

# Adaptation as Part of Climate Action Plan

## Case Turku SECAP 2029



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# The first carbon-neutral city in Finland by 2029

City Council 16 April 2018



# Climate Action

## Top-9 Cities in 2014

Report by CDP and Climate Action Group,  
Published in New York, Sep. 2015

CITY	COUNTRY	PERCENT REDUCTION	TARGET YEAR
Melbourne	Australia	100	2020
Copenhagen	Denmark	100	2025
Gävle	Sweden	100	2030
Östersund	Sweden	100	2030
Växjö	Sweden	100	2030
Santa Fe	US	100	2040
Stockholm	Sweden	100	2040
Turku	Finland	100	2040
Antwerp	Belgium	100	2040

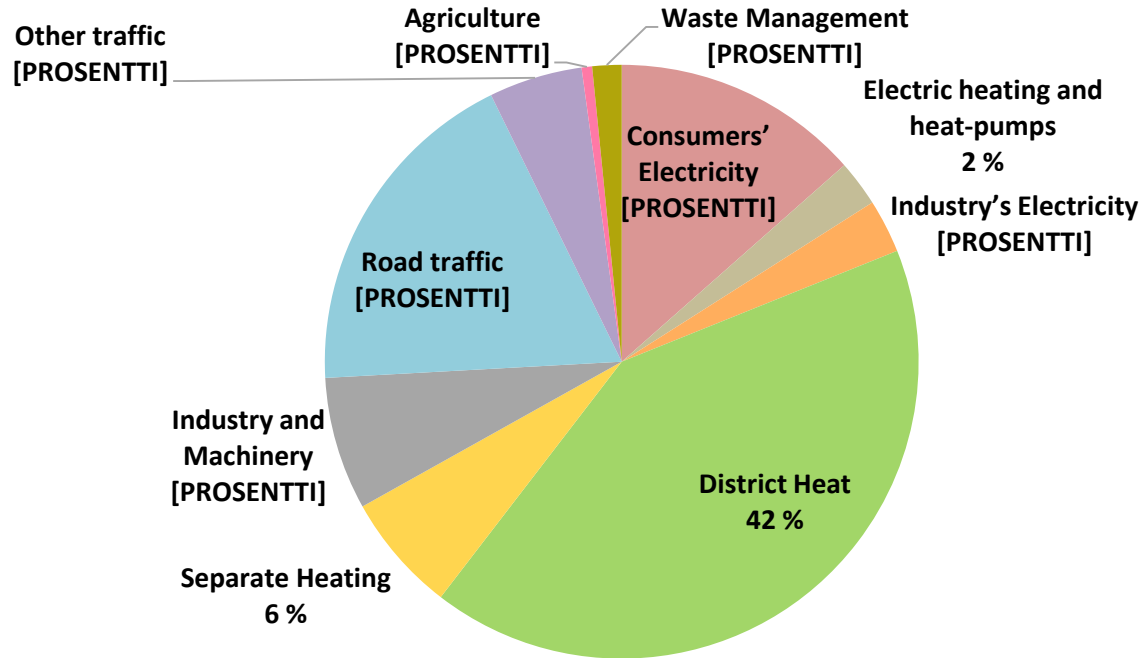


# UNLOCKING AMBITION:

TOP CORPORATE AND SUB-NATIONAL CLIMATE COMMITMENTS

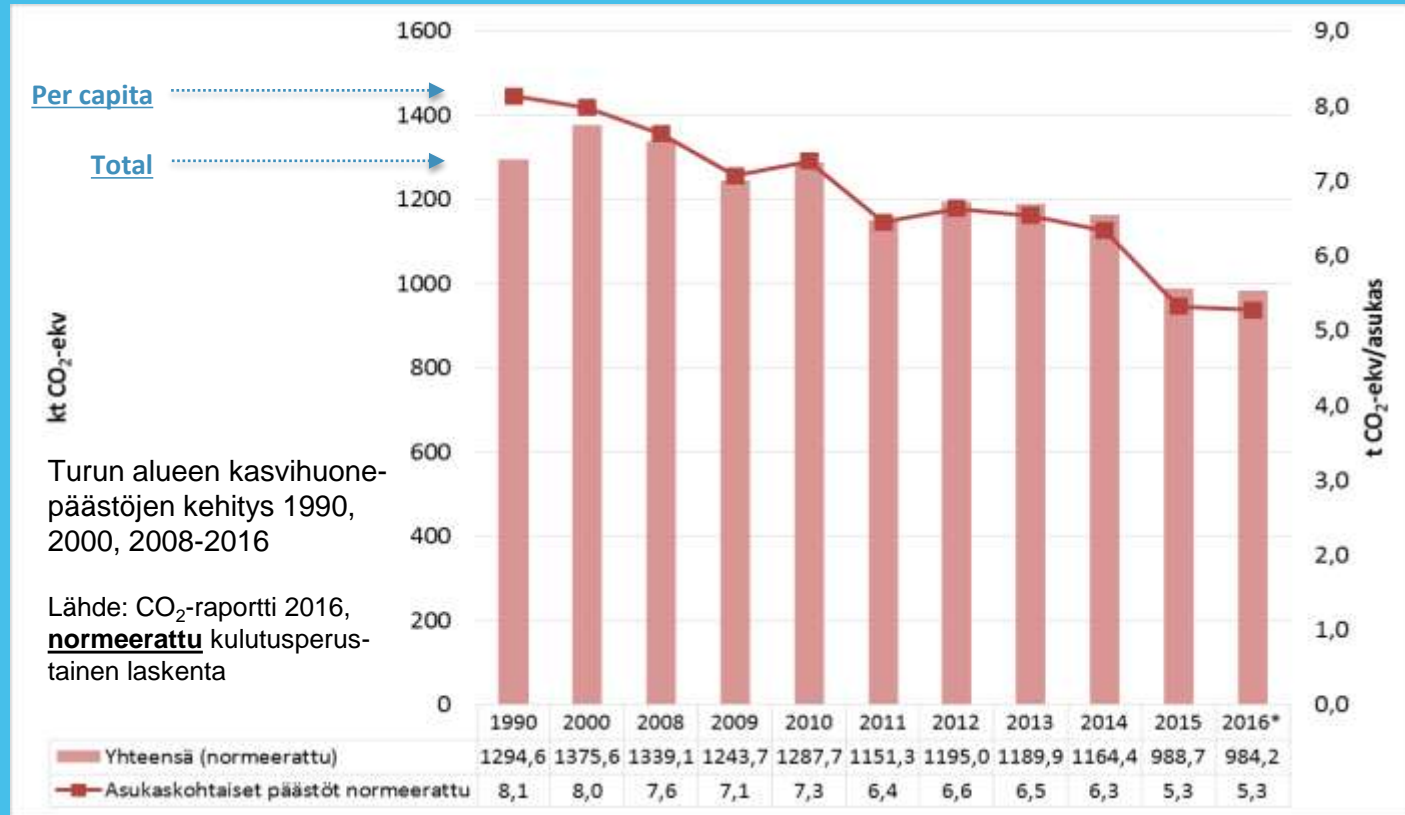
SEPTEMBER 2015 UPDATE

# Division of GHG Emissions in Turku (2015)



# Carbon-neutral Turku

*GHG emissions of Turku area are reduced succesfully*



# Examples of Climate Action in Turku

- ❖ Green energy
- ❖ Sustainable mobility
- ❖ Sustainable urban structure
- ❖ Green / circular economy
- ❖ Co-creation and participation
- ❖ Climate responsibility and stewardship



Carbon-neutral Turku

# Climate Plan 2029

(EU SECAP – Sustainable Energy and Climate Action Plan)



## European SECAP-model

- Periodic goals and milestones 2021 – 2025 – 2029 (for each City Council period)
- Baseline, emission scenarios, objectives and defined interventions / actions
- Mitigation actions for main emission sectors / reducing GHG emission
- Climate risks / vulnerabilities / adaptation actions and readiness
- Covenant of Mayors: network and data of over 6.000 cities
- Support of European Commission and city networks, events and projects, incl. Horizon 2020 opportunities





# Risks, vulnerabilities and adaptation in the SECAP Process

- Climate-related risks and vulnerabilities with potential impacts on the city, consequences to humans, properties, livelihoods and environment are identified.
- The outcomes are used for planning and implementing effective adaptation policies and measures.





## The analysis addresses:

- Climate risks threatening the city
- Socio-economic, physical and environmental vulnerabilities of the city
- The impacts of climate risks and vulnerabilities on the city

## The process is four-fold:

1. Analysis of current situation
2. Risks threatening the city
3. Vulnerabilities of the city
4. Expated impacts



Title	Author(s)	Year	Description	Boundary	Method & Source(s)	Published?
CDP (Carbon Disclosure Project) report	City of Turku	2017	Annual report prepared for the CDP (Carbon Disclosure Project).	Municipal (City of Turku)	Prepared to meet the reporting requirements of the CDP.	✓
Yhteiskunnan turvakuvastrategia	The report	2017	The Security Strategy for Society 2017 is a government resolution that harmonises the set of national principles regarding preparedness and guides the preparedness actions taken by the administrative branches.	National, Finland	The Security Strategy was drawn up through broad-based cooperation, taking into account the viewpoints of all actors. Since comprehensive security is built in cooperation it involves the authorities, the business life, NGOs and communities, and citizens.	✓
Turun kaupungin tulvavesiohjelma 2016-	City of Turku	2016	Changes in the legislation and cli'e's hydrology and increase in floods have given reason to update the storm water strategy of the City of Turku.	Municipal (City of Turku)	Developed by the stormwater workgroup of the City of Turku.	✓
Ilmastomuutos paikallisuksella	Finnish meteorological institute	2015	This report can be used in the capital area and other cities as back ground information in preparing for climate change and changes caused by climate change.	Regional (capital area), Finland	This report contains recent information of climate change and some of its impacts in the capital area of Finland based on the IPCC 5th Assessment Report and its GHG (RCP) scenarios.	✓
Turun, Raision, Naantal ja Rauman rannikkosaaren tulvariskien hallintasuunnitelma vuodelle 2016-2021	Centre for Economic Development, Transport and the Environment of Southwest Finland	2015	The coastal area of Turku, Raision, Naantali and Rauma has been designated as a nationwide significant flood risk area by the decision of the Ministry of Agriculture and Forestry (20.12.2011). The region is one of Finland's 21 major flood risk areas. Flood risk management plans have been developed to reduce flood risk, to prevent and mitigate floods and to improve preparedness in coastal areas with significant flood risk.	Regional (Southwest Finland)	The flood risk management plan was developed by the environment department of the Centre for Economic Development, Transport and the Environment of Southwest Finland under the guidance of the coastal region steering group.	✓
Suomi kestävän luonnonvarakauden edelläkävijäksi 2050 (joulukuuta 2014)	Ministry of Employment and Economy	2014	In the upcoming decades climate change, global growth and urbanization will increase the competition of natural resources. Natural resources and know-how of sustainable use of natural resources enable countless opportunities to offer sustainable products and services both locally and globally now and for future generations.	National, Finland	The report was prepared under the supervision of the energy- and climate policy secretary working group.	✓
Kansallisen ilmastomuutoskseen sopeutussuunnitelma 2022	Ministry of Agriculture and Forestry	2014	The aim of this report is that the Finnish society is capable of controlling risks related to climate change and to adapt to changes occurring due to climate change.	National, Finland	The plan has been developed to implement nationally the adaptation strategy of the European Union.	✓
Luonnon puolesta - ihmisen hyväksi. Suomen luonnon monimuotoisuuden suojelun ja kestäväin käytön toimintasuunnitelma 2013-2020	Ministry of the Environment	2013	The aim of this report is to ensure biodiversity and ecologically, economically, socially and culturally sustainable use and development of natural resources that will not only ensure preservation of the Finnish nature but also make sure that future generations have the opportunity to livelihoods based on natural resources.	National, Finland	An update of the strategy of protection and sustainable development of Finnish nature to correspond with the international Convention on Biological Diversity and internationally agreed targets in the EU.	✓
Toimintasuunnitelma luonnonmonimuotoisuuden vahvistuksen rajoitteiksi	Ministry of the Interior	2012	Action plan for preventing natural disasters and limiting damages caused by natural disasters and climate change.	National, Finland	Coordinate the national implementation of the Hyogo Framework for Action (HFA) and reporting to the UN about implemented actions to prevent natural disasters and limit damages on national level.	✓
Ilmastomuutos, hyvinvointi ja kestävyyden	The Association of Finnish Local and Regional Authorities	2012	A guidebook for cities and municipalities how to integrate climate change to be an important part of the decision making process. The guidebook emphasises the importance of taking in to account climate change to reach the best ecological, economical and social outcomes in decision making.	Regional, Finland	The guidebook is the outcome of a project implemented in cooperation with 34 municipalities. The project was funded by The Association of Finnish Local and Regional Authorities, Ministry of the Environment, Ministry of Employment and Economy and Ministry of Transport and Communications.	✓

# 1. Analysis of current situation (tables)

## Status of information and knowledge

## 2. Climate-risks threatening the city (of Turku)

Identifying the risks and assessing their level

- Current risk level
- Changes of intensity
- Changes of frequency





# Preliminary Prioritisation of the Risks

- **Excess/peak rain, flooding, sea level rise and storms** have been recognized as the most acute and/or relevant risks caused by Climate Change in Turku
  - Closer analysis is under way
- **Work to indentify other remarkable risks** is ongoing
  - Topics such as migration and wider security situation are under discussion (in Finland)
- **Indicators** are being defined and good references and cases are welcomed!

		<< Current Risks >>		<< Anticipated Risks >>		
Climate Hazard Type		Current hazard risk level	Expected change in intensity	Expected change in frequency	Timeframe	Risk-related indicators
	<u>Extreme Heat</u>	Low	Increase	Increase	Long-term	
	<u>Extreme Cold</u>	Moderate	Decrease	Decrease	Medium-term	
	Extreme Precipitation	Moderate	Increase	Increase	Long-term	
	<u>Floods</u>	Moderate	Increase	Increase	Short-term	
	Sea Level Rise	Low	Increase	Increase	Long-term	
	<u>Droughts</u>	Low	Increase	Increase	Long-term	
	<u>Storms</u>	High	Not known	Not known	Short-term	
	Forest Fires	Low	Not known	Not known	Current	
Other	Urban heat impact phenomenon	Not Known	Increase	Increase	Short-term	
<u>Other</u>	Diseases, epidemics	Low	Increase	Increase	Not known	

① Hide the rows that do not concern your local authority

② To be completed for the climate hazards that concern your local authority only.

③ Click here to see examples of risk-related indicators

### 3. Vulnerabilities of the city

- To which extent and how is the city able - and/or unable - to respond to the changes and extreme phenomena caused by Climate Change?
- Vulnerability is assessed from two perspectives:
  - Socio-economic, e.g., age structure, densities and economic situations of population
  - Physical and/or environmental perspective, e.g., location and condition of infrastructure and buildings, topography of urban structures and areas



# Vulnerabilities in Turku

Socio-economic, physical and environmental vulnerabilities were recognized and analyzed

For example:

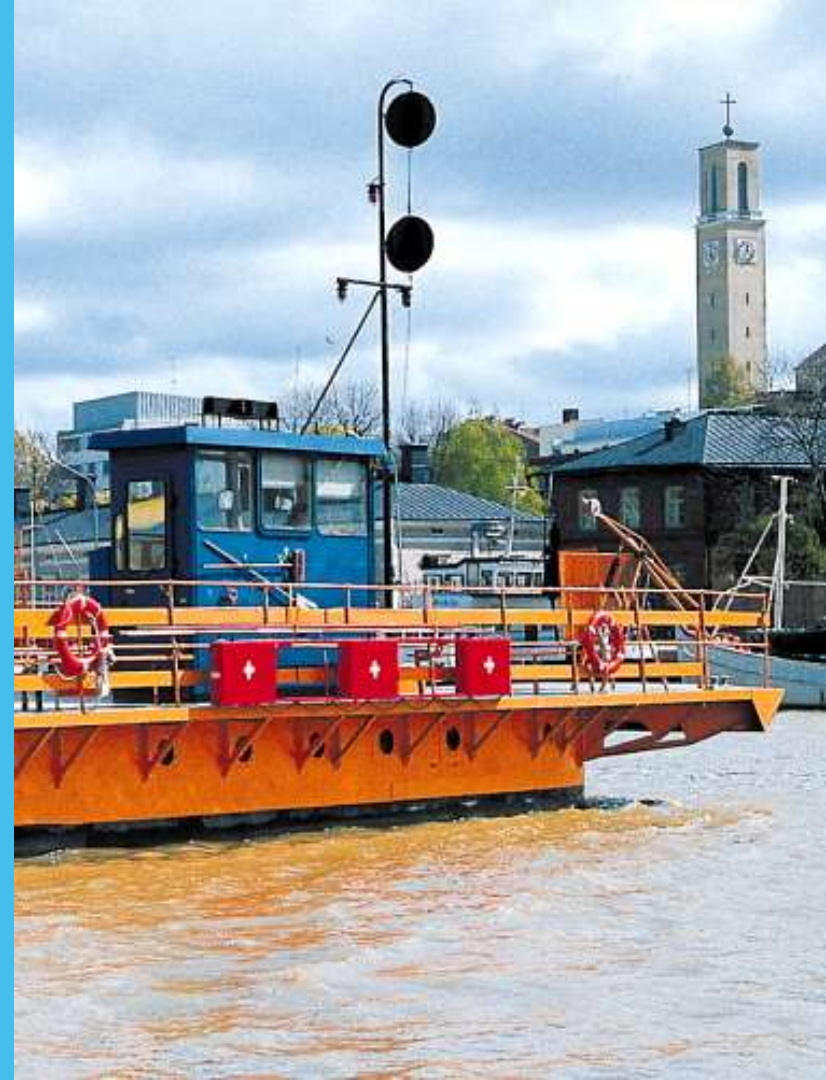
- Infrastructure and its status
- Economic situation and stability
- Educational level / resources
- Age structure of population
- Location(s) of the city and urban structures
- Topographies
- Warning systems and preparedness plans
- Monitoring of the state of environment





## 4. Potential Impacts of Climate Change in Turku

- Identifying the sectors where Climate Change is most likely to have impacts
  - Which impacts are to be expected?
  - What is the likelihood of actualization of the risks?
  - How to prepare and adapt?



# Impacts to be expected

- Water issues and topics related to human wellbeing and economic livelihoods have been identified as the fields with largest potential impacts / as most critically impacted
- Further analysis on environment, biodiversity and ecosystem services and related impacts is ongoing

Impacted Policy Sector		Expected Impact(s)	Likelihood of Occurrence	Expected Impact Level	Timeframe	Impact-related indicators
<u>Buildings</u>			[Drop-Down]	[Drop-Down]	[Drop-Down]	
<u>Transport</u>			[Drop-Down]	[Drop-Down]	[Drop-Down]	
<u>Energy</u>		In case of disruptions in the energy sector (due to e.g. storms or crown snow-load) the impacts are possibly extensive since the importance of this sector.	Possible	High	Medium-term	
<u>Water</u>		Increased precipitation might lead to increase in nutrient run off into water bodies. The risk increases especially if the soil will remain unfrozen for longer periods of time under the winter. This might lead to higher risk of eutrophication.	Likely	[Drop-Down]	[Drop-Down]	
<u>Waste</u>			[Drop-Down]	[Drop-Down]	[Drop-Down]	
<u>Land Use Planning</u>			[Drop-Down]	[Drop-Down]	[Drop-Down]	
<u>Agriculture &amp; Forestry</u>		The production capacity for some agriculture and forest ecosystems might increase due to climate change. On the other hand this might cause new risks and challenges for the ecosystem and its current organisms, e.g. new hazardous diseases, organisms or the increase in numbers of such.	Possible	Not Known	Current	
<u>Environment &amp; Biodiversity</u>		The biodiversity of nature has been declining and is expected to decline due to changes in ecosystems in the future as well. Effects on food security, well-being, etc. Are hard to predict.	Likely	Not Known	Current	
<u>Health</u>		Health problems related to extreme heat might increase. On the other hand health problems related to extreme cold might decrease. Diseases and epidemics spread by insects might increase. Changes in precipitation might lead to increase in run off waters and the risks of contamination of household waters might increase. Decrease in snow during winter months might increase mental health problems.	Possible	Not Known	Short-term	
<u>Civil Protection &amp; Emergency</u>			[Drop-Down]	[Drop-Down]	[Drop-Down]	
<u>Tourism</u>			[Drop-Down]	[Drop-Down]	[Drop-Down]	
<u>Other</u>	[please specify]		[Drop-Down]	[Drop-Down]	[Drop-Down]	

# Remaining / ongoing work

- Expert interviews
  - Closer look into risks and impacts of rains, floods, and sea level rise
  - Impacts on environment and biodiversity and potential of ecosystem services in adaptation
  - More exact and comprehensive analysis and next steps on vulnerabilities
- Interdisciplinary preparation group and stakeholder engagement are ongoing and will continue
- Adoption of Turku Climate Plan 2029 (SECAP) by the City Council 11 June 2018
  - This is the main starting point rather than a goal!
  - Implementation will be an engaging process with participation, continuous improvement and extensive co-creation activities both for mitigation and adaptation
- Turku SECAP process with Climate Action Cards, Platform and Forum
  - providing everyone in (or even outside of) Turku interested to take part to identify, propose and implement impactful actions as part of Climate Action in Turku.



- We will further identify, measure/assess and follow on the risks, vulnerabilities and impacts with indicators and tools available and to be developed
- We want to contribute to innovative development of indicators and tools in co-operation and partnerships
- We will prepare for the identified risks, work on the vulnerabilities and build resilience
- We want to be an active partner in the international city networks and partnerships and develop into a forerunner in creating climate-proof cities



# Solutions are created and the story is told together

- ❖ Co-creation partnerships
- ❖ Citizen participation
- ❖ Climate activism of businesses
- ❖ The whole society is challenged – everybody can create and implement climate actions and share the story



*How do you wish to take part?*

*What could we do together?*

*Do you have ideas and thoughts to share?*

*Contact:*

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# Thank you!