> <p>-2,6 M€ less air pollution costs for society (NPV in 2024-2030)</p> <p>-3,7 M€ less noise-related costs for society (NPV in 2024-2030)</p>

Table 7: Cost-benefit analysis of mobility



2.2 Module IP-B2: Capital Planning for Climate Neutrality

You will need to definite your city’s capital goals and how to achieve them. As you implement its programme the below sources of capital can be laid out as a starting point. These should be aligned with your city’s goals and relevant to the actions selected. Ideally this will be a target and the you will optimise towards.

Textual element
<p>The finances of Tampere are steered and implemented by a budget that is prepared every year. The budget proposal is prepared by the mayor. The City Council approves the budget in the autumn, before the beginning of the next budget year.</p> <p>The budget is an extensive plan for asset management of the city. The budget includes operational finances and investments on a department-specific basis, as well as profit and loss statements and financial statements. The city budget includes appropriations and revenue estimates required by operational objectives and demonstrates how the need for funding is covered. Investments included in the climate investment plan have been selected from department-specific or subsidiaries’ investment plans based on their importance on the city’s climate target. Some investments require co-operation between departments and have been implemented as development projects or larger-scaled programs developing for example the certain part of the city.</p> <p>When the city council adopts the budget, it approves the financial plan for three or more years going ahead. The city’s financial result is monitored annually in the financial statements and annual report. This ensures that a true and fair view is available of the city’s financial result.</p> <p>Estimates for funding are normally included in the city budget after funding decision or even in budget proposal phase. In long-term investment planning funding is considered at least in large-scale projects. However, the capital needs for future cannot be accurately analyzed at this stage.</p> <p>However, we present a few identified examples that are critical for the climate target, for which the future financial situation is still partly unclear:</p> <ul style="list-style-type: none"> • Emissions from transport play a critical role in Tampere's climate target. Changing vehicle propulsion alone will not be enough to achieve the target, which is why more passenger car kilometers need to be shifted to sustainable modes of transport, i.e. public transport, walking and cycling. This will continue to require significant investment, including in improving walking and cycling infrastructure. For example, for 2023, the budget proposal included more than 5 million euros for these projects, but the budget was reduced to 4 million euros. It is important to find financing for this funding gap elsewhere. In addition, more external funding is needed for mobility management, for example through various projects. • Government’s ARA grants from the Housing Financing and Development Agency have been crucial of retrofitting the city's building stock. Currently, 13 sites have ARA funding decisions. However, according to the latest Government Programme 2023 this grant would end, and this potential funding shortfall has not yet been resolved. • The total amount of government LHT (MAL in Finnish) funding for transport development projects in Tampere was 49,9 million euros in the agreement period 2020–2023. The current Government Programme includes funding for LHT agreement. However, the amount of funding for the future contract period 2024-2027 is not yet known. For Tampere, continuity is hoped for the LHT agreement, so that projects currently under construction, such as the further construction of the Tampere regional tramway, will continue to receive at least 30 % state funding. • There is a need to increase the public transport service level to increase the number of passengers. Future funding needs for public transport operations will depend on the level of subvention from the municipalities in the Tampere region and the national government, the desired level of service, inflationary cost increases and ticket pricing. Currently, the subvention level is 38% (8% from the government) and the rest is covered by ticket revenues. If the subvention rate is to be maintained at the current level, the increase in operating costs resulting from an increase in the service level can in practice be covered by increasing the ticket prices. At the same time, the total amount of subvention will also increase. This increase



can be covered either by increasing the amount of the subvention from the municipalities or from the national government.

To get more funding for its climate actions, greater use of green and other innovative financing has been identified as an area for development in Tampere. In the future, the city should identify more effectively potential investments for which this type of funding can be sought. However, this will increasingly require resources and specific expertise from the city. For the first time in 2023, the city will seek to raise green loans for specific projects that meet the criteria for a green loan/taxonomy. The city's subsidiaries already have green loans and special credit facility loans to finance their investments towards net zero. The city encourages its subsidiaries to withdraw green loans for their investments in appropriate cases.

When the Carbon Neutral Tampere 2030 Roadmap is updated in 2023-2024, one of the issues to be focused on will be the financing of the actions. From previous updates of the roadmap and this Climate City Contract process, there has emerged an increasingly important need to focus not only on the cost estimates of the measures, but also on their financing. Therefore, separate sessions on costs and financing needs will be held in the forthcoming update of the roadmap, including experts from financial, economic and climate departments. In addition to the costs of the actions, the sessions will assess whether external funding should be sought to promote them and what the possible sources of funding could be. This work will also support the future update of the Climate City Contract and its investment plan.

Examples of innovative funding structures of large investment Tampere has been using so far and which could be applied also in the future:

- One interesting and innovative investment worth mentioning in Tampere has been the construction of the tramway, which first phase was completed in 2021 and is still being extended. It has been built using green financing and an alliance model, which is well suited to the implementation of a huge and complex project in a ready-made urban environment. In addition to the City of Tampere and its subsidiary Raitiotie Ltd, the alliance includes the construction and engineering companies NRC, Sweco, YIT and AFRY. In the agile alliance model, there is close cooperation between the parties and both benefits and risks are shared. The alliance has incentives to achieve the target and sanctions if work is delayed. The tramway reaches the neighbouring municipalities and therefore financing of the tramway is done in co-operation, considering the city boarders.
- Another example of an innovative co-operation in financing city investments is the multipurpose Nokia Arena in the heart of the city. City of Tampere owns 40% of the Arena and an investment consortium LähiTapiola, OP, Ilmarinen, SRV through Arena LP 60%. Construction of the Arena was financed by the owners, senior lenders and it also received state aid. The Arena has been granted ISO 20121 certification, which means that activities of the Arena are sustainable from the perspectives of both the environment and social responsibility. The same applies to the organization of events at the arena. The Arena has a LEED gold certificate. However, there are many further possibilities to co-operate in climate investments with companies and other organisations. This is an area that the city should focus more in the future.

In addition to the city's own climate investments, private companies in the region and residents must also make investments to achieve the target:

- The city should increasingly work with businesses in the region to accelerate climate investment. Tampere works with local companies in a model called Climate Partners, where companies state their commitment to carbon neutrality by 2030 and report their actions annually. The city can also act as a platform for private companies for piloting innovative climate projects.
- Citizens are naturally important actors in making climate investment, as household energy efficiency is one of the most important steps towards a carbon-neutral society. The problem is that few consumers know how much energy - and money - could be saved through investing in e.g., heating systems and vehicle propulsion systems. One important driver of



these investments is financial support from the state. However, also municipalities can promote residents' investments e.g., by providing energy advice. City of Tampere's subsidiary Ekokumppanit Oy provides internationally unique eco-partnership activities, such as information, counseling, training and expert services for the citizens in the Tampere region and promotes a sustainable lifestyle and business.

Table 8 summarises the possible capital sources for the city to meet the costs. As stated earlier, all the capital needs for future cannot be accurately analyzed at this stage. However, for a few measures, the table provides a clearer indication of funding needs, as well as a comprehensive list of other possible sources of funding.

Capital need	Possible Sources of Capital	Sector allocation
1,0 million euros funding planned for 2024, to be updated during budgeting process. Several million euros need for capital/funding exist.	<u>Traficom</u> State contribution for the walking and cycling investment programme.	Transportation
1,4 million euros funding planned for 2024, to be updated during budgeting process. Funding for future years is expected to end.	Housing Financing and Development Agency ARA.	Built Environment
The total amount of LHT (MAL in Finnish) funding for transport development projects in Tampere was 49,9 million euros in the agreement period 2020–2023. The current Government Programme includes funding for LHT agreement. However, the amount of funding for the future contract period 2024-2027 is not yet known. For Tampere, continuity is hoped for the agreement, so that projects currently under construction, such as the further construction of the Tampere regional tramway, will continue to receive at least 30 % state funding.	LHT funding from the Government	Transportation Built Environment
The capital needs for future cannot be accurately analyzed at this stage. For the first time in 2023, the city seeks to raise green loans for specific projects that meet the criteria for a green loan/taxonomy. Decided loan amount 40 million euros. In the future, the city identifies more effectively potential investments for which this type of innovative green financing can be applied.	MuniFin (Municipality Finance Plc) Green Finance	All sectors



<p>Budgetary loans are in the range of up to approximately 180 million per year.</p>		
<p>The capital needs for future cannot be accurately analyzed at this stage.</p> <p>Suitable funding applications are under constant review with a collaboration e.g., between different departments and the City of Tampere Project Office. In the forthcoming update of Carbon Neutral Tampere 2030 Roadmap, project funding will be examined more systematically.</p>	<p><u>EU structural funds</u></p> <p>In the case of Tampere structural funds used are: European social fund plus (ESF+) and European regional development fund (ERDF), which complement each other. The funds support, for example, the transition to a green, sustainable and digital economy.</p> <p>It's important to note that the structural fund resources available are rather limited in the case of city of Tampere. The Regional Council of Tampere Region that acts as the managing authority gives out ERDF grants worth 1,8 M€ annually. This is the funding the city of Tampere can apply for with partners. In the past the city of Tampere has been single largest recipient of the funds – it has received up to 60 % of this funding in Tampere Region. However, the funding has been used for a number of sectors, not only for climate related topics. A rough estimate of what the city could possibly receive from ERDF to support climate-neutrality over the period of 2021-2027 is 3-4 M€ in total.</p>	<p>All sectors (developing the ecosystem, green and digital transition, RDI, skills)</p>
<p>The capital needs for future cannot be accurately analyzed at this stage.</p> <p>Suitable funding applications are under constant review with a collaboration e.g., between different departments and the City of Tampere Project Office. In the forthcoming update of Carbon Neutral Tampere 2030 Roadmap, project funding will be examined more systematically.</p>	<p><u>Business Finland</u></p> <p>Funding for the development of innovative public procurement E.g. through following European programmes which BF funds and manages for Finnish partners:</p> <p>Decarbonized cities programme Driving Urban Transitions (DUT)</p> <p>It is challenging to estimate as it depends on BF how much funding there will be available over the years (which depends on government decisions) and how actively the city is applying for BF funding.</p>	<p>Decarbonized cities programme:</p> <ul style="list-style-type: none"> -Transportation -Built Environment -Energy Systems <p>(Funding for companies – cities as testing and reference platforms, financing through IPP).</p> <p>Driving Urban Transitions:</p> <ul style="list-style-type: none"> -Transportation -Energy Systems -Waste and Circular Economy



	<p>It's good to note the BF can generally speaking only fund companies and not public authorities. Hence, BF can currently only support cities through innovative public procurement. This topic, a challenge for public authorities like cities, is regularly brought up in discussions with BF.</p>	
<p>The capital needs for future cannot be accurately analyzed at this stage.</p> <p>Suitable funding applications are under constant review with a collaboration e.g., between different departments and the City of Tampere Project Office. In the forthcoming update of Carbon Neutral Tampere 2030 Roadmap, project funding will be examined more systematically.</p>	<p><u>LIFE</u> Particularly: Clean Energy Transition sub-programme</p> <p>LIFE is a competitive funding programme, hence it is difficult to estimate how much the city could benefit of LIFE funding. In 2014-2020 the city of Tampere was a partner in only a couple of LIFE projects and only one of them was related to climate (a large national LIFE project). Now, the new opportunities such the sub-programme mentioned above create novel opportunities and should made use of.</p>	<p>Energy Systems (building a framework supporting the clean energy transition; accelerating technology roll-out, digitalisation, new services and business model; attracting private finance for sustainable energy; supporting the development of local and regional investment projects; involving and empowering citizens in the clean energy transition).</p>
<p>The capital needs for future cannot be accurately analyzed at this stage.</p> <p>Suitable funding applications are under constant review with a collaboration e.g., between different departments and the City of Tampere Project Office. In the forthcoming update of Carbon Neutral Tampere 2030 Roadmap, project funding will be examined more systematically.</p>	<p><u>Horizon Europe</u> Possibilities for cities and more widely to the ecosystem, including RDI community and business partners, in various clusters and work programmes:</p> <ul style="list-style-type: none"> - Missions - Climate, energy and mobility - Food, Bioeconomy, Natural Resources, Agriculture and Environment - Digital, industry and space <p>Looking at the city's Horizon project portfolio in 2014-2020, the city had around 10 project participations. The city received around 4,4 M€ in funding from H2020. Thematically most of the funding went to climate-neutral and smart projects (e.g. lighthouse project STARDUST, developing nature-based solutions UNALAB, circular construction ReCreate, food systems FUSILLI, intelligent transport TT, SPICE).</p>	<p>Transportation, Mobility Built Environment Energy Systems Smart solutions Nature-based solutions Participation, Co-creation</p> <p>RDI related to climate-neutrality and smart cities with possibilities for the city to serve as a demonstration site and a testbed – built environment, urban mobility, digital twins etc.</p>



	<p>Over the past few years the city has been developing its capabilities and creating strategic partnerships with experienced RDI actors in order to be able to apply for better and more impactful projects ever more successfully.</p>	
<p>The capital needs for future cannot be accurately analyzed at this stage.</p> <p>Suitable funding applications are under constant review with a collaboration e.g., between different departments and the City of Tampere Project Office. In the forthcoming update of Carbon Neutral Tampere 2030 Roadmap, project funding will be examined more systematically.</p>	<p><u>European Investment Bank</u> Loans and guarantees available projects and pooled investment packages, e.g. through: ELENA – European Local ENergy Assistance – which provides technical assistance for energy efficiency and renewable energy investments targeting buildings and innovative urban transport.</p> <p>The city does not have prior experience of using ELENA type support. The city has typically funded the activities ELENA could be used for from its own resources. However, the city has looked at ELENA over the years. Pooling smaller projects into a larger package could be a possibility but requires further exploration. This probably requires developing new expertise and skills, and cross-sector coordination and planning, at the city.</p> <p>The EIB has previously funded city's large infrastructure projects such as the tramway. EIB funding for it was 150 M€ (not ELENA related).</p>	<p>Transportation Energy Systems (large projects 25M€+)</p>

Table 8: Capital Planning



2.3 Module IP-B3: Economic and Financial Indicators for Monitoring, Evaluation and Learning

A range of financial policies need to be considered to execute the actions laid out in the 2030 Climate Neutrality Action Plan. You should align your city's financial policies with their current process and capital allocation. This will depend on the actions selected and be drawn from possible financial tools to assist the transition.

B-3.1: Textual element

Tampere has an extensive set of climate-related indicators, which are collected and monitored annually. Data is collected from a wide range of actors, including city departments, subsidiaries and public open databases. Table 9 summarises the key numerical indicators used to monitor progress on climate action. Some of these indicators are reported annually in the city's financial statements. The update of the Tampere 2030 Roadmap aims to set a target level for 2030 for an increasing number of indicators.

For planned investments, economic data is collected in the climate budget, and the realized investments are reported both in the financial statements. This information allows monitoring how much has been planned or has been invested in climate change mitigation, adaptation, sustainable mobility, circular economy or waste management, and how the planned amounts actually realized. The latest reported outturns for investments in the climate budget for 2022 and other key financial indicators are summarised in Table 10. The figures include only the city organisation's investments, excluding subsidiaries (which carry out a large part of the investments).

Furthermore, Tampere has a number of individual tools and calculation methods for assessing the impacts of a specific investment or type of investments. However, there is no single monitoring system for this.

Here are some examples:

- For transport, Tampere has developed its own cost-benefit analysis framework to quantify the multiple impacts of the transport system as a whole (not only direct monetary impacts, but also health and noise impacts, etc.).
- For the city's own building stock, all the data are in a database where their energy consumption, and hence emissions, can be monitored.
- In the case of electric buses, the exact energy consumption of these buses has been monitored by sensors.

Work is ongoing to develop the indicator framework, as at present the collection and management of data is largely manual, with room for improvement, for example through automation.

Climate budget and Carbon Neutral Tampere 2030 Roadmap are at the heart of aligning cost analysis, capital planning and monitoring as is illustrated in Figure B-1 for next year's process cycle. Climate budget, included in the city budget, sets annual maximum levels of greenhouse gas emissions that must not be exceeded. It also sets out the financial resources planned for climate actions in terms of investment and operating budgets. The reporting on the implementation of the climate budget in financial statements examines this progress both in terms of realised emissions and monetary resources, as well as in terms of other indicators describing progress. Climate budget aims to highlight areas where more monetary resources should be devoted and to bring these into the discussion at the early stages of budget negotiations. At the same time, the Carbon Neutral Tampere 2030 Roadmap will be updated, and cost analysis and capital planning of the actions will be included in the updating process. Both climate budget and the roadmap update process provide input for city's budget negotiations, which start in May. Once the city's budget, including climate budget, has been approved, reporting on the previous year's performance will start again to feed into the budget negotiations for the coming year.

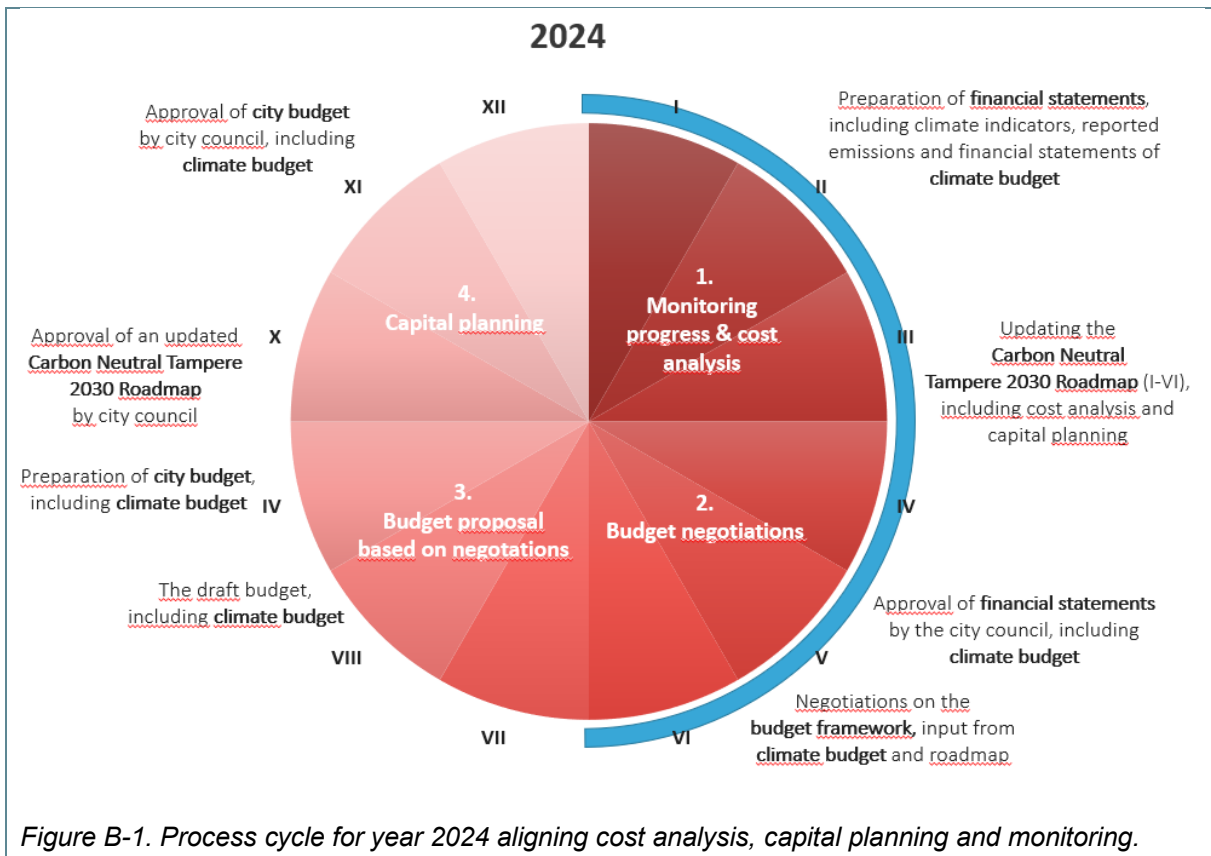


Figure B-1. Process cycle for year 2024 aligning cost analysis, capital planning and monitoring.

Fields of Action	Indicator	Indicator Unit	Indicator Baseline*	Indicator Target 2030*
Transportation	Modal share of public transport	%	13 (2021)	21
	Modal share of walking	%	34 (2021)	33
	Modal share of cycling	%	8 (2021)	15
	Modal share of travel by car	%	43 (2021)	30
	Vehicles with alternative propulsion systems in traffic use in Tampere	%	4 (2021)	35
	Percentage of vehicles using alternative propulsion systems of the city organisation's passenger car fleet	%	5 (2021)	100
	Percentage of vehicles using alternative propulsion systems of the city organisation's all vans	%	0 (2021)	100
	Level of outsourced low-emission propulsion transport services (bus and tramway line kilometres)	%	5 (2021)	100



Built Environment	Percentage of wooden apartment block construction from all new apartment blocks on plots allocated by the city	%	10 (2021)	20
	Share of energy class A of new residential buildings	%	18 (2021)	
	Residential floor area planned for the public transport zones and for the regional centres	%	69 (average in 2020-2022)	90
Energy Systems	The production of grid-connected solar energy	MW	16 (2022)	20
	Percentage of renewable energy of local heat and power company's production	%	49 (2021)	90
	Reduction of greenhouse gas emissions of local heat and power company's production (compared to 2010)	%	47 (2021)	95
Green Infrastructure and Nature Based Solutions	Amount of inner-city green areas in town plans and master plans	m ² /resident	210 (2021)	Target is yet to be determined
Waste and Circular Economy	Municipal waste recycling rate	%	50 (2021)	60
	Percentage of meals served by the municipal company Voimia that are climate friendly (includes meals in schools and daycare)	%	25 (2021)	90
	Percentage of all city procurement including environmental criteria	%	30 (2022)	Target is yet to be determined

*Indicative indicators

Table 9: Economic indicators by sector



Fields of Action	Indicator	Indicator Unit
Transportation	1,9	% of capital invested in sustainable transportation (share of total city investment in 2022)
Built Environment	1,6	% of capital invested in energy efficiency, renewable energy and reducing the carbon footprint in construction (share of total city investment in 2022)
Energy Systems	0,18	% of capital invested in increasing renewable energy in buildings (share of total city investment in 2022; most investments for energy systems are made by a subsidiary, Pirkanmaan Jätehuolto Ltd)
Green Infrastructure and Nature Based Solutions	0,9	% of capital invested in nature-based stormwater solutions (share of total city investment in 2022)
Waste and Circular Economy	0,15	% of capital invested in waste management and circular economy in construction (share of total city investment in 2022; most investments to improve waste management and improve circular economy are made by a subsidiary, Pirkanmaan Jätehuolto Ltd)
All fields	11,2	Total public capital invested in climate actions (million euros in 2022, only city organisation)
	4,7	Budget assigned to climate investment (% in 2022 only city organisation)
	45,0	Capital invested in climate actions per capita (euros/capita in 2022, only city organisation)
	0,47	Debt to budget ratio (in 2022)

Table 10: Financial indicators by sector



3 Part C – Enabling Financial Conditions for Climate Neutrality by 2030

Part C “**Enabling Conditions for Climate Neutrality by 2030**” is the third section of the Investment Plan and is intended to identify other enabling factors the city needs to consider in the implementation of the Investment Plan.

3.1 Module IP-C1: Climate Policies for Capital Formation and Deployment

You will need to optimise the allocation of capital between both public and private sources across the portfolio outlined in the Action Plan to meet the cost of the actions identified for reaching climate neutrality over time.

C-1.1: Textual element

The policy formulation of climate finance and funding in Tampere is still evolving, but cross-sectoral cooperation on its development has recently improved, for example through the establishment of the Climate City Contract process. Key elements of this on-going development include following:

- Transparent communication format in form of climate budgeting has been established between the cities' climate and finance experts, decision-makers as well as the citizens. This ensures that the progress of climate work is effectively communicated and considered during policy discussions.
- The Carbon Neutral Tampere 2030 Roadmap will be updated during 2023-2024. From previous updates of the roadmap and this Climate City Contract process, there has emerged an increasingly important need to focus not only on the cost estimates of the measures, but also on their financing. The city budget does not always allow for the implementation of climate investments to the extent needed to reach the climate target. Therefore, separate sessions on costs and financing needs will be held in the forthcoming update of the roadmap. In addition to the costs of the actions, the sessions will assess whether external funding should be sought to promote them and what the possible sources of funding could be.
- The cross-sectoral informal cooperation comprising experts from various departments, including e.g. finance, economic, and climate, has increased. These experts increasingly work collaboratively to promote city's climate goals within economic boundaries. This ensures a holistic approach and is breaking down silos and fostering cross-functional cooperation.
- One of the strategic principles of procurement is "carbon-neutral and responsible actions". The City of Tampere procures products and services responsibly considering both climate, environmental and social aspects. The city wants to be a forerunner in sustainable procurement and drive market demand for sustainable solutions. By managing purchases using the category model, sustainability aspects can be promoted efficiently and systematically.
- With the help of experts, the aim is to attract more green funding for investments from e.g. MuniFin (Municipality Finance Plc) Green Finance, which is aimed at financing climate- and environment-friendly investments.
- The city has its own project office, which is responsible for identifying suitable national and EU-level funding programs to apply for external funding to promote the city's strategic priorities. Project office also coordinates development needs and co-operation between the different departments and cities to submit a joint application for funding. In addition to identifying suitable funding opportunities and promoting cooperation, the project office also provides advice on the preparation of funding applications.
- The city actively engages with stakeholders, such as local businesses and research institutions, to gather insights and feedback. This collaborative approach helps identify innovative solutions and ensures that policies are well-tailored to address the challenges and



opportunities of the city. Market dialogues are actively used between the city and the private companies e.g. to encourage innovations and promote sustainability the transition needs.

Additionally, climate policies listed in Table 11 include EU, national and local policies which support capital formation and deployment towards net zero. The table also includes city-specific policies and strategies. The listed policies enable city leaders to build low-emission and sustainable urban societies, develop and finance sustainable infrastructure, and enforce national and local regulations.

Climate Policy	Description of the policy (sector, targeted audience, etc.)	Intended Outcome for Capital Formation
Local policies		
The City of Action - Tampere City Strategy 2030	The City Strategy lays the foundation for the city's management. It represents city's long-term goals from the present to 2030. One of the strategy's focus areas is that Tampere is internationally known for its impressive work on climate and biodiversity. Tampere ensures a fair transition to a more sustainable tomorrow. Climate risks and adaptation to change are taken seriously in Tampere.	According to the City Strategy Tampere offers a climate-friendly environment for climate business. Tampere provides support for solutions and experiments that promote responsible choices for residents, businesses and communities.
City of Tampere's environmental and climate policy guidelines	Tampere aims to be carbon neutral by 2030. Tampere will reduce its climate emissions and strengthen its carbon sinks. Natural resources will be used and consumed resource-wise.	Tampere's environmental and climate policy guidelines provide a strong backbone, demonstrating that Tampere is serious and long-term in its pursuit of carbon neutrality, in broad cooperation with stakeholders in the region.
Carbon Neutral Tampere 2030 Action Plan	The roadmap aggregates the actions that the city plans to take in order to achieve climate neutrality by 2030.	Engages the city organization in the climate neutrality target. Capacity building about systems thinking in both the city organisation and stakeholders.
Sustainable Urban Mobility Plan (SUMP)	SUMP is a strategic plan that reviews people's mobility needs from the perspective of better quality of life.	Promotes a transition into more sustainable modes of transport required by traffic climate targets. Pilot project for boosting the modal shift and producing information that supports the change and communicates co-benefits well to different actors.



<p>Strategic Local Master plan for main city area</p>	<p>The plan seeks solutions for the urban and natural environment that support adaptation to and mitigation of climate change.</p>	<p>Promotes sustainable land use in a growing city. Studies future energy systems while making the city urban plan.</p>
<p>City of Tampere housing and land policy guidelines 2022-2025</p>	<p>A lot of new housing has been built in Tampere, mainly along public transport routes and by densifying existing residential areas. Efficient public transport and high quality walking and cycling routes move people quickly and with low emissions from one area to another. The need to move around in everyday life is reduced by the proximity of services and jobs to homes. Energy is renewable and increasingly produced by non-combustion technologies, nearby or self-produced.</p> <p>The principles of the circular economy are widely applied to all activities, including construction. Recycled materials and building components are used in buildings. Buildings are designed to be flexible, durable and ultimately demountable and recyclable. Construction and renovation will minimise the carbon footprint of buildings throughout their life cycle.</p>	<p>Tampere enables a sustainable lifestyle for its residents through its housing land policy measures.</p>
<p>Green Finance</p>	<p>MuniFin (Municipality Finance Plc) Green Finance is aimed at financing climate- and environment-friendly investments. The terms of green financing are otherwise the same as those of MuniFin other financing, but Green Finance is more affordable for the customer than a regular loan or leasing. The greener the project, the cheaper the financing.</p>	<p>MuniFin's Gree Finance can be used to finance the city's climate projects.</p>



Regional policies		
Regional LHT (MAL in Finnish) agreement	The LHT agreement on land use, housing and transport between the state and the municipalities in the Tampere City Region provides for the long-term development and financing of the urban area for a period of four years. The current period (2020-2023) is already the fourth. The purpose is to facilitate and support the cooperation between municipalities in urban regions and between municipalities and the State in the guidance related to the urban structure.	The current Government Programme includes funding for LHT agreement. However, the amount of funding for the future contract period 2024-2027 is not yet known. For Tampere, continuity is hoped for the LHT agreement, so that projects currently under construction, such as the further construction of the Tampere regional tramway, will continue to receive at least 30 % state funding.
National policies		
The national Climate Act	The emission reduction targets are -60% by 2030, -80% by 2040 and -90 % by 2050, compared to the levels in 1990. According to the Act, Finland must be carbon neutral by 2035 at the latest.	The Act enables the development of a stable investment environment towards net zero cities.
The Government Programme 2023	Finland is committed to the objectives of the Climate Act. The Government will focus its climate action on generating cost-effectiveness, technology neutrality and sustainable business while recognising the importance of a long-term approach across parliamentary terms for attracting investments.	The policy is expected to promote sustainable private investments in the city.
The Government Programme 2023	Finland will be a leader in clean energy: Businesses will be offered stable and predictable operating conditions in order to promote the green transition and cleantech investments and attract new	The policy is expected to promote investments related to large-scale energy projects in the city.



	<p>business to Finland.</p> <p>The Government will explore and, as far as possible, implement the extension of the scope of the infrastructure derogation in the interest deduction limitation with respect to large-scale energy projects. The Government will explore the need and possibilities for the central government to participate in financing solutions for strategic investments primarily through instruments in the form of guarantees or capital investments.</p>	
The Government Programme 2023	Clean Energy Finland -projects	The national level investment support is 160 million. The support is expected to bring clean energy investments to cities.
The Government Programme 2023	<p>The Government will ensure that there are adequate resources for nuclear energy regulation and SMR development at the Ministry of Economic Affairs and Employment and the Radiation and Nuclear Safety Authority. The Government will also promote the use of SMRs to produce district heating.</p>	The national level funding is 2 million per year. The development of regulations regarding SMR reactors may enable their use, for example, in urban district heating in the future.
The Government Programme 2023	<p>The Government will ensure that the regulatory and permit processes for solar power parks are uniform, flexible and predictable throughout the country.</p> <p>The up-to-dateness of the determination of the tax values of the structures of solar power plants is checked, ensuring that the solar power plant is not subject to a disproportionately higher property tax than wind power.</p>	Solar power parks are expected to become more common due to improved profitability and accelerated permit processes also in the cities.
The Government Programme 2023	The government continues the LHT agreement (land use, housing and transport, MAL in Finnish) procedure with the largest urban regions. The agreements focus specifically on ensuring the conditions for regional growth and	The link between meeting the objectives of LHT agreements and financing the investments will be strengthened. The Government Programme 2023 includes investment support to LHT agreements.



	<p>accessibility through infrastructure and housing production investments. LHT agreements will be linked to the national transport system plan.</p> <p>Urban areas will be encouraged to increase the density of the urban form, promote public transport, cycling and walking, and prevent segregation.</p>	
The Government Programme 2023	<p>Development of main Helsinki-Tampere rail-link, Liminka-Oulu twin track, electrification of Tornio-Kolari track section. Capitalisation of Turku One Hour Train Ltd (Espoo-Lohja and Turku-Salo)</p>	<p>The Government will make substantial investments in developing the railway network in various parts of Finland. As a part of One Hour Helsinki-Turku rail link project, the State is prepared to provide capital to a company assembling the funds as part of the Programme. In addition to the State, municipalities may also be shareholders in the company.</p>
The Government Programme 2019	<p>In Finland, the use of fossil fuel oil for heating will be gradually phased out by the beginning of the 2030s.</p> <p>ARA (The Housing Finance and Development Centre of Finland) offers grants to municipalities, residents and communities for removing the oil or gas heating system and changing the form of heating to a more sustainable one in the properties they own.</p> <p>Replacing oil or gas heating in private houses is also financed through the ELY (Centre for Economic Development, Transport and the Environment) and tax credit for household expenses.</p>	<p>The municipalities, residents and communities have been able to apply for ARA and ELY grants to switch to low-emission forms of heating since 2020.</p>
The act banning the use of coal for energy generation in 2029	<p>Coal-fired power and heating generation will be banned as of 1 May 2029.</p>	<p>Programme of Prime Minister Sanna Marin's Government 2019 included supporting investments to replace coal, EUR 90 million during the budget planning period.</p>



Land Use and Building Act (927/2021), (132/1999)	New construction and large-scale renovations will be subject to a minimum requirement of renewable energy. In construction projects, it must be ensured that at least 38 percent of the calculated purchase energy used in the energy calculation in a new building or a building undergoing large-scale repair is renewable energy, if it is technically, functionally and economically feasible.	These requirements ensure investments in renewable energy in new construction and large-scale renovations.
KIRA, The programme on a low-carbon built environment	The programme on a low-carbon built environment offers a total of EUR 40 million in funding in 2021–2023 to support Finnish companies and other organisations in developing low-carbon solutions related to the built environment. Municipalities and other public procurement entities can receive funding for innovative public procurement.	Funded projects have concerned, for example, development of climate and energy impact assessment and solutions for low-carbon suburban development.
European policies		
EU Directive on Energy Efficiency and Energy Efficiency Act	The Energy Efficiency Directive (EU/27/2012) entered into force on 4 December 2012 and its amendment (EU/2018/2002) on 24 December 2018. The Energy Efficiency Directive lays down energy efficiency targets at the EU and national level, the national energy saving obligation and measures and obligations to promote energy efficiency. As part of the Fit for 55 Package, the Commission submitted its proposal on the Energy Efficiency Directive recast on 14 July 2021. The target to reduce energy consumption by 32.5% in the EU will be tightened significantly to 36–39% and the target will become binding. Based on the Commission's	These requirements encourage investments to be directed to improving energy efficiency and, for example, energy-efficient construction.



	formula for Member States, Finland would need to limit final energy consumption to 255 TWh by 2030.	
The Renewable Energy Directive, (RED II; 2018/2001).	Finland has announced that it aims for a renewable energy share of at least 51 percent in 2030. The RED II directive also requires that 14 percent of the energy used by transport in the member states is renewable energy by 2030.	The Directive encourages directing investments to renewables and stabilizes the investment environment.
EU emission trading system (ETS)	<p>A cap, or limit, is set on the total amount of certain GHGs that can be emitted by the factories, power plants and other installations in the system. The cap is reduced over time so that total emissions reduce. The system allows trading of emission allowances so that the total emissions of the installations and aircraft operators stays within the cap and the least-cost measures can be taken to reduce emissions. (Directive 2003/87/EC, Delegated Decision (EU) 2020/1071 and Delegated Regulation (EU) 2021/1416.)</p> <p>The Fit for 55 package aims to reform the EU ETS by making it more ambitious. New provisions include:</p> <ul style="list-style-type: none"> -extension to emissions from maritime transport -faster reduction of emissions allowances in the system and gradual phasing-out of free allowances for some sectors -implementation of the global carbon offsetting and -reduction scheme for international aviation (CORSIA) 	<p>The system can bring investments in low-carbon technologies to ETS power plants and other installations.</p> <p>Revenues from the sale of the allowances are put into the social fund. The social climate fund will provide support to vulnerable groups.</p>
European Climate Law	The European Climate Law - as part of the Fit for 55 package - makes reaching the EU's climate goal of reducing EU emissions by at least 55% by 2030 a legal obligation.	The Innovation Fund (IF) and Modernisation Fund (MF) already existing in the EU ETS are retained in the Fit for 55 package and increased, while a new Social Climate Fund (SCF) is introduced.
EU Clean Vehicles Directive	Clean Vehicles Directive (CVD) 2019/1161 is aimed at	The directive stimulates investments in clean vehicle



	<p>promoting the adoption of low and zero-emission vehicles in the European Union. It sets mandatory procurement targets for clean vehicles in the public sector, including electric and hydrogen-powered vehicles, with the goal of reducing greenhouse gas emissions, air pollution, and energy consumption in transportation.</p>	<p>technologies and related infrastructure.</p>
<p>EU legislation on buildings and construction</p>	<p>The Energy Performance of Buildings Directive EPBD; 2010/31, 2018/44. Construction-related matters such as construction product approvals, the environmental impacts of buildings and the energy efficiency of buildings and construction products.</p> <p>The legislation contains, for example, regulations for urban buildings to utilize solar energy. From 2027, each new government building or private office building larger than 250 square meters must have solar panels.</p>	<p>Legislation guides investments for more environmentally friendly buildings and construction. The renewal of Europe's building stock is expected to reduce energy bills and help curb climate change.</p>
<p>Funding related EU regulation and initiatives</p>		
<p>EU structural funds</p>	<p>Funding comes from three funds that complement each other: European social fund plus (ESF+) and European regional development fund (ERDF). The funds support, for example, the transition to a green, sustainable and digital economy.</p>	<p>The cities can apply for these funds.</p>
<p>EU green bond standard</p>	<p>The European Green Deal of 11 December 2019 underlined the need to better direct financial and capital flows to green investments. The European green deal investment plan of 14 January 2020 announced that the Commission would establish an EU green bond standard (EUGBS).</p>	<p>Green bonds offer a source of low-cost capital earmarked for climate-friendly municipal projects. EU-wide standard encourages market participants to issue & invest in EU green bonds and improve the effectiveness, transparency, comparability & credibility of the market.</p>



EU Taxonomy (2020/852/EU)	The EU taxonomy is a cornerstone of the EU's sustainable finance framework and an important market transparency tool. It helps to direct investments to the economic activities most needed for the transition, in line with the European Green Deal objectives. The taxonomy is a classification system that defines criteria for economic activities that are aligned with a net zero trajectory by 2050 and the broader environmental goals other than climate.	Taxonomy accelerates investments towards net zero cities.
RePowerEU	In response to the hardships and global energy market disruption caused by Russia's invasion of Ukraine, the European Commission is implementing its REPowerEU Plan. Launched in May 2022, REPowerEU is helping the EU to save energy, produce clean energy and diversify its energy supplies.	Cities have a significant role in accelerating the energy transition described in the RePowerEU plan. REPowerEU Plan entails additional public and private sector investment by 2027.
International policies		
G20 Hamburg Climate and Energy Action Plan for Growth	With the G20 Hamburg Climate and Energy Action Plan for Growth, the G20 (with the exception of the US) decided on clear measures for implementing the Paris Agreement and commencing the global energy transition in line with the goals of the 2030 Agenda for Sustainable Development.	One of the key outcomes of the Climate and Energy Action Plan was the pledge to create an enabling environment that is conducive to making public and private investments consistent with the goals of the Paris Agreement.

Table 11: List of climate policies to enable capital deployment



3.2 Module IP-C2: Identification and Mitigation of Risks

Your team should consider the risks relevant to the implementation of an Investment Plan, which may impact their ambition to achieve climate neutrality, mitigation techniques should be identified where necessary and where possible, these should align with the financial policies selected.

C-2.1: Textual element

In the City of Tampere Risk management is carried out in accordance with the principles approved by the City Council and the legislation in force. Climate change related risks are implemented within the city risk profile and analysed as a part of the whole

The risk assessment department is responsible to develop and manage the risk management processes in the City. However, the group administration, service areas, business enterprises, subsidiaries and foundations draw up a description of internal control and risk management and maintain an up-to-date risk profile of their activities. The description of internal control and risk management shall integrate internal control and risk management procedures into the normal planning, decision-making and operational processes of the city group and its operating units. The description and the risk profile serve as evidence of the organisation of internal control and risk management.

Based on the threats and opportunities identified and analysed in the business environment analysis, the most significant opportunities and threats are prioritised to form the risk profile of the operating unit. The measures identified in the risk profile are used to manage key threats and exploit opportunities in a planned way.

The aim on Tampere risk assessment protocol is to:

- analyse changes in the business environment,
 - identify risks and opportunities that threaten operational and financial objectives,
 - assess the overall impact of risks and opportunities and the likelihood of their materialisation,
 - maintain an up-to-date description (risk profile) of the main risks and the means of managing them; and
 - monitor and evaluate the effectiveness of risk management measures.
- Risk management is carried out in accordance with the principles approved by the City Council and in accordance with the legislation in force.

The city uses risk assessment platform Granite to manage the risk assessment operations in the city. In budgeting phase investment planning is done in a way that financial consequences (for example operational costs) from investments are taken into account in city's budget. After a budget has been approved, the city monitors regularly how the goals and plans specified on a budget are achieved. Risks relating to construction projects of buildings and city infrastructure are regularly assessed during the implementation phase and deviations for example in budgets are informed to decision-makers. Usually budgets contain also risk reservations for unexpected cost factors.

The financial aspect is also integrated in the city's risk model Granite, but the identification of financial risk vary is likely to vary between departments

The change in market and the economy also affects implementation of the Investment Plan. Climate-related regulation and initiatives can raise the costs of raw materials (such as steel) and energy and lead to new taxes and tariffs. They all change the economic environment in which the cities and businesses operate. If the capital environment weakens, R&D investments may decrease, as well as opportunities for utilizing low-carbon technologies. At the same time, inability to adapt to a carbon-neutral economy threatens the wealth in cities. For this reason, it is important to follow the development of technology to ensure the right timing of investments and divestments. The city and daughter companies monitor the development of new solutions and technologies, and Tampere is home to many innovative solutions and technologies.

Climate change causes both physical and transition risks. Transition risk is the potential costs to society of evolving to a low carbon economy to mitigate climate change. TCFD (Task force for Climate-related Financial Disclosure) is a voluntary international reporting framework focused on the threats and opportunities of climate change. With TCFD recommendations, both public companies and other organizations can analyse and report their climate risk using commonly accepted definitions.



The most significant potential risks are summarised in Table 12. These include e.g., economic, technical, regulatory or policy-related risks.

Fields of Action	Sectoral Project	Risks Identified	Description of Risk	Mitigation of Risk
Transportation	Increasing the use of sustainable means of transport	Stakeholders' engagement risks	The inhabitants of the city stick to their old means of transport instead of changing to more sustainable alternatives	Effective communication, understanding stakeholders' needs. Support (e.g. financial) for changing to climate-friendly solutions. Climate neutral action development programme is part of the city's strategy. Focus on citizen engagement. KELI-project : Developing more sustainable mobility through a carbon footprint calculator
	Infrastructure for sustainable transport	Climate risk	Weather and climate risks cause challenges to road infrastructure; slipperiness, rail network and road maintenance problems, the risk of railway embankments and roads collapsing increases.	Road maintenance, preparation for additional maintenance costs, distribution of maintenance resources to affected areas, real-time communication of impaired conditions to users and maintenance, winter maintenance instruction, preparedness
	Increasing the use of electric vehicles	Asset transition risk	Transition risks are mainly caused by changes in the price of assets that result from the transition to a more carbon-neutral society. Electric vehicles tend to be valuable assets, but the transition will entail some uncertainties regarding asset transition. Electrification of the car fleet is, for example, likely to have an effect on the value of gasoline cars.	From city's point of view this is a concern for our subsidiaries as the City transport vehicles are owned by the Tampereen Infra Oy.



	Increasing the use of electric vehicles	Economic risk	Acquisition and maintenance costs of the vehicles and infrastructure required (for electrification). Impact on electricity price → this affects more subsidiaries of the city, such as Tampereen Infra Oy	Ensuring sufficient electricity generation capacity and resources for maintenance and development of charging infrastructure.
	Increasing the use of electric vehicles	Technical risk	Operational reliability of electric vehicles and availability of parts → Tampereen Infra Oy	Ensuring working logistics
	Increasing the use of electric vehicles	Safety risk	Electric vehicles are almost silent, which may increase collision risk with pedestrians and cyclists. Issue is being addressed by legislation.	Legislation, traffic safety measures. Tampere has a project Safe pedestrian city, where this could be considered.
	Changing consumption and mobility patterns	Economic risk	Impacts on the city's internationalisation objectives and on the development of tourism and development of tourism and events.	Taking sustainability and resilience into account when organising events, promoting local and sustainable tourism.
Built Environment	Increasing the amount of buildings with a low carbon footprint	Economic risk	Recent cost increases also in the building sector may reduce willingness and ability of companies to commit to building climate-friendly properties. This is a risk for the climate neutral goals of the city but also operational risk for the housing associations.	Subsidies, promoting R&D of materials that are both cost-effective and sustainable, promoting circular building materials, ReCreate (Reusing prefabricated concrete for a circular economy) project, owner guidance for housing associations, guidance also for subsidiaries such as Tampereen Tilapalvelut Oy
	Severe weather events threaten basic functions of society and can cause serious accidents.	Economic and safety risk	Basic functions of society (e.g. transport, especially emergency vehicles) paralysis or a direct serious accident (e.g. tree falls). Major flood damage. There is no response to these phenomena are not adequately prepared for.	Consider risk at the design stage (e.g. snow conditions on roadsides, construction and maintenance). Risk assessments and preparation of contingency plans. Fluent and up-to-



				date information. Regular updating and dissemination of plans (as part of the operational process, responsibilities). Land use planning.
Energy Generation	Decrease the amount of logging to increase carbon sinks	Policy-related and economic risk	Use of wood as fuel or resource for bio-based products may put pressure to increase loggings. In Tampere, increasing loggings might not be the biggest risk, because only a small proportion of harvested wood is used for energy, but if there is other demand for the same raw material, the price rises and it is used for non-energy purposes.	Forest management policy 2022-30 ensures sustainable management of city's own forests; provide information and encourage forest owners to protect carbon sinks. The electricity utility Tampereen Energia Ltd has a study on the sustainability of wood fuels. The increase in wood fuel does not necessarily lead to loggings, as the wood material to be burned comes as a by-product of the forest industry.
	Use of biomass	Regulatory risk	Changes in classification of biomass as a carbon neutral fuel. – a risk very relevant in Tampere	Follow regulatory framework development; shift to non-combustion renewables in the long term.
	Fossil- free electricity plants (such as SMRs and wind or solar power plants)	Technical / regulatory risk	Difficulties in finding locations that are suitable for new forms of energy generation as well as accepted among the general public → Tampereen Energia Oy	Informing the general public about the pros and cons and low risks associated with new technology. The General Plan includes a study on future energy systems, which considers the need for space.
	Natural phenomena and disruptions in energy supply	Technical and economic risk	Component and equipment shortages and energy crisis	Walkthroughs with suppliers to prepare for e.g. component shortages. Preparing for power cuts at city level.



	Low-emission energy generation	Technical/administrative risk	Delays in the building process and commissioning of new facilities for energy production.	Ensuring smoother building permit processes. Ensure sufficient communication and use participatory methods to address the concerns of inhabitants early in the planning process.
	Low-emission energy generation	Technical risk	Availability of necessary parts and installation services in projects, e.g. solar panels.	
	Low-emission energy generation	Market-specific/technical risk	Generally failed investments in new technologies.	
	Low-emission energy generation	Capacity and capability risks	<p>Unevenness of electricity production and susceptibility to disturbances.</p> <p>The replacement of fossil fuels with the production of renewable energy and with the electrification of the energy system reduces the combined production of electricity and heat. During peak demand (e.g. severe frosts) there may be challenges for the efficient operation of the energy system.</p>	<p>Developing own energy production and improving energy efficiency.</p> <p>Use of smart electrical systems (incl. electrical storages) are to respond e.g. to the need to adjust variable production and changes in the energy market. Co-creating an energy strategy for the city.</p> <p>Several network companies are switching to underground cabling, which aims to ensure the weather reliability of distribution networks and which significantly reduces the probability of power outages. Some of the network companies develop operational reliability, for example, by</p>



				speeding up repair and maintenance activities, moving power lines to the sides of roads, taking care of rolling forests of power lines and/or installing coated open conductors.
	New policies	Economical risk	For example, carbon pricing mechanisms, supporting low-emission energy sources and energy efficiency may cause effects on financial markets. - can affect the city at national level	Mitigation is a part of
Green infrastructure and Nature Based Solutions	Increased amount of vegetation in the city area	Policy-related risks	Conflict of interests between increased vegetation in public areas and more compact building or land use planning.	Pay attention to green areas in the land use and building planning process. Try to direct the building of new residential or office districts to regions with no significant green areas. The city has developed a vegetation roof policy to add nature to the densifying city. Areas of "Urban Green Development" have been identified in the master plan. The Biodiversity Programme identifies measures to safeguard biodiversity. Urban planners are trained in biodiversity.
	Increased amount of vegetation in the city area	Technical risk	Fitting both vegetated roofs and solar panels on the same roofs can be challenging.	The city has developed a vegetation roof policy to add nature to the densifying city.
	Climate-friendly	Institutional risk	Complaints regarding land use plans can be time consuming, resulting	Better access to information by the public as well as



	zoning and land use		in a delay in implementing sustainable land use plans	use of participatory methods usually leads to less complaints. High quality and comprehensive studies that underpin the planning process. The Land Use and Building Act also requires that land use planning must be based on adequate studies. The urban planning departments have interaction planners and the city has a participation team.
	Increasing vegetation carbon sinks	Climate/ environmental risk	Slow vegetation growth	Different kinds of trees/ plants have different growth rates. Focus on variation in the selection of trees when planning green areas and planting new trees. The urban tree policy aims to steer the species of trees to be planted towards greater diversity and to ensure that the urban tree can survive in changing climate conditions. The Tree Variety Experimentation project's aim is to expand the range of tree species used in Tampere. Forest Action Plan 2022-30 guides sustainable use of forests.
	Water management risks	Technical risk	Groundwater depletion, deterioration of raw water quality. Increase in heavy rainfall (floods, pump station overflows, etc.)	Protection of existing groundwater sources and alternative water sources. Ensuring that water supply networks are in good condition and



				overflow alarms are working. Measures and documents: water supply and production, a long-term plan for water supply, stormwater programme, flood risk plan.
Waste and Circular Economy	Improved reuse and recycling	Capacity and capability risks	Lack of experience among different actors exists always but is not huge.	Development of competence among companies in the waste management, reuse and recycling business. Better information regarding recycling possibilities for the city inhabitants. The city has hired a circular economy expert. Cooperation with the Circular Economy HUB. Cooperation with the university, e.g. in the ReCreate project. City is part of circular economy entity PirkaCirc2 which helps cities and companies in circular economy.
	Improved reuse and recycling	Technical or safety risk	Lack of knowledge on different materials and substances	The city has hired a circular economy expert. Cooperation with the Circular Economy HUB. Cooperation with the university, e.g. in the ReCreate project. City is part of circular economy entity PirkaCirc2 which helps cities and companies in circular economy.
Cross-cutting	Promoting climate work of stakeholders	Reputation risk	Pressure of e.g. companies to look climate-friendly may lead to greenwashing. Reputation risk if the city is promoting climate action of such companies.	Careful consideration of how to promote the climate work of companies, Ownership steering towards subsidiaries, sustainability



				reporting development project led by subsidiary Ekokumppanit Oy, transparency and credibility of reporting develops
	Stakeholder engagement	Stakeholder engagement risk	Getting all stakeholders to work in the same direction is hard to achieve and is also time-consuming	Campaigns, information, co-operation between different stakeholders. Enable stakeholders to meet and plan long-term actions and strategies together. Carbon neutral action program 2021-25, development of participatory approaches
	Increased number of climate-friendly solutions	Regulatory and stakeholder engagement risks	The city strategy is different from the goals and strategies of private companies – not really?	Reach mutual solutions together with the companies, encourage smart solutions and prove that they are viable also for the companies' point of view
		Economic risk	Some companies may experience existential threats during global transition to a greener economy. Company bankruptcies or new companies entering the market also have an impact on the city's economy.	This is the responsibility of the Vitality and Competitiveness Service Area (EKI) and Business Tampere. Tampere also relies on sectors that are in good progress of green transition.
	Insufficient capacity to invest	Economic risk	Many climate-friendly technologies and infrastructure have high investment costs, which can reduce the city's ability to invest. Economic conditions create difficulties to commit to adequate measures.	Financial planning could increasingly rely on long-term savings and consider investments with a reasonably short payback period as profitable. It is possible to find cheaper financing for climate investments. Climate change



				preparedness will be taken into account in all city planning.
	Outdated or insufficient infrastructure	Structural	Outdated or insufficient infrastructure can create a barrier to the implementation of climate-related projects, such as renewable energy installations or electric vehicle charging networks.	City organisation, private sector operators. Cities must dare to be pioneers and invest sufficiently in infrastructure development.
	Lack of resilience	Technical or safety risk	The ability to be proactive and flexible resilience and flexibility in the case of disruptions caused by climate change.	Building resilience, preparing the organisation (e.g. Smart City for citizens and the Ecosystem Contract projects), the development of supporting responsible innovation
	Immigration	Social risk	If integration fails, social problems will be exacerbated (segregation of different violent radicalisation, extremism). The economic pressures that come with these problems. Negative attitudes of the native population towards immigrants. Increasing number of illiterate students. Lack of resources inadequate resources.	Appropriate organisation of services for immigrants. Developing the skills of immigrants Development and production of materials in plain language. Effective training based on labour needs
	Climate work	Reputational risk (also positive)	The effectiveness of climate action affects the image of the city and its attractiveness	Tampere is a frontrunner city in climate change mitigation and adaptation, so it's not a risk but a possibility.

Table 12: List of Project level Risks



3.3 Module IP-C3: Capacity Building and Stakeholder Engagement for Capital and Investment Planning

You should assess and finally work to develop internal capacity and capabilities, working with both internal and external stakeholders to accelerate the transition to climate neutrality by 2030.

C-3.1: Textual element

Capacity building:

In general, Tampere is well placed to develop an investment plan. For several years, Tampere has been preparing a climate budget, which includes the costs of climate investments for the coming years, both for the city organisation and its subsidiaries. In addition, Tampere has long invested in assessing the economic impact of climate measures, which will provide the necessary input for the investment plan. For the current investment plan, the existing climate budget had to be slightly extended with additional information and the timeframe. Because of the climate budget, the city has already established a multidisciplinary collaboration involving experts from different departments, such as finance, economic and climate. These experts are increasingly working together to advance the city's climate objectives within the financial constraints. This ensures a holistic approach, breaks down silos and promotes cross-sectoral cooperation. However, cooperation within the city is also increasingly needed with the department responsible of business e.g., to promote private and public partnerships.

However, the approach so far has been more to show whether investments are sufficient to meet climate targets, rather than to proactively guide investment planning and strategies. However, the city has already identified and implemented some ambitious projects that require modern and innovative financing and investment models (e.g. the alliance model for tramway construction, which has been described earlier), but strategic thinking through action portfolios and stakeholder engagement needs to be further developed. Although the city has put together some innovative models for financing and implementing investments and avoiding risks, these do not easily become established practices.

One identified gap to develop the Investment Plan is related to capital planning. The city needs to develop knowledge of the more diversified financing opportunities besides bank loans to finance the city's bigger climate investments. Greater use of green and other innovative financing has been identified as an area for development in Tampere. The city should identify more effectively potential investments for which this type of funding can be sought. However, currently the city has limited resources and expertise to apply for new innovative funding.

To promote smaller development projects, the city has its own project office, which is responsible for identifying suitable national and EU-level funding programs to apply for external funding to promote the city's strategic priorities. Project office also coordinates development needs and co-operation between the different departments and cities to submit a joint application for funding. In addition to identifying suitable funding opportunities and promoting cooperation, the project office also provides advice on the preparation of funding applications. Yet departments often apply for projects in a hurry and on top of other work, and unfortunately, they often wake up rather late to apply for funding.

However, from previous updates of the Carbon Neutral Tampere 2030 Roadmap and this Climate City Contract process, there has emerged an increasingly important need to focus not only on the cost estimates of the measures, but also on their financing. When the roadmap is updated in 2023-2024, one of the issues to be focused on will be a more strategic approach to climate investments and their financing. Therefore, separate sessions on costs and financing needs will be held, including experts from financial, economic and climate departments. In addition to the costs of the actions, the sessions will assess whether external funding should be sought to promote them and what the possible sources of funding could be. This work will also support the future update of the Climate City Contract and its investment plan.

Stakeholder Engagement:

The City of Tampere experts have carried out a stakeholder and system analysis, i.e. stakeholder model, and identified the issues that still need to be addressed to reach the climate target. The results will feed into the next update of the roadmap, which will take place in 2023-2024. This will help the



City of Tampere to include systemic thinking and more stakeholders in the climate work and the roadmap planning.

The Tampere climate stakeholder model brings together the main actors in society. For the time being the focus has been on the public sector, but it is increasingly clear that the contribution of businesses and residents is really important.

Public sector

The most important field of stakeholders, at least for the time being, is the public sector, whose actors in different sectors and levels are central to the work. Both the climate budget and the Carbon Neutral Tampere 2030 roadmap has been made and updated in a wide process involving all the city departments and subsidiaries, and approved by the politicians, which constitute a large part of the main stakeholders regarding carbon neutrality. The eight municipalities in the Tampere city region cooperate through a joint 2030 Roadmap for a Carbon Neutral City Region. The work is organized through national HINKU-network and follows the targets and framework of the network.

There is close cooperation also with the Centre for Economic Development, Transport and the Environment (ELY Centres) that leads the local Climate Forum, providing a common network to share information about funding opportunities, local new research innovations, crucial data and local information about the local development scenarios of emissions and carbon sequestration. Environmental institutes like The Baltic Institute of Finland bring the civil society to discussion with the local governance.

At the national level the Finnish Government, several Ministries (e.g. the Ministry of the Environment) and EU Mission support projects such as Climate Mission Finland 2030 and the Net Zero Cities network are naturally important stakeholders.

One important stakeholder identified is the financial institutions, with whom the city already cooperates a lot. However, there is a need to develop existing cooperation and, in particular, to make better use of new funding opportunities.

Private companies

The economic development agency Business Tampere Ltd, owned by the City of Tampere, is one essential link between the public and private sectors. Business Tampere promotes investments and creates an attractive environment for sustainable business in the region.

The same applies to Ekokumppanit Ltd (Ecofellows Ltd) from another angle. Ekokumppanit is also a subsidiary of the City of Tampere. It is counselling, training and offering expert services in the Tampere region to promote a sustainable lifestyle and business. The unique eco-partnership activities were launched in 2003, when the City of Tampere and its enterprises together with Pirkanmaan Jätehuolto Ltd established the company. The third owner of the company since the beginning of 2009 has been Tampereen Energia Ltd. Ekokumppanit belongs to the European network of energy agencies. It is also social enterprise and holds The Finnish Social Enterprise mark to show the engagement to responsible business activities and the social good as a primary objective.

The City of Tampere reaches private companies in the Tampere region also through a model called Climate Partners (Ilmastokumppanit). Climate partners state their commitment to carbon neutrality by 2030 and report their actions annually. There are already 116 climate partners in Tampere Region.

In addition, Tampere is a member of the Climate Leadership Coalition network for companies, high-profile individuals and other organisations leading the way to sustainable transition.

Academia and research

The stakeholder model also includes the University of Tampere and Tampere University of Applied Sciences (TAMK) with their students. The city sets a target for research community collaboration and hires a resource to promote strategic partnerships between the city and the higher education community (TAMK and the university), including student cooperation, international cooperation, business cooperation and RDI. The City of Tampere has strategic cooperation agreements with two of its main research partners, in which climate action is identified as one of the strategic topics.

Citizens

Citizens and the communities they form are becoming increasingly important stakeholders. The city is already well advanced in changing the way it does things, now that it has realised that sustainable transport choices, for example, are the choices of its citizens. The Carbon Neutral Development Programme, one of the four priorities of the Tampere's strategy, explicitly involves residents in climate work and openly develops with them ways for citizens to build a good and sustainable everyday life. This is done in partnership with communities and associations, but particularly in three selected areas. The aim is for citizens to reach the point where sustainable choices become the choices of the majority.

Media

The media is also an important stakeholder. Local newspapers, especially the Aamulehti, have a strong influence on public opinion. So do the regional radio, television and online operations of the Finnish Broadcasting Corporation (Yle). The Tampere.fi website as the city's information channel is an opportunity to report on the progress of climate work without using the media as a tool. The social media channels of the city and its various communities also have a strong influence on the opinions and everyday choices of Tampere residents.

Stakeholder mapping is also summarised in Table 13 and illustrated in Figure C-1.

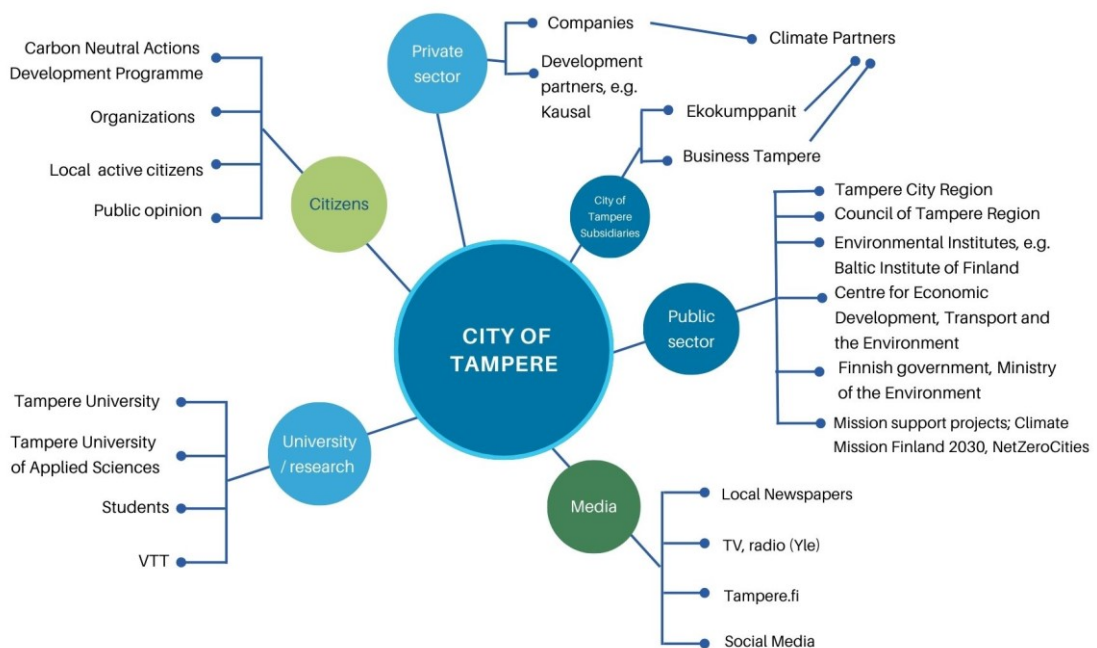


Figure C-1. Stakeholder mapping of the City of Tampere.



Stakeholders involved	Network	Influence	Interest	Level and type of Engagement
City Subsidiaries	City organisation	Joint investments, market for solutions, pricing of solutions and investments	Common climate targets, employee satisfaction (eg. new markets and innovations in green economy)	Very engaged, but strategic resources capacities planning and common targets would improve the investment success
Environmental Institutes	City organisation	Joint investments, market for solutions, pricing of solutions and investments	The funding of the institutes is dependent on the project funding, promoting green	Very engaged, but strategic resources capacities planning and common targets would improve the investment success
Tampere City Region, The Council of Tampere Region	Tampere City Region, The Council of Tampere Region	Joint investments and funding for development actions, sharing capabilities	Common climate targets, new markets and green economy	Engagement through Tampere City Region and The Council of Tampere Region, New opportunities for common investment planning may arise
Municipalities within Tampere City Region	Tampere City Region HINKU-climate neutral	Joint investments and funding from development actions, sharing capabilities	Common climate targets, new markets and green economy	Engagement through Tampere City Region, New opportunities for common investment planning may arise through new regional strategy
Government	Several	Climate funding, legislation	National climate targets	Currently through national support programs for climate mission
Financial institutions (for example EIB, MuniFin)	Several	Funding	Financing is core business for financial institutions	Very engaged. Financing agreements
Politicians	City council	City funding decisions, influencing legislation and national funding through national parties	Realising political agenda, citizen opinions	Currently mostly through city budget



Private companies	Climate Partnership, Business Tampere Ltd, Ekokumppanit Ltd	Joint investments, market for solutions, pricing of solutions and investments,	Common climate targets, employee satisfaction (eg. new markets and innovations in green economy), co-operation, realising company / organisational goals	Engagement currently through Climate Partnership exists but should be more strategic, other various forms of co-operation
Universities	City strategic collaboration commitment, CCC-commitment	Joint investments and funding for development actions, capacity building, innovative funding model building and research	New funding opportunities, capacities, collaboration, mediation between city and companies	City strategic collaboration commitment, CCC-commitment – leveraging the new strategic collaboration that has started
Citizens	The Carbon Neutral Actions development programme, Ekokumppanit Ltd	Involve residents in climate work and openly develop with them ways in which citizens can build a good and sustainable everyday life and make their own climate investment.	Engagement and ownership to reaching climate-neutrality through co-creation, good and sustainable everyday life.	Engagement level is constantly growing.
Media	Several	Report on the progress of climate work; influence the way sustainability issues are discussed locally; educating and keeping citizens up to date.	Transparent communication of information ; get more customers, be the first to publish articles and stories.	Engagement level is constantly growing.

Table 13: Stakeholder Engagement Mapping



Annex

Action	Costs	2024 (1000€)	2025 (1000€)	2026 (1000€)	2027 (1000€)	2028 (1000€)	2029 (1000€)	2030 (1000€)	Total (1000€)
Bike parking in service buildings	IC	672	760	714	844	802	694	713	5 199
	OC								
	CS								
Construction of walking and cycling tracks	IC	6 600	6 600	6 600	6 600	6 600	6 600	6 600	46 200
	OC								
	CS								
Walking and cycling guidance, bike parking and traffic counters	IC	80	80	80	80	80	80	80	560
	OC	50	50	50	50	50	50	50	350
	CS								
Charging points for electric cars in city properties	IC	40	40	40	40	40	40	40	280
	OC								
	CS								
Construction of local train stops in Hankkio and Messukylä	IC				3 000	3 000			6 000
	OC				200	400	400	400	1 400
	CS								
Transition to account-based payment system from cardbased in public transportation	IC	236							236
	OC	65							65
	CS								
Electric busses procurement	IC	4 000	4 000	15000	15000	5 000	5 000	5 000	53 000
	OC	348	348	1 260	1 260	464	464	464	4 608
	CS	180	180	450	450	240	240	240	1980
Promotion of public transportation use (commuting to work and events)	IC								
	OC	205	120	120	120	120	120	120	925
	CS	85							85
Maintaining walking and cycling tracks	IC								
	OC	2 000	2 000	2 000	2 000	2 000	2 000	2 000	14 000
	CS								
Planning for the promotion of sustainable mobility	IC								
	OC	2 200	2 416	2 504	2 133	2 213	2 296	2 379	16 141
	CS								
Phasing out of oil heating	IC	600	600	600	200				2000
	OC								
	CS	-100	-100	-100	-50				-350
Life cycle costing and carbon footprint calculations	IC	175	175	175	175	175	175	175	1225
	OC								



	CS								
Environmental certification fee for construction	IC	20	20	10					50
	OC								
	CS								
Renewing building automation systems	IC	600	450	400	350	350	350	350	2 850
	OC								
	CS	-50	-50	-50	-40	-40	-40	-40	-310
Replacement of outdoor lighting with LEDs	IC	1 000	1 000	1 000					3 000
	OC	10	10	10					30
	CS	-180	-180	-180	-180	-180	-180	-180	-1 260
Wooden buildings for kindergartens and schools	IC	2 000	2 000	2 000	2 500	2 500	2 500	2 500	16 000
	OC								
	CS	50	50	50	50	50	50	50	350
Simulators and electric vehicle for teaching in vocational school	IC	175	500	50	50	50	50	50	925
	OC								
	CS	-623	-676	-718	-718	-718	-718	-718	-4 889
Estimate of additional costs of low carbon construction	IC		1 000	1 000	2 000	2 000	3 000	3 000	12 000
	OC								
	CS								
Solar panels buildings	IC	250	200	200	200	200	200	200	1 450
	OC								
	CS	-25	-20	-20	-20	-20	-20	-20	-145
Nature-based solutions in stormwater management	IC	825	825	825	825	825	825	825	5 775
	OC	100	100	100	100	100	100	100	700
	CS								

IC=Implementation Costs, OC=Operational Costs, CS=Cost Savings

Table 14: Sectorial Costing of City Organisation: Breakdown of the Timeline

Action	Subsidiary	Costs	2024 (1000€)	2025 (1000€)	2026 (1000€)	2027 (1000€)	2028 (1000€)	2029 (1000€)	2030 (1000€)	Total (1000€)
Construction of the second part of the tramway	Tampere Tramway Ltd	IC	35 271	12 155	1 959	1 069				50 454
		OC								
		CS								
Green parking -travel chain promotion	Finnpark Ltd	IC	335	165						500
		OC								
		CS								
Construction of the Pirkkala-Linnainmaa track	Tampere Tramway Ltd	IC	4 000	40 000	40 000	40 000	40 000			164 000
		OC								
		CS								
		IC		6 000	8 500	8 500	7 000	2 000		32 000



Expansion of tram fleet due to new track section	Tampere Tramway Ltd	OC								
		CS								
Construction of roads for light traffic	Hiedanranta Kehitys Ltd	IC	203	844	2 725	1 741	1 629	900	131	8 173
		OC								
		CS								
Park-and-ride for tram in Hiedanranta	Hiedanranta Kehitys Ltd	IC		5 070	7 500					12 570
		OC								
		CS								
Replacing gas cars with electric cars	Finnpark Ltd, Pirkan Opiskelijasunnot Ltd, Tampereen Särkänniemi Ltd	IC								
		OC	74	96	128	68	68	70	70	574
		CS								
Reducing carbon footprint of vehicles	Tampere Water Ltd	IC								
		OC	30	60	90	140	190	240	300	1 050
		CS	3	7	10	15	20	25	35	115
Encouraging staff to use public transportation for commuting to workplace with employment travel ticket	Pirkanmaan Voimia Ltd	IC								
		OC	15	16	17	17	17	18	19	119
		CS								
Transitioning to LED-lighting in parking garages	Finnpark Ltd	IC	80	80						160
		OC								
		CS								
Installing an exhaust air pumps in rental properties	Tampereen Vuokrasunnot Ltd	IC	150	300						450
		OC								
		CS	-7	-14						-21
Renewing heating systems in rental properties (geothermal heating)	Pirkan Opiskelijasunnot Ltd	IC	500							500
		OC								
		CS		16	16	16	16	16	16	96
Renewing heating systems in rental properties (PILP)	Pirkan Opiskelijasunnot Ltd	IC		317	295	310	340	315	540	2 117
		OC								
		CS			31	31	31	31	31	155
Window renovations in rental properties	Pirkan Opiskelijasunnot Ltd	IC	142	211						353
		OC								
		CS								
Geothermal heating in new buildings in Särkänniemi	Tampereen Särkänniemi Ltd	IC	60							60
		OC								
		CS								



Increasing urban green space in Särkänniemi	Tampereen Särkänniemi Ltd	IC	60							60
		OC								
		CS								
Improving light traffic accessibility in Särkänniemi (new ticket sale and gate)	Tampereen Särkänniemi Ltd	IC	500							500
		OC								
		CS								
Low-carbon construction when building city office block	Tampereen Virastotalo Ltd	IC	100	100						200
		OC								
		CS								
RTS-classification for the city office block	Tampereen Virastotalo Ltd	IC	200	200						400
		OC								
		CS								
Installing a heat pump in TREDU building	TREDU-Kiinteistöt Ltd	IC	500							500
		OC								
		CS	-78	-78	-78	-78	-78	-78	-78	-468
Shutting down wastewater treatment plant in Viinikanlahti and Rahola	Tampere Water Ltd	IC	1 000	1 000						2 000
		OC	50	50						100
		CS								
Promotion of the artificial groundwater plant project, including the Rusko port-treatment plant and transmission lines	Tampere Water Ltd	IC				5 000	10 000	10 000	5 000	30 000
		OC								
		CS								
Yearly network renewals of water distribution network	Tampere Water Ltd	IC	10 000	10 000	10 000	10 000	10 000	10 000	10 000	70 000
		OC								
		CS								
Optimization of water production and distribution	Tampere Water Ltd	IC	100							100
		OC		10	10	10	10	10	10	60
		CS		-10	-10	-10	-10	-10	-10	-60
Transition to LED-lighting for indoor and outdoor lighting in Tampere exhibition and sports center	Tampere Exhibition and Sports Center Ltd	IC	337							337
		OC								
		CS	124	124	124	124	124	124	124	868
Monitoring energy usage and balancing heating systems in rental properties	Pirkan Opiskelija-asunnot Ltd	IC								
		OC	48	48	48	48	48	48	48	336
		CS								



Reducing carbon footprint of Tampere Water plants and network investment	Tampere Water Ltd	IC								
		OC	300	400	400	400	400	400	400	2 700
		CS	300	400	400	400	400	400	400	2 700
Water leakage inspection in the wastewater network	Tampere Water Ltd	IC								
		OC	33	33	33	33	33	33	33	231
		CS	33	33	33	33	33	33	33	231
Piloting an environmental tool in a facility construction projects	Tampere Water Ltd	IC								
		OC	100							100
		CS	100							100
Optimizing the input of precipitation chemical at a wastewater treatment plant	Tampere Water Ltd	IC								
		OC	36	36	9					81
		CS	-17	-17	-4					-38
Investments enabling energy savings in wastewater intake pumping	Tampere Region Central Wastewater Treatment Plant Ltd	IC		2 000						2 000
		OC		40	40	40	40	40	40	240
		CS								
Investments in solar energy	Tampere Region Central Wastewater Treatment Plant, TREDU-Kiinteistöt Ltd, Palvelukiinteistöt Ltd, Tampereen Vuokra-asunnot Ltd	IC	217	250	300					767
		OC	2	7	2	17	17	17	17	79
		CS	-31	-34	-24	-24	-24	-24	-24	-185
Shutting down Lielähti natural gas power plant	Tampereen Energia Ltd	IC			10 000					10 000
		OC								
		CS								
Additional investments in Naistenlahti 3 power plant: flue gas recovery and district heating battery	Tampereen Energia Ltd	IC	32 000							32 000
		OC		1 500	1 500	1 500	1 500	1 500	1 500	9000
		CS		-8 200	-7 500	-6 100	-5 900	-6 000	-5 900	-39 600
Lighting system renewals in TREDU buildings	TREDU-Kiinteistöt Ltd	IC	340							340
		OC								
		CS	-2	-2	-2	-2	-2	-2	-2	-12
Investment provision for		IC		850	850	850				2 550
		OC								



future projects in TREDU buildings	TREDU-Kiinteistöt Ltd	CS								
Electric boiler and district heating battery	Tampereen Energia Ltd	IC	12 000							12 000
		OC		8 500	10 200	10 500	9 700	9 400	9 300	57 600
		CS		-14 200	-14 300	-15 200	-14 900	-14 900	-14 900	-88 400
LVIS energy saving procedures for city rental properties	Tampereen Vuokra-asunnot Ltd	IC	90	90	90	90	90	90	90	630
		OC								
		CS	-7	-14						
Hiedanranta stormwater solutions	Hiedanranta Kehitys Ltd	IC	60	29	2 789	362	460	1578	10	5 288
		OC								
		CS								
Piloting waste collection system in Ojala--Lamminrahka region	Tampere Regional Solid Waste Management Ltd	IC	118	99	44					261
		OC								
		CS								
Construction of a sludge treatment and biogas plant	Tampere Region Central Wastewater Treatment Plant	IC	19 400							19 400
		OC	4 500	4 500	4 500	4 500	4 500	4 500	4 500	31 500
		CS								
Supporting circular economy	Tampereen Virastotalo Ltd	IC	50	50						100
		OC								
		CS								
Biogas filling station (Tarastenjärvi)	Tampere Regional Solid Waste Management Ltd	IC	360							360
		OC								
		CS								
Developing the capacity of a dry reactor at a biofinery	Tampere Regional Solid Waste Management Ltd	IC				1 988				1 988
		OC								
		CS								
Improving nutrient cycling	Tampere Regional Solid Waste Management Ltd	IC		248						248
		OC								
		CS								
Developing carbon capture	Tampere Regional Solid Waste Management Ltd	IC					248			248
		OC								
		CS								
Heat recovery from wastewater treatment plants	Tampere Region Central Wastewater Treatment Plant	IC		2 500						2 500
		OC		75	75	75	75	75	75	450
		CS								

IC=Implementation Costs, OC=Operational Costs, CS=Cost Savings

Table 15: Sectorial Costing of Subsidiaries: Breakdown of the Timeline