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ENERGY TRANSITION

**Climate-4-CAST**

# Boosting Climate Work with CADS Tool in Tampere

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Hanna Meriläinen, Project Manager

Climate and Environmental Policy Unit, City of Tampere

[interreg-baltic.eu/project/climate-4-cast/](https://interreg-baltic.eu/project/climate-4-cast/)





# Some facts about Tampere

- Located in Western Finland between two large lakes: Lake Näsijärvi and Lake Pyhäjärvi.
- Attractive city with 260 000 residents.
- Growing fast: In 2024 +5130 residents. 2033: 291,000 residents.
- Intensive investments to public transportation (tramlines, bike lanes), green investments in the city's power plant, new housing areas, new sports arenas etc.

**Ensuring sustainable growth is a challenge!**

# City strategy: CLIMATE NEUTRAL TAMPERE 2030

Tampere aims to  
be internationally known  
for impactful action for  
climate and biodiversity.

The 100 Climate-Neutral and Smart Cities by 2030

Climate neutrality:  
80 % emission  
reduction from  
1990 level.  
The rest will be  
compensated.

# Key strategies and governance tools

## Key strategies:

- **Tampere City Strategy 2030.** *Is currently under development and will be published by end of 2025.*
- **Mayoral program 2025-2029.** *“Tampere is committed to achieve carbon neutrality by 2030 and actions from the Climate Neutral Tampere 2030 roadmap will be implemented.”*
- **Climate Neutral Tampere 2030 Roadmap** – summarizes the actions towards climate neutrality

## Key tools for **climate governance and monitoring**:

- **Climate budget** – monitors the funding and resources directed to climate actions
- **Climate Watch** - monitors the progress of roadmap climate measures
- **Climate Action Decision Support tool** – visualizes the emission development and impacts of various climate measures



Image: Visit Tampere / Laura Vanzo



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CLIMATE-NEUTRAL & SMART CITIES

TAMPERE



# Climate Neutral Tampere 2030 roadmap

First roadmap in 2020. Update every two years.  
Roadmap measures are divided into 7 themes:

0. Climate leadership and stakeholder work
1. Sustainable urban planning
2. Sustainable mobility
3. Sustainable construction
4. Sustainable energy
5. Sustainable consumption
6. Sustainable urban nature

Total number of measures is **397**.  
Close work with city departments and subsidiaries.

THEME 0 – Climate leadership and stakeholder collaboration			
Tampere is climate neutral in 2030. Tampere takes climate change risks and adaptation seriously.			
0.1 Coordination and communications of climate work	0.2 Knowledge-based management and impact assessment	0.3 Sustainable business and corporate cooperation	0.4 Sustainable procurement
THEME 1 – Sustainable detailed planning			
The city grows primarily into public transport zones and regional centres.			
1.1 Assessment of the urban structure	1.2 Guiding the urban structure	1.3 Conditions for sustainable mobility	1.4 Strengthening green areas
THEME 2 – Sustainable transport system			
Share of sustainable modes of transport is 69%.			
2.1 Tram traffic	2.2 Commuter train traffic	2.3 Bus traffic	2.4 Service level of public transport
2.5 Pedestrian and bicycle traffic	2.6 Road transport	2.7 Delivery traffic	2.8 Waterborne traffic
2.9 Guidance of mobility	2.10 Transport equipment and work machinery		
THEME 3 – Sustainable construction			
New construction is at a zero-energy level, and the carbon footprint of housing is small.			
3.1 New construction in city properties	3.2 Renovation construction in city properties	3.3 Guidance of low-carbon construction	3.4 Guidance of private construction
3.5 Infrastructure construction	3.6 Use of recycled materials		
THEME 4 – Sustainable energy			
Renewable energy accounts for 80%.			
4.1 Centralised renewable energy	4.2 Smart energy networks and services	4.3 Decentralised renewable energy and energy efficiency	4.4 Abandoning oil heating
THEME 5 – Sustainable consumption			
Consumption is sustainable and the circular economy is functional.			
5.1 Waste management	5.2 Sustainable lifestyle	5.3 Ecosocial education	5.4 Eating
5.5 Sustainable tourism and experience economy			
THEME 6 – Sustainable urban nature			
Urban nature and blue-green structures sequester carbon, and the city is prepared for climate change.			
6.1 Carbon sinks in urban nature	6.2 Role of the blue-green structure in adapting to climate change	6.3 Ecological network	

# Monitoring through Climate Watch

**TAMPERE** Tampere's climate and environmental watch / Climate

Home Theme All measures Indicators Information about the service 2024 Emission scenarios

### Climate and Environmental Watch Tampere

The Tampere Climate Watch brings together the city's climate measures in an easy-to-use service.

The purpose of the Climate Watch is to provide an up-to-date picture of the measures and help assess their impact.

**Climate**

- Climate: Climate Neutral Tampere 2030
- LUMO: Tampereen luonnon monimuotoisuussuojelma

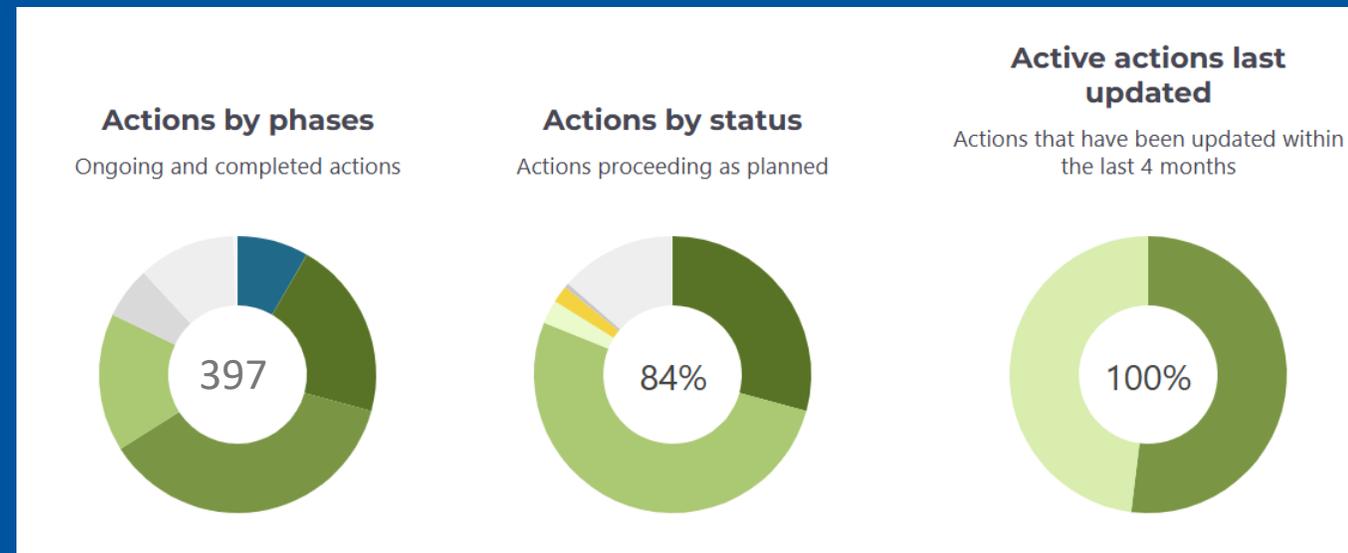
### Towards climate neutrality by 2030

Tampere's goal is to be climate neutral by 2030, which means reducing greenhouse gas emissions in the city by 80% compared to 1990 and offsetting the remaining 20%.

Year	Emissions (thousand MT/yr.)
1990	1,300
2023	660
2030 (Goal)	260

Reduced: 640 thousand MT/yr. (from 1990 to 2023)  
Left to reduce: 400 thousand MT/yr. (from 2023 to 2030 goal)

- An online platform that tracks the city's climate actions and progress.
- The status of the action is updated three times a year by the responsible department.
- CADS Tool will be integrated in the Climate Watch



# Climate budget in Tampere

- Part of the official city budget since 2020
  - Reporting of the realisation in the financial statements.
  - More detailed reporting in Microsoft Power BI.
- In Tampere, the climate budget has two parts:
  - **Emissions budget:** Maximum target for CO2 emissions.
    - Scope: City region (Scope 1 and 2).
  - **Financial plan:** Allocated financial resources to climate measures. Actions and their costs.
    - Scope: City organisation + subsidiaries

Monitors the progress towards carbon neutrality.  
Evaluates the sufficiency of funding.

Provides information for decision making and improves transparency.

Combines climate work with the **city budget** and **financial statements**.



Image: Visit Tampere / Laura Vanzo

# Climate Budget

TAMPERE'S CLIMATE BUDGET = EMISSIONS BUDGET + FINANCIAL PLAN

Developed step by step; now established practice.

- Budget for 2020:

EMISSIONS

- Budget for 2021:

EMISSIONS

ACTIONS

COSTS

- Budgets for 2022-2025:

EMISSIONS

ACTIONS

COSTS

EMISSIONS  
IMPACT

- Budget for 2026:

EMISSIONS

ACTIONS

COSTS

EMISSIONS  
IMPACT

SUFFICIENCY OF  
FUNDING

Regional emissions budget

Financial plan for city organisation



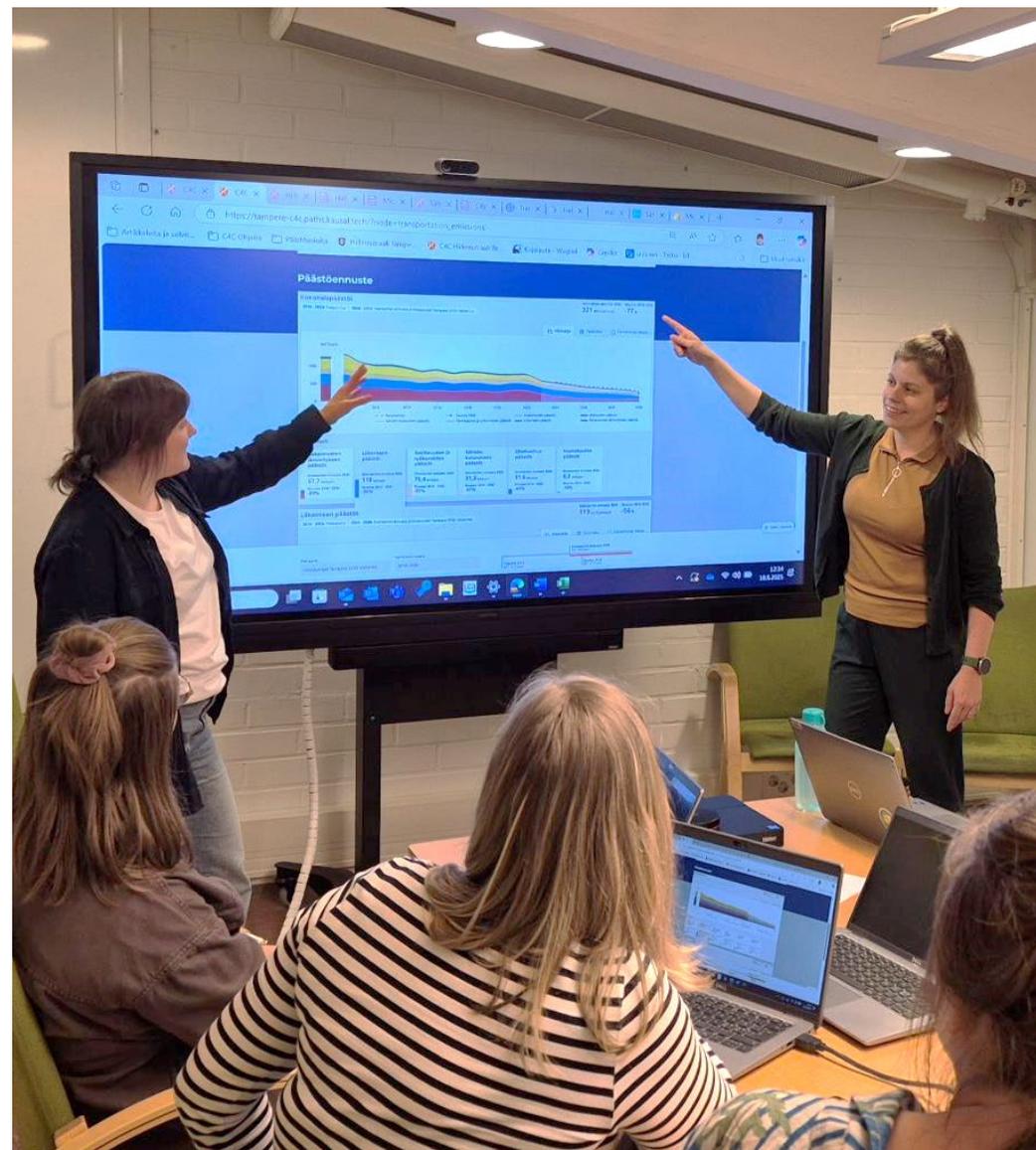
# Climate Action Decision Support Tool

## Key functionalities for Tampere

- 1. Visualisation of emission development in the city.** *How are we achieving our climate neutrality target.*
- 2. Visualisation of the various impacts of climate measures** (emissions, costs and benefits, ROI, cost-effectiveness).
- 3. Scenario building and adjustability:** Preparing different emission reduction paths towards climate neutrality.

# Key users

- **The climate experts at the Climate and Environmental Policy Unit**, who provide information for decision-making and planning processes and prepare different scenarios.
- **Citizens, politicians, decision-makers** etc. interested in Tampere's climate work. (Easily understandable data.)
- **Other cities' climate experts** interested in Tampere's climate work. (Both Finnish and English.)



Essi Lehtinen / City of Tampere

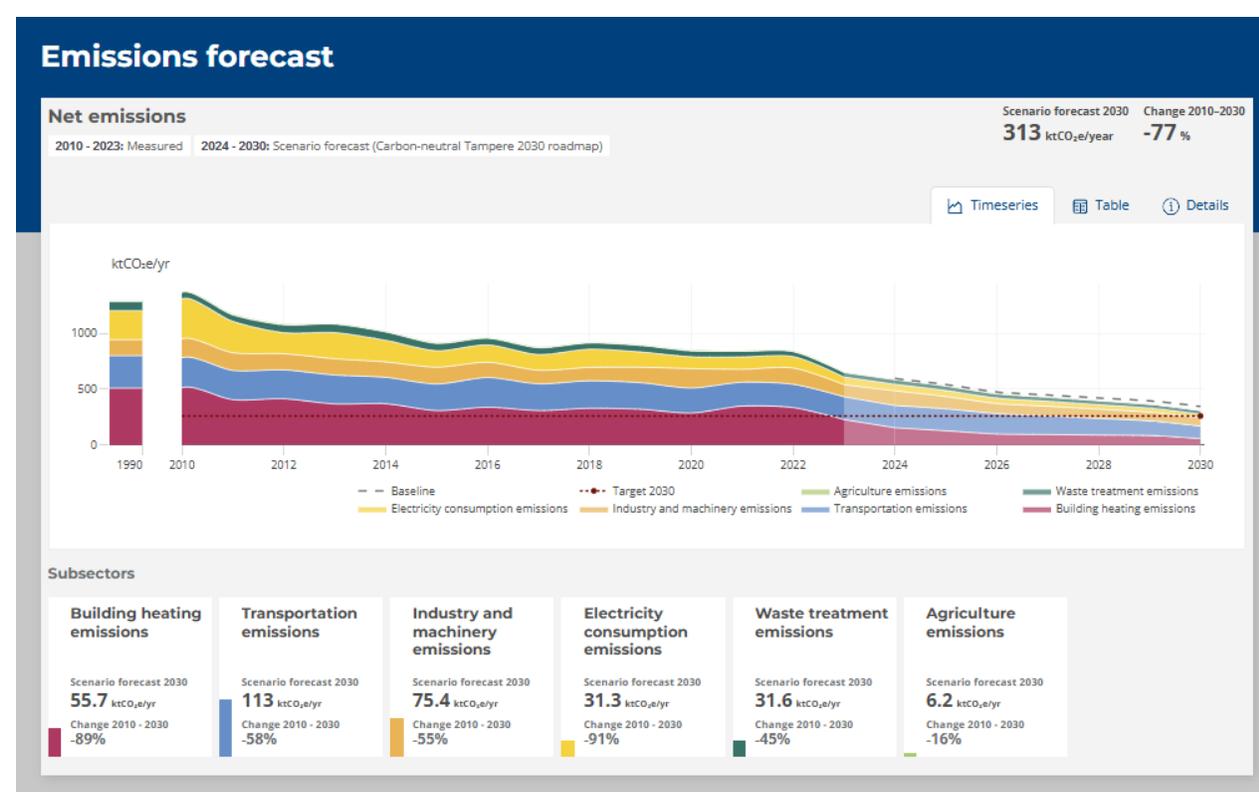
# Emission forecast

## Setting in current CADS-tool:

- **Baseline inventory:** 2010-2023
- **Baseline forecast:** 2024-2030
- **Actions ON scenario:** Carbon Neutral Tampere 2030 Roadmap Scenario

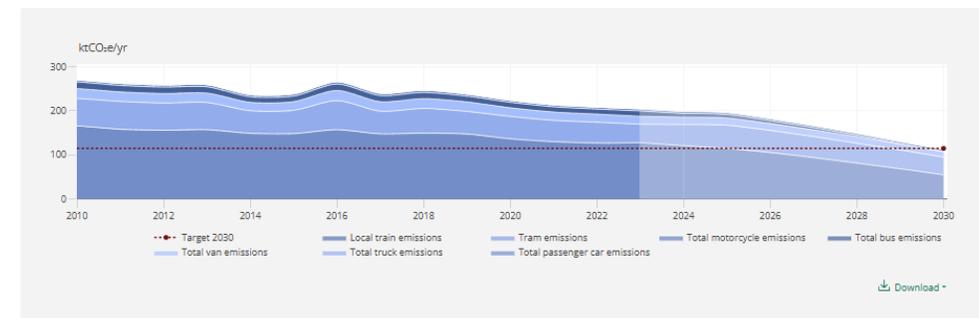
## Key takeouts:

- **Provide visualisations** that show the development of city level emissions and how we are (or NOT) achieving our climate neutrality target.
- **Open data:** Provide detailed information about how we prepare the baseline forecasts or to what data sources the inventory data is based on.



### Transportation emissions

In the emission calculation, emissions from transport are divided into road traffic, tram traffic and local train traffic. Road traffic is further divided into passenger car, truck, van, bus and motorcycle traffic. The calculation of emissions from transport is based on three basic factors: transport performance (km's) by vehicle type, propulsion and vehicle specific emission factors, and propulsion distributions by vehicle type.



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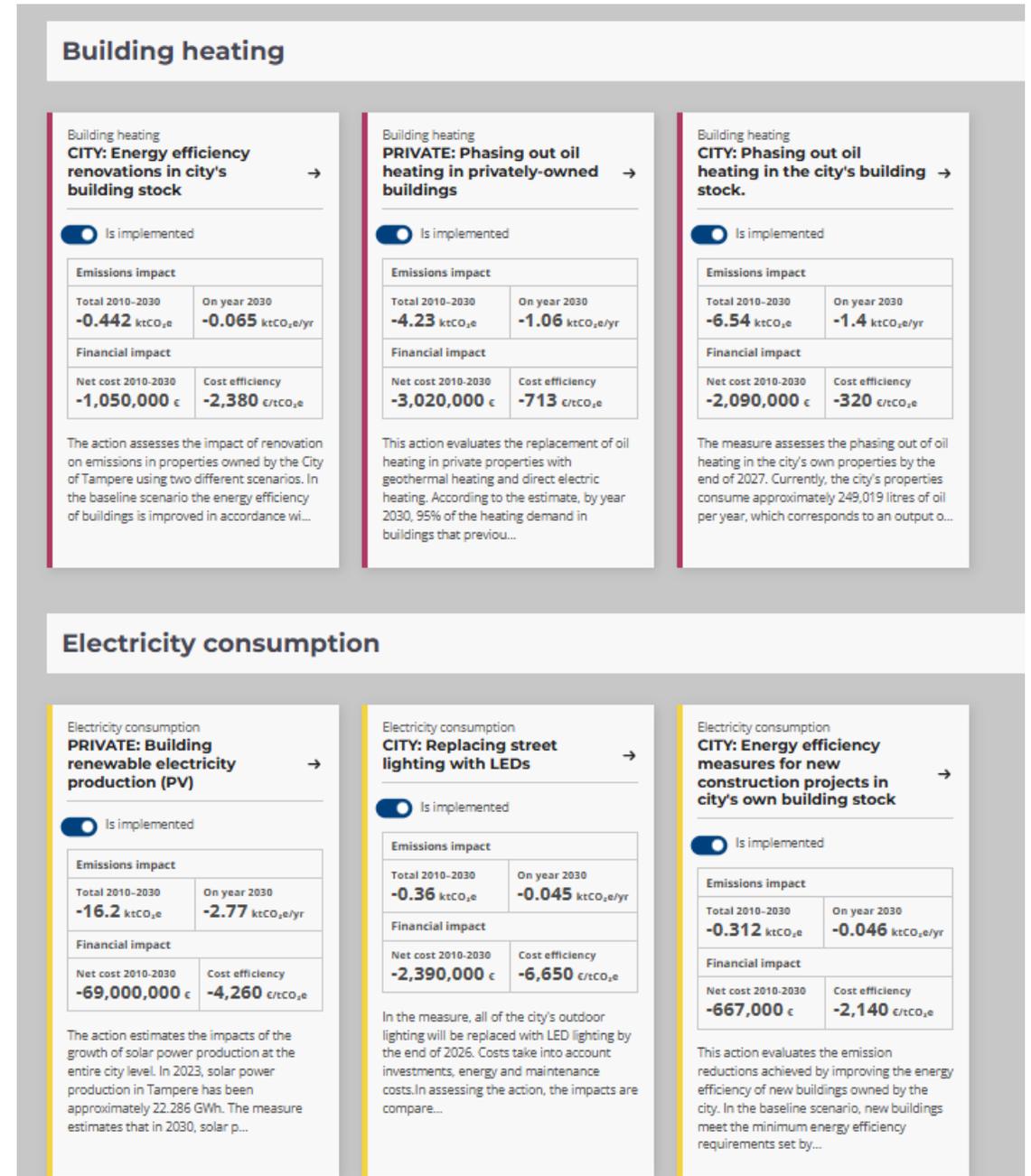
# Visualisation of Climate Action Impacts

## What kind of actions?

- Currently there are around 15 actions.
- Most actions are carried out by **the city and city owned companies**, but also actions in the **private sector** (households, citizens, companies etc.)
- Including also actions without cost impacts.

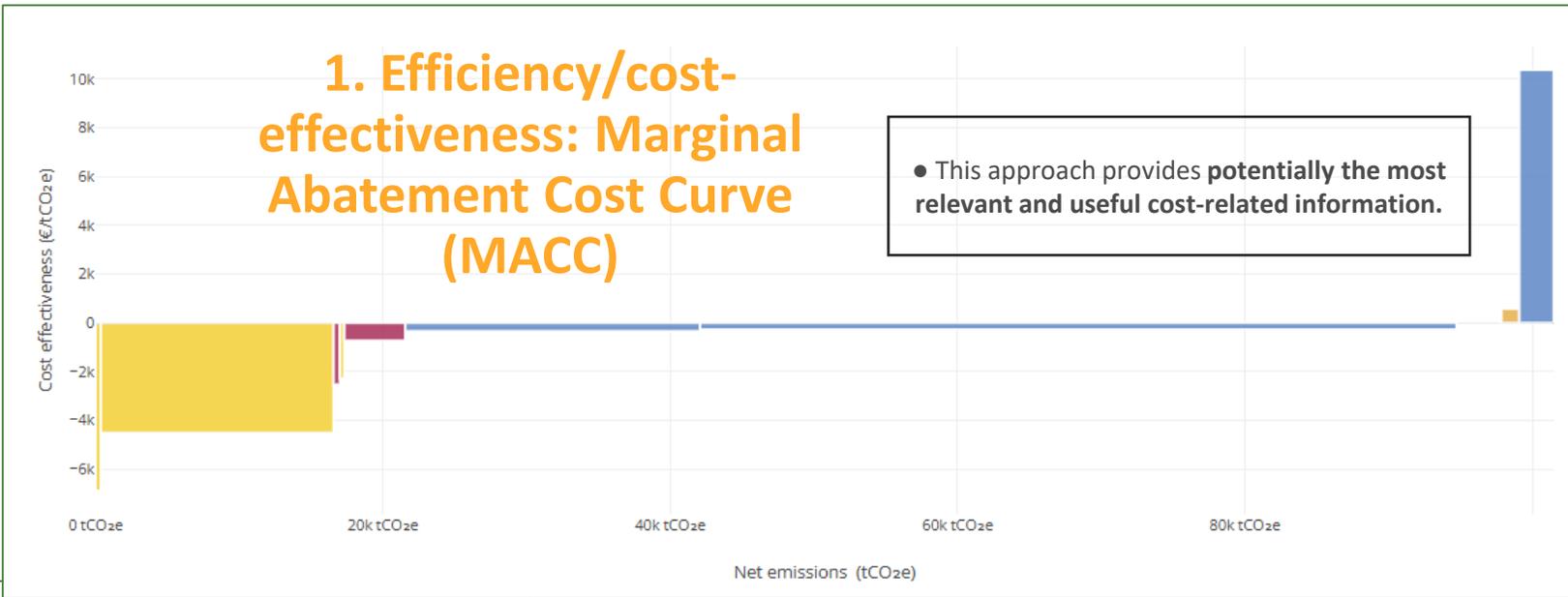
## Action card information:

- Emission impacts (CO<sub>2</sub>e)
- Net costs (€) (operating and investment costs)
- Cost-efficiency (€/tCO<sub>2</sub>e)

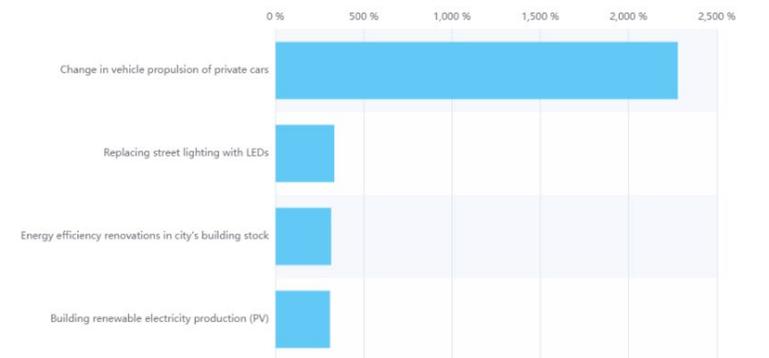


# Visualisation of Climate Action Impacts

## 2. Visualisation of costs and benefits



## 3. Return on investment



• This enables to show other impacts in monetary terms in addition to direct costs/cost savings, e.g. health benefits or regional economic impacts.

• Potentially interesting information, especially from the perspective of political and economic experts.

# Preparing different scenarios

## Custom scenarios & Parameters

- **Custom-scenarios: Actions ON/OFF**
- **Parameter actions: changes emission factors or prices values.**
  - Electricity production emission factor
  - District heating price
  - Electricity price
  - Oil price
- We are considering adding more parameters later.

### Price parameters:

Each card's sliders allow the user to set both the initial value of the parameter or the annual change in price (%).

**Parameters**

**PARAMETER: Shift to low-carbon in national electricity production**

Is implemented

Change in electricity production emission factor

0 t/GWh

Emissions impact	
Total 2010-2030	On year 2030
0 ktCO <sub>2</sub> e	0 ktCO <sub>2</sub> e/yr

**Financial impact**

Net cost 2010-2030	Cost efficiency
0 €	- €/tCO <sub>2</sub> e

This parameter action allows you to reduce the electricity production emission factor in the tool to a level lower than the baseline forecast, on a scale of 0-20 gCO<sub>2</sub>e/kWh. At the maximum reduction (-20 gCO<sub>2</sub>/kWh), the el...

**PARAMETER: District heating price**

Is implemented

District heating price

94 €/MWh

Price change

0 %/yr

Emissions impact	
Total 2010-2030	On year 2030
0 ktCO <sub>2</sub> e	0 ktCO <sub>2</sub> e/yr

This parameter allows you to modify the development of district heating prices by changing either the price itself or the annual percentage change. By default, the district heating price is set at 93.9€/MWh with a change...

**PARAMETER: Electricity price**

Is implemented

Electricity price

0 €/kWh

Price change

0 %/yr

Emissions impact	
Total 2010-2030	On year 2030
0 ktCO <sub>2</sub> e	0 ktCO <sub>2</sub> e/yr

This parameter allows you to modify the development of electricity prices by changing either the price itself or the annual percentage change. By default, the oil price is set at 18 cents/kWh with a change rate of 0%. Th...

**PARAMETER: Oil price**

Is implemented

Oil price

0 €/kWh

Price change

0 %/yr

Emissions impact	
Total 2010-2030	On year 2030
0 ktCO <sub>2</sub> e	0 ktCO <sub>2</sub> e/yr

This parameter allows you to modify the development of oil prices by changing either the price itself or the annual percentage change. By default, the oil price is set at 14.5 cents/kWh with a change rate of 0%. The mini...

# Wrap up

- **CADS Tool** has many possibilities. Every city needs to choose what they want to do and focus on.
- For **Tampere** the main goals are:
  - Visualise the **emission development in the city**.
  - Visualise the **different impacts of climate measures**
  - **Identify cost-effective actions to reduce emissions**.
  - Share our climate work, data and methods openly to everyone who is interested!

See tool: [C4C Carbon-neutral Tampere 2030 | Emission Scenarios](#)



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# Kiitos! Thank you! Tack!

**Contacts:**

Hanna Meriläinen, Project Manager, [hanna.m.merilainen@tampere.fi](mailto:hanna.m.merilainen@tampere.fi)

[interreg-baltic.eu/project/climate-4-cast/](https://interreg-baltic.eu/project/climate-4-cast/)

