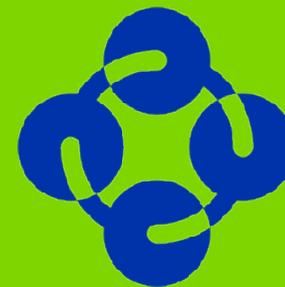


yttv



**Joint approach by cities in the Helsinki
Metropolitan Area - climate protection by
reducing energy consumption**

**EU targets are challenging
Global atmospheric warming
not to exceed 2°C**



Helsinki Metropolitan Area



The greenhouse gas emissions and energy consumption of the Helsinki Metropolitan Area are increasing more rapidly than its population



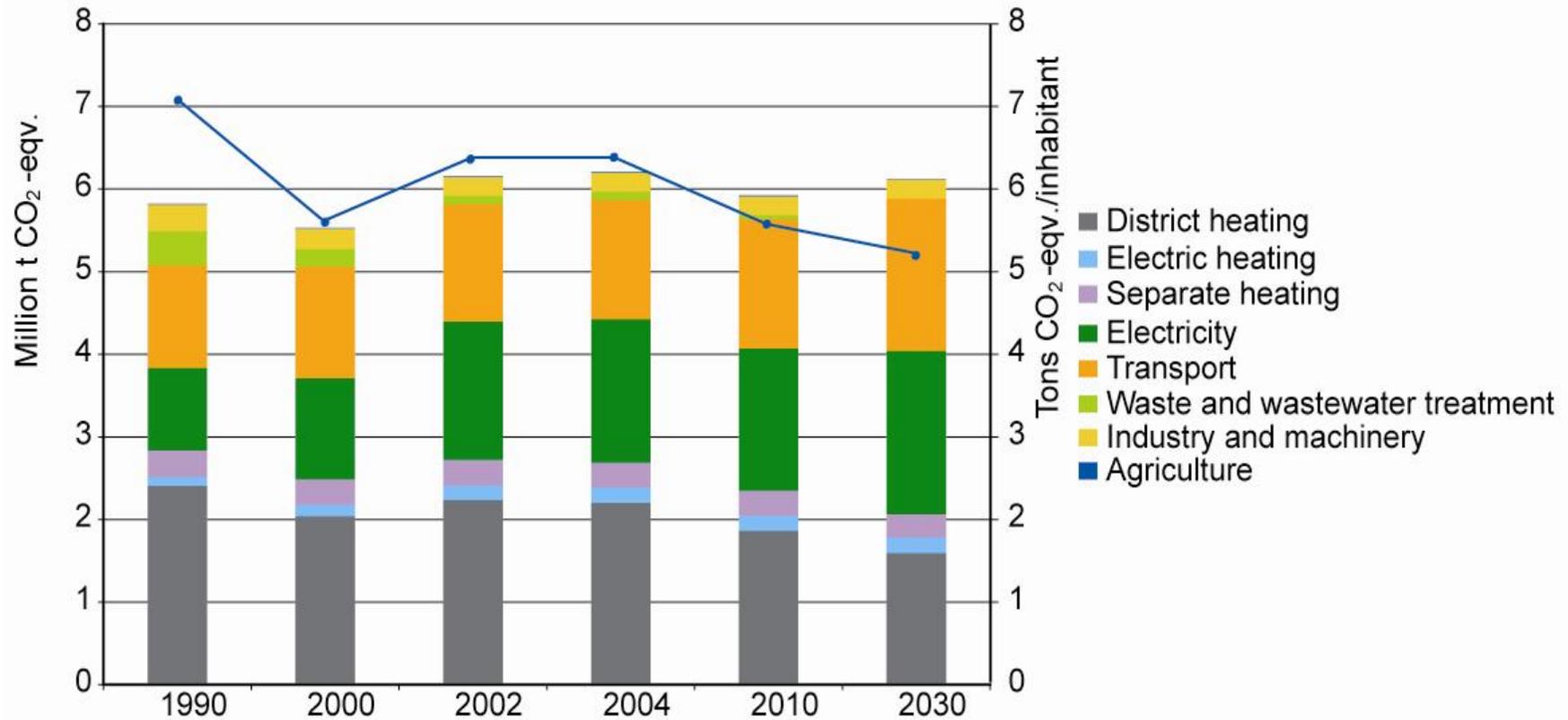
- The millionth inhabitant 30.4.2007.

- The growth of population nearly 1% per year.

- Total GHG-emissions increased 12 % between 2000 and 2004

- Traffic volumes of the region are growing heavily

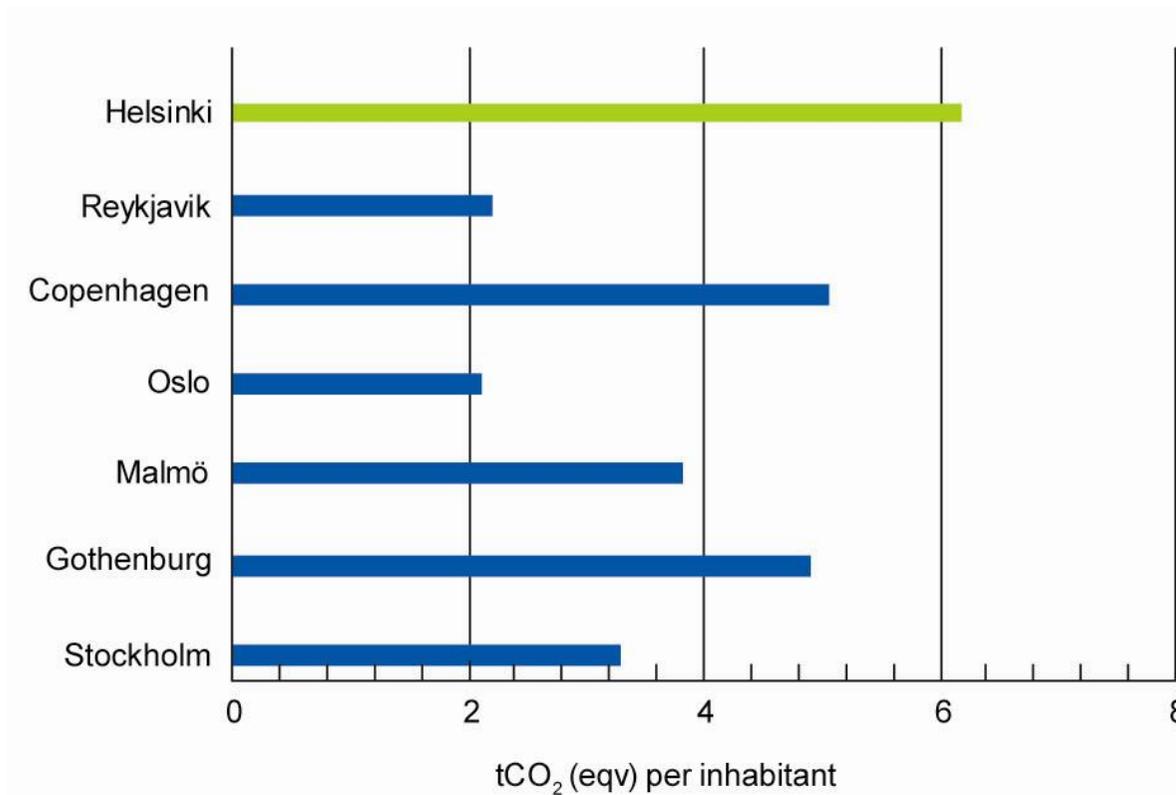
Consumption-based greenhouse gas emissions in the Helsinki Metropolitan Area



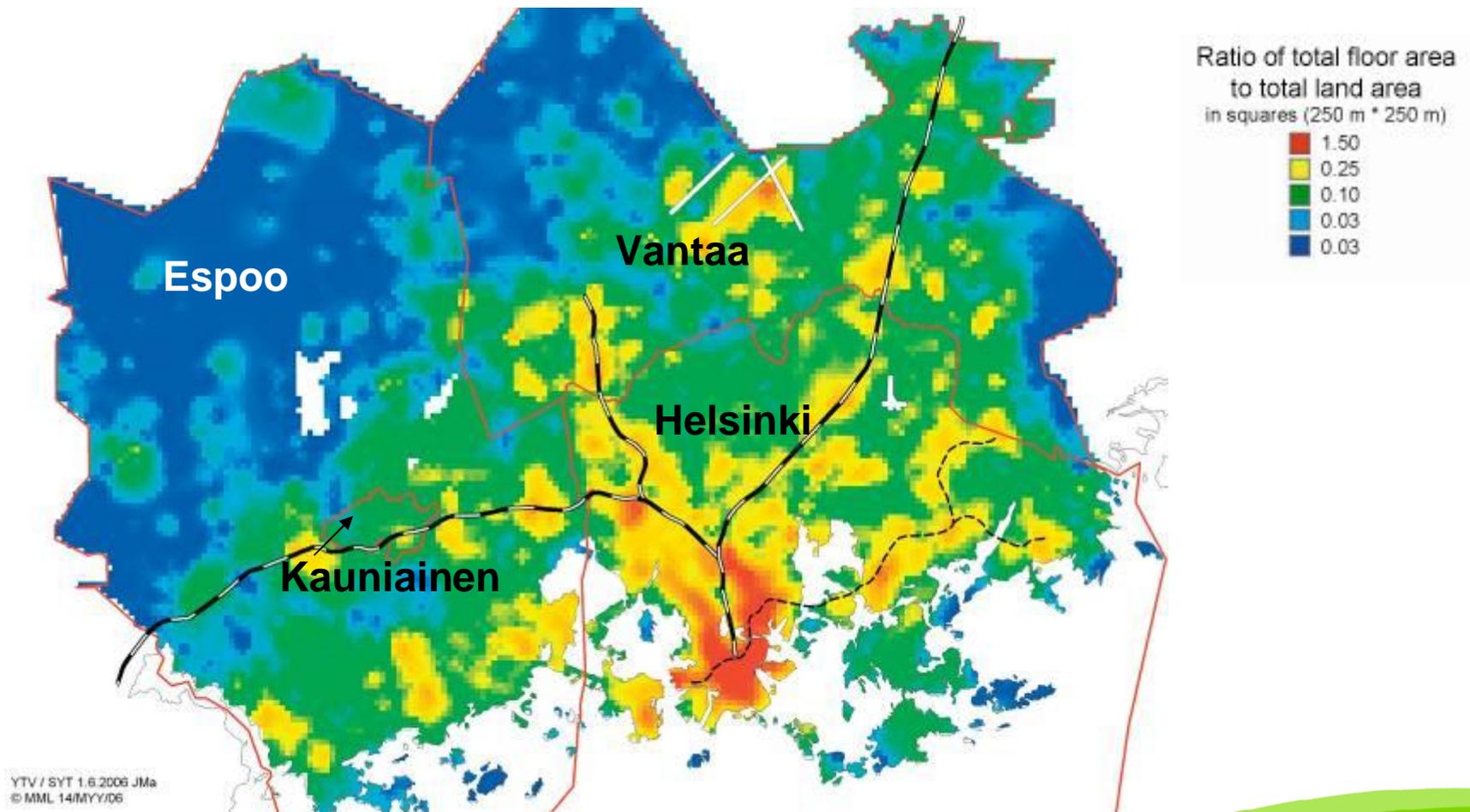
The main sources of emissions are:

heating	43 %
electricity consumption	28 %
transport	23 %

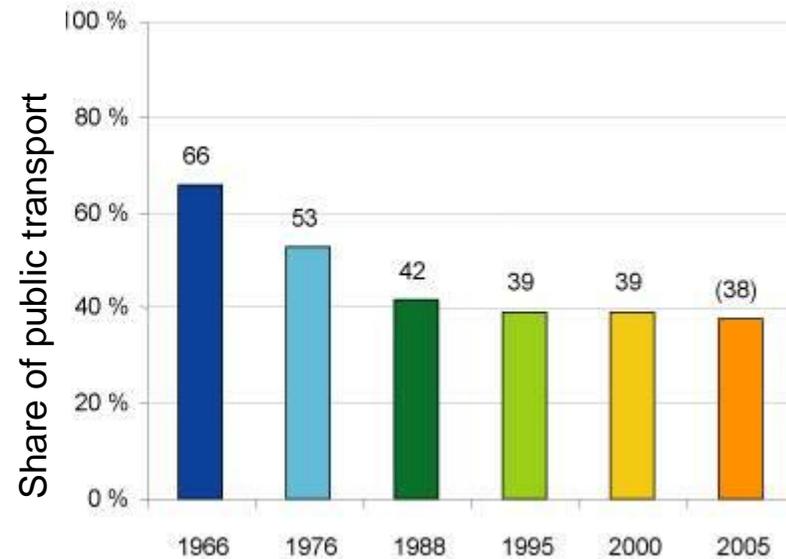
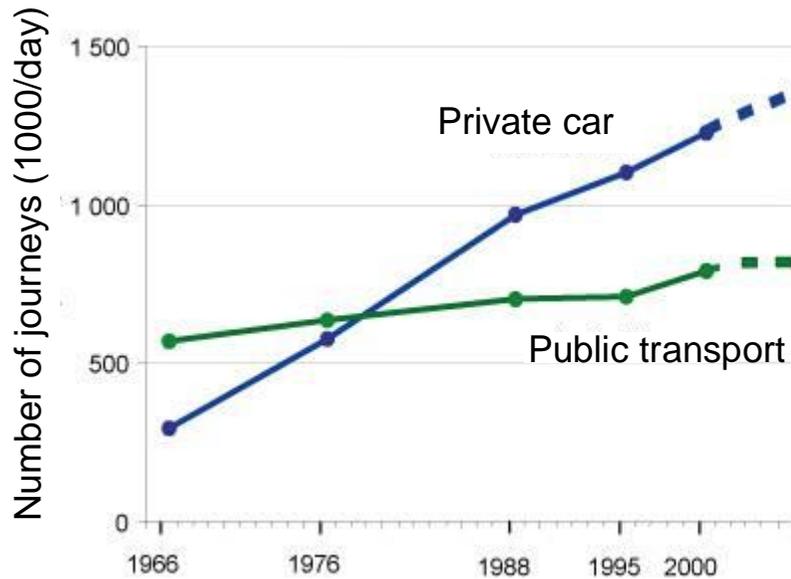
Greenhouse gas emissions in Nordic cities



Building density is low in most parts of the Helsinki Metropolitan Area



An increase of 1% in the modal share of public transport reduces greenhouse gas emissions from traffic by about 0.6%



Number and shares of journeys made by private car and public transport in the Helsinki metropolitan area from 1966 to 2005

Share of public transport 38% in 2005

Proposal for a climate vision for the Helsinki Metropolitan Area

Improved energy efficiency and the sparing use of natural resources leads to a fall in greenhouse gas emissions in the region and to improved competitiveness.

This main vision is supplemented by six sectoral visions concerning:

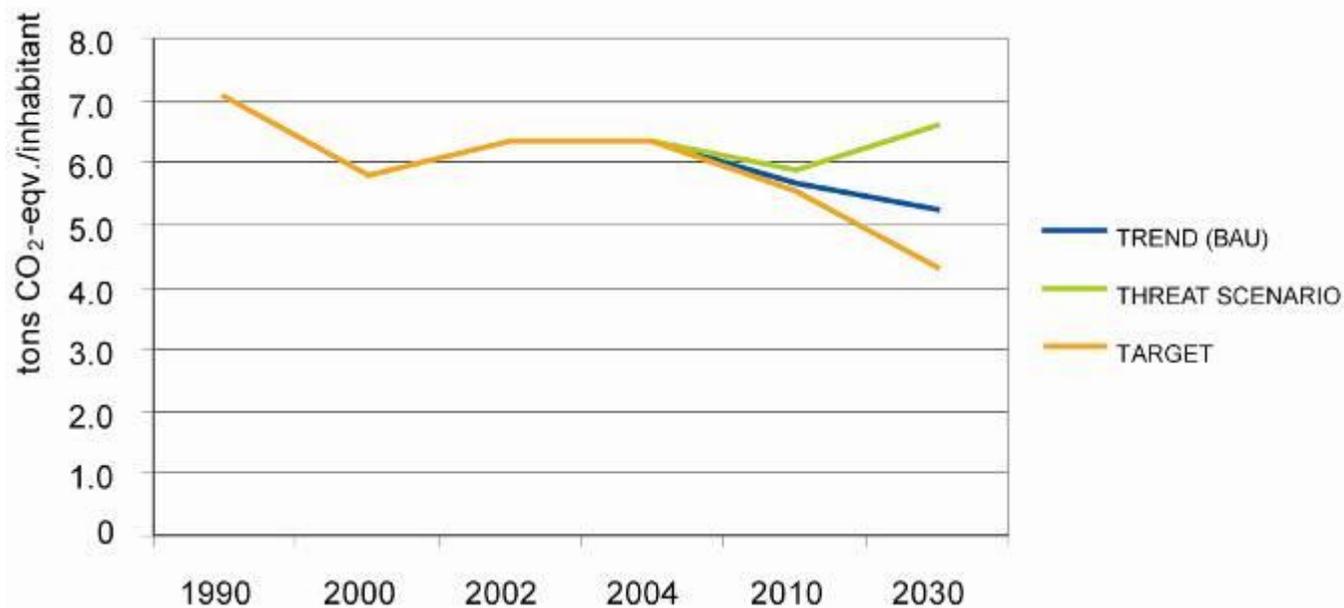
- Transport
- Land use
- Construction and buildings
- Electricity
- Energy generation
- Consumption and waste



The target and trends in greenhouse gas emissions in the Helsinki Metropolitan Area

The target is to reduce per capita energy consumption in the metropolitan area over the period 1990–2030 to minimize GHG emissions:

- from 6.3t CO₂ eqv in 2004 to 4.3t CO₂ eqv in 2030 per capita.
- by 39% over the period 1990 – 2030.



Annual greenhouse gas emissions per inhabitant

Vision and operating policies for transport

Greenhouse gas emissions from transport have fallen by at least 20 per cent. Public transport, walking and cycling are the preferred forms of mobility.

Influencing demand for transport and patterns of mobility by improving the status and service standards of public transport, walking and cycling.

- through mobility service **pricing**,

Cutting emissions from city transport operation

- through the use of **low-emission standards**

Promoting the use of low-emission vehicles through

- economic guidance **in favour of low-emission vehicles**
- **environmental zones** based on motor vehicle emissions



Reducing public transport emissions with the help of a new fuel:

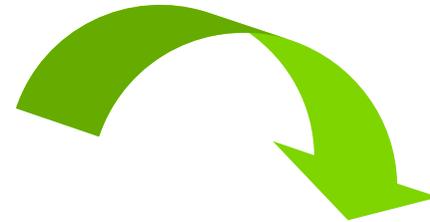
- The providers of public transport and Neste Oil have signed a letter of intent aiming at using NExBTL biofuel to power buses and waste disposal trucks.
- 300 buses will start using the fuel in August 07 and the aim is that in 2008 half of the buses will use synthetic biodiesel
- Biodiesel (100%) will reduce emissions from buses by half
- An obligation to use biofuels to be introduced in fuel distribution at the turn of the year 2007/2008.
- A tax relief from the state would encourage the use.



NExBTL-biodiesel



BTL = Bio to Liquids



The first commercial scale 2nd generation biodiesel unit
Oil refinery integrated unit will start-up in Porvoo, Finland summer 2007
Very high quality diesel fuel from vegetable oils and
animal fats

Operating policies for construction and buildings

Improving energy efficiency in new buildings

new technology pilot projects e.g. **low-energy buildings**

Improving energy efficiency in the existing buildings

new renovation technology

Guiding choices of heating and cooling systems

impact of various heating and cooling methods

improving various **financing and grant procedures**

Improving maintenance

retraining building service staff

active use of servicing logbooks

improving consumption metering to ensure that energy costs can be allocated to the end consumer

new control and guidance technology for information



A solar heated building in Viikki, Helsinki

Operating policies for electricity consumption

Improving city procurement procedures in support of higher energy efficiency

- introducing the **latest technology** for **street lighting** and illumination control systems

Improving allocation of energy costs to the consumer and associated information gathering

- enhancing and extending the scope of electricity **consumption metering**
- **ensuring energy bills** based on actual consumption

Information

- **information campaigns** and **guidelines for saving electricity**



Photo: Helsingin Energia

Operating policies for energy generating and distribution

Benefiting from the opportunities of a more compact urban structure

- optimising the benefits of **cogeneration**
- investigating the use of **district heating return flows** (e.g. low energy sites, wastewater sludge heating, cooling)
- investigating **waste heat sites and heat recovery prospects** at small (e.g. condensation heat from ice rink refrigeration) and large (e.g. wastewater treatment plants) sites
- **auditing, energy reviews and suggestion prizes**
- extending **district cooling networks** and replacing separate cooling installations in buildings



Operating policies for energy generating and distribution

- **Centralised energy generation falls wholly within the scope of increasingly strict emissions trading rules**
 - promoting **use of renewable energy sources**
 - promoting **use of clean technology** for coal and natural gas
 - **replacing** some coal and natural gas with fuels of waste origin and electric power generated from renewable energy sources
- **Promoting eco-efficiency of decentralised energy generation and increasing use of renewable energy sources**
- **Expanding the district heating network**
- **Increasing energy saving advice and research**



Vuosaari B, the largest natural gas-fired combined heat and power plant in the Nordic countries. Photo: Helsingin Energia

Possible Top 10 areas for action

- Energy consumption and GHG emissions in all the municipalities within the metropolitan area
- Public sector procurement procedures
- Replacing coal with recovered fuels and eco-electricity
- Energy efficiency at all levels
- Rail traffic and vehicle biofuels
- Heating systems of detached houses
- Information
- Motivating people to save energy
- Promoting life-cycle thinking and developing eco-areas
- Monitoring and statistics

Source: P.Lund 11/2006



Metropolitan Area in the Future

Climate Change

- › **Climate Strategy for Helsinki Metropolitan Area 2030**
- › Greenhouse gas emissions
- › How to prevent climate change

Transport System

Vision 2025

Frontpage › Metropolitan Area in the Future › Climate Change › Climate Strategy for Helsinki Metropolitan Area 2030 › Transport

Print

Vision and operating policies for transport

Greenhouse gas emissions from transport have fallen by at least 20 per cent. Public transport, walking and cycling are the preferred forms of mobility.

Operating policies and proposed measures for transport:

- a) Influencing demand for transport and patterns of mobility by improving the status and service standards of public transport, walking and cycling
- mobility service pricing, and promoting public transport, walking and cycling
 - improved safety and comfort standards and enhanced provision of real-time information in public transport
 - safe and agreeable access routes to pedestrians and cyclists
 - secure cycle parks at public transport
 - dimensioning standards for cycle parking in planning

Target of the strategy

- › [Target](#)

Visions and Operating Policies

- › [Main vision](#)
- › **[Transport](#)**
- › [Land use](#)
- › [Electricity](#)
- › [Construction and buildings](#)
- › [Consumption and waste](#)
- › [Energy generation](#)

More information:
www.ytv.fi/ENG/future/climate_change/

Preventing climate change must play a key role in city planning and decision making!