TURKU

Circular Turku – towards a resouce-wise city 2029

Circular City Hubs

Tue 14th Dec 2021

City of Turku, Project manager Niina Ruuska

This is Turku

- Former capital and oldest city of Finland (AD 1229)
- Close to **200.000** residents and over **325 000** in the region
- 2 universities and 4 universities of applied sciences
- **40 000** students in higher education and **11 000** in vocational
- **City of Culture**, Creative, Maritime, Bio and Diagnostic industries
- **Active Civic Society**
- Dense Urban Structure
- Rich natural environment and **Archipelago**

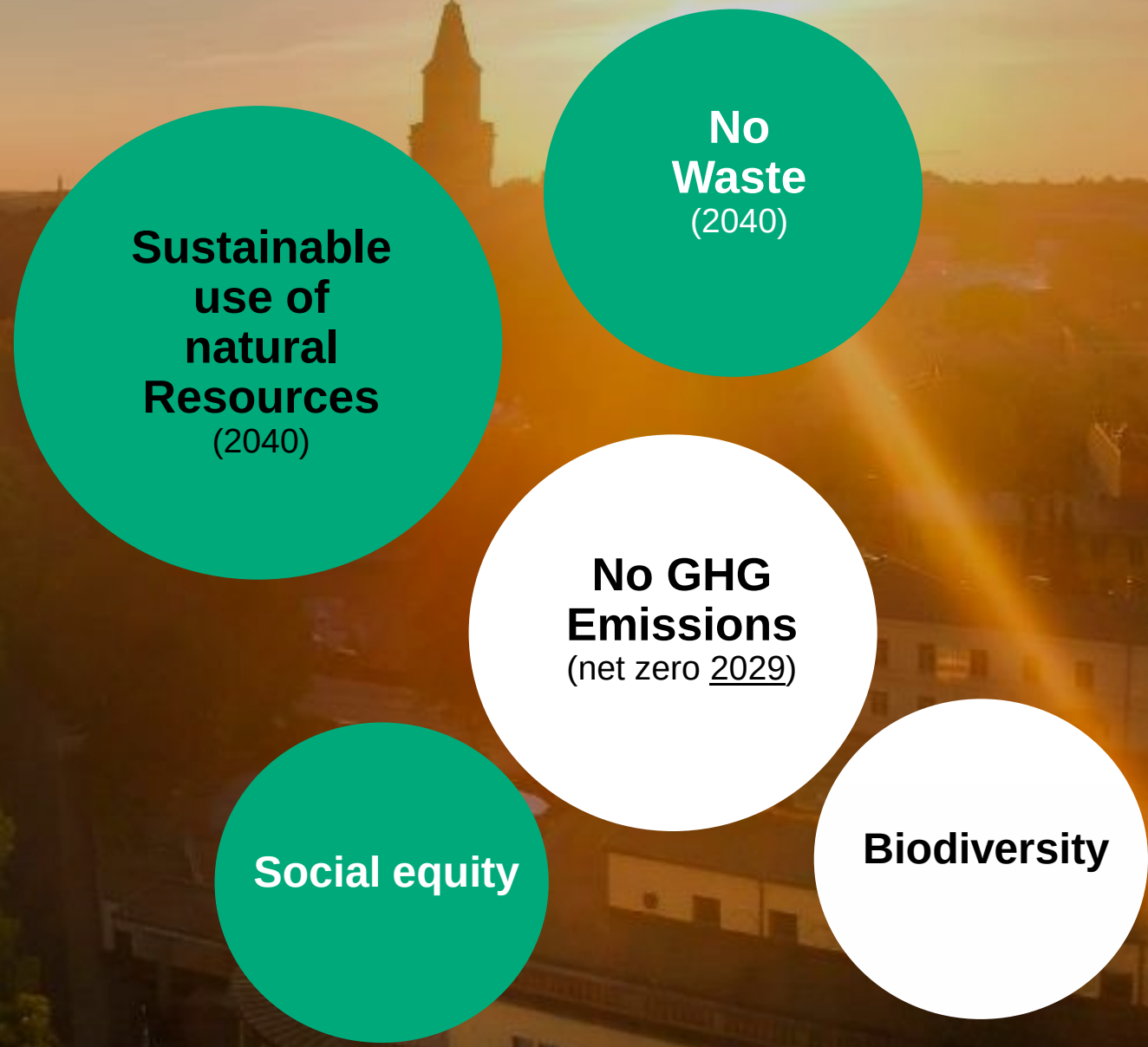
CITY OF TURKU IS A WINNER OF THE

Covenant of Mayors for Climate & Energy EUROPE 2020 Awards

Objective

Turku will be Resource-wise by 2040

Turku City Strategy
and Mayor’s programme



CIRCULAR TURKU

The City of Turku has an ambitious climate goal to become carbon neutral in 2029, in time for its 800th anniversary. Turku is linking circular economy to its Climate plan.

Circular Turku roadmap targets

- Five key sectors: food, energy, construction, transport and water.
- Six cross-cutting enables of circular economy.
- Circular economy and biodiversity protection agendas are aligned to support synergies.

Action and impact

Fair & inclusive transition

Biodiversity enhancement

Global and local partnerships

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Turku is an international forerunner in carbon neutrality and circular economy

Circular economy can reduce emissions effectively and generate new business ecosystems and jobs. Turku supports fair and inclusive transition to circular economy that benefits all city residents.

1 **Material circulation**

2 **New clean energy sources**

3 **Strengthening carbon sinks**

- **Food & nutrient cycles**
- **Energy systems**
- **Buildings and construction**
- **Transport and logistics**
- **Water systems**

https://www.turku.fi/en/carbon-neutral-turku/circular-turku

CROSS-CUTTING ENABLERS OF CIRCULAR ECONOMY

What can we do for Circular Economy as a city?
THE DIVERSE ROLES OF LOCAL GOVERNMENT

Planner	Public buyer	Regulator	Enabler	Convener
Urban planning and infrastructure development will support resource wisdom and zero waste.	Public procurement will be made according to circular economy principles.	Local regulation will plan for and enable the circular economy transition	The city will support actors who want to engage in the circular economy	Turku will facilitate collaboration between diverse actors on common platforms.

Circular Turku is achieved through active collaboration among regional actors, municipal companies, businesses, universities and residents.

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WASTE WATER TREATMENT PLANT (WWTP)
as part of Water-Food-Energy -nexus

- Serves 13 municipalities and treats 90 000 m^3/d
- 99% of BOD, P & Solids removed and 85% of N
- Remarkable improvement in ecological condition of the Archipelago Sea
- Contributing to Climate Adaptation and Mitigation
- Located underground in urban area (since 2009)

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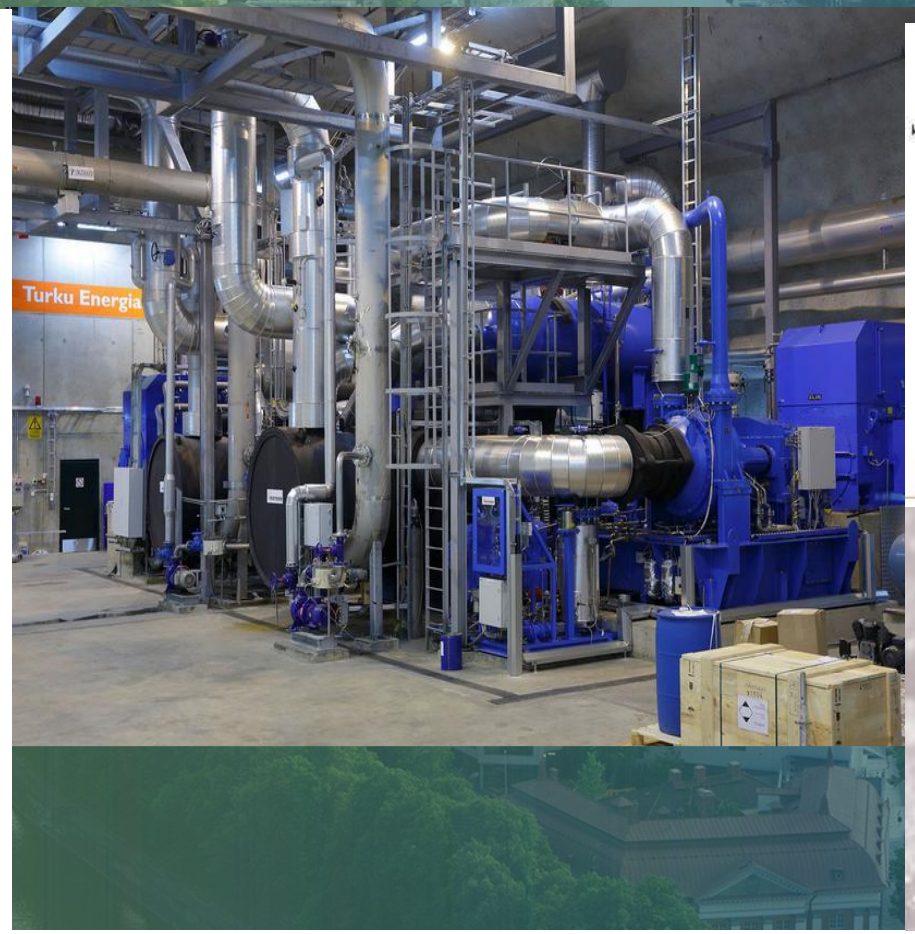
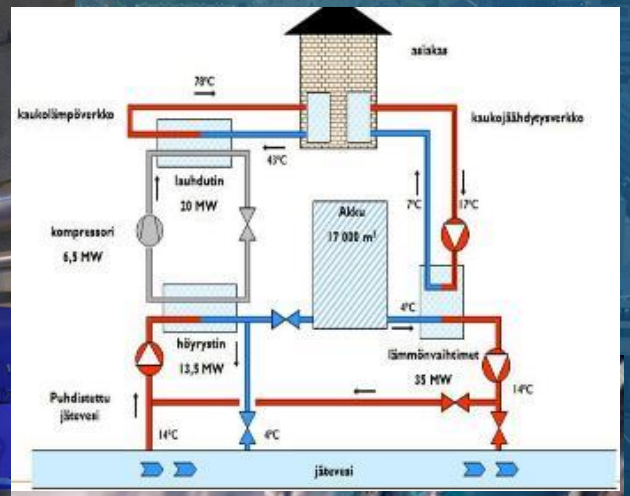
WWTP AS AN ENERGY PLANT
District heating and cooling from the Waste Water

- Heath pumps collect 10 x more energy than needed to run the whole WWTP.
- Heat energy is sold out to warm up houses at winter and cool them at summer.

- In city infra WWTP can be classified also as an energy plant, which is generating carbon free energy with high efficiency.
- WWTP provides 10 % of Turku area's district heat.





WWTP
as the source of bioenergy and soil improvement

- **Sludge is used for biogas production, nutrient recovery and humus production**

→ serving needs for electricity, heating, carbon-neutral transport and farming.

- **The whole cycle including the logistics is carbon-neutral.**

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