



City of Helsinki

Environmental Report I Summary 2009

www.hel.fi/ymparistoraportti



Content

Introduction	2
Review by Deputy Mayor	3
Environmental management in the City of Helsinki	4
Climate change and energy policy	5
Traffic and effects of traffic	7
Land use and construction	8
Water protection and waste management	9
Procurement, environmental education and environmental risks	10
Environmental economy	11

The environmental report of the City of Helsinki is a report compiled in co-operation with the departments that make up the organisation of the city. It seeks to describe the attainment of the environmental objectives of the City and the effects that the operations have on the environment. Information for this report, compiled and edited by the Environment Centre, has been produced by all 29 city departments and the eight public utility companies. The second chapter of the report records information about the environmental operations of the subsidiary organisations of the city's corporate group.

The environmental report and the material produced by the departments are available online in Finnish (web address on the cover). Environmental reporting is coordinated by a working group, appointed by the Mayor, with representatives from the departments that bear the most influence regarding the management of environmental effects. The City of Helsinki causes a substantial strain on the environment, but it also plays an important part in environmental protection. The city is responsible for approximately five per cent of Finnish carbon dioxide emissions. The Viikinmäki wastewater treatment plant takes care of cleaning the wastewaters of approximately 800,000 people.

This environmental report is the tenth environmental report prepared for the city as a whole. The initiative for the environmental reporting by the City was originally a motion of the City Council. This motion has become an established practice that has clearly improved the amount of environmental information available for decision makers, officials and the people of Helsinki alike and has thus contributed to better management of environmental issues. For many departments and public utility companies, environmental reporting has proved to be the first step towards environmental management, i.e. the systematic development of environmental protection work. This report contains a number of examples on the ways in which the operations of the departments have improved in environmental matters. In addition to the information presented about the sectors of environmental management and traditional environmental protection, this report contains a new chapter that addresses the good environmental practices adapted by the departments. It features real-life examples about themes such as saving energy and paper, decreasing the production of waste and ecological efficiency.

Significant improvements on environmental issues have taken place in the City organisation over the past ten years, particularly the last few years. Strengthening the climate policy has been widely featured in the headlines, but other aspects of environmental policies have not gone forgotten either.

The strategy programme for 2009–2012, adopted by the City Council in April 2009, places a strong emphasis on environmental matters. Regarding climate matters, the focus must be placed much further than a single budget plan period. The development programme of Helsingin Energia, is an excellent step in this direction, but in addition to energy production, measures are also required in other fields that influence the climate, such as construction, property maintenance, traffic and procurement. The new environmental policy of the city, presently under preparation, offers our city the opportunity to set ambitious



climate goals in the long run, and to bring together the essential means needed to attain them. In addition, the operations of the Information Centre on climate change for the metropolitan area, Ilmasto.info (Climate.info), will be initiated in 2010.

This environmental report indicates that plenty of challenges remain for Helsinki in the future in the management of the effects of traffic. Considering air quality and noise, there is a long way ahead before the statutory environmental goals will be accomplished and the decision made by the City Board on environmental zones, adopted in the summer, remains insufficient in reaching these goals. Further measures are needed in order to increase such things as public transport's share as a mode of travel. The introduction of congestion charges is a noteworthy alternative as an element in decreasing the environmental effects of traffic.

The Baltic Sea Challenge, initiated by the Mayors of Helsinki and Turku, was successful in 2009. Approximately 170 organisations have already accepted the challenge and the next step will be to extend the challenge to cover the entire Baltic Sea region. The Baltic Sea was also the theme of the Environmental Award contest organised by the City last spring. I selected IHA-Lines Ltd as the winner of the contest, a company that is a great example of the ways in which the EcoCompass co-operation between a business and the city can help both parties to develop such environmentally friendly oper-

ations that can also be applied in other companies and cities.

The City Council has determined in the strategic programme, that the city must keep one step ahead in matters of environmental protection. The pathfinder status cannot be achieved in an instant; instead, commitment is required from decision makers and officials across the various sectors. In addition to commitment, the qualities required include the skills and courage to seize the solutions that are beneficial to the environment, even if they mean that financial and mental investments are needed in the short-term.

The City of Helsinki has continued to invest more in environmental matters, financial contributions included. The environmental expenses of the city have grown steadily over the past few years, totalling €120 million in 2009. Environmental investments were also on the increase, reaching €47 million last year. Investments in environmental protection are, indeed, the wisest of policies now and in the near future. If nothing is done now, there will be manifold expenses for the city and future generations. This is ensured by the steering methods of environmental economy that continue to increase inevitably and the soaring prices of the increasingly scarce non-renewable resources.

Helsinki will become the best home city in the planet. Environmental protection is an essential part of this goal.

Pekka Sauri
Deputy Mayor

Environmental management in the City of Helsinki

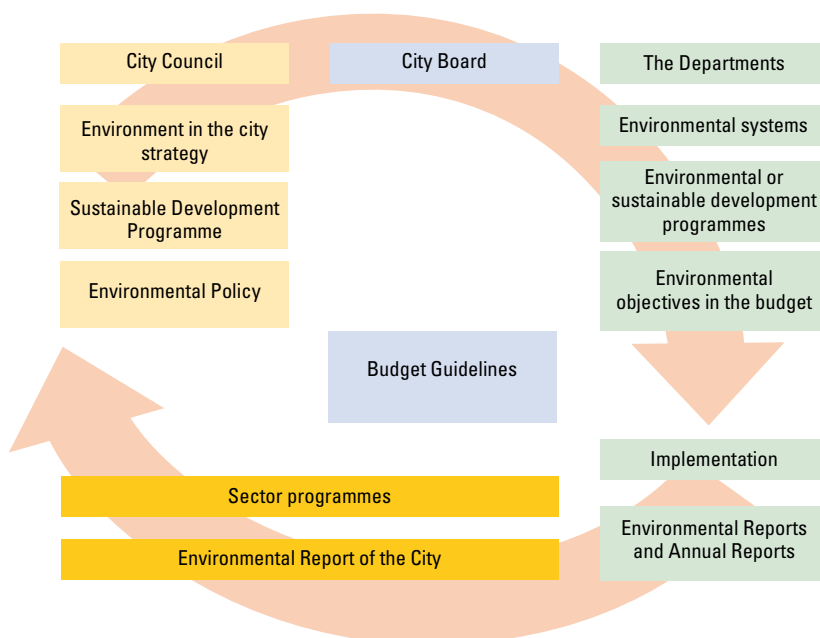
The values of the City of Helsinki are resident orientation, ecological approach, fairness, economy, safety and enterprise-friendliness. The ethical principles of the strategy programme for 2009–2012 state that “Helsinki is a forerunner in global responsibility issues. This will be expressed in actions to reduce Helsinki’s climate impacts as well as in environmental protection and procurement policies.” The strategic programme includes several definitions on environmental issues, regarding the protection of the Baltic Sea, climate change mitigation measures, energy efficiency, promotion of public transport, environmental issues in procurement and nature protection.

Preparations for the revision of the City’s environmental policy were initiated in 2009. The focus within the City’s environmental management operations has gradually shifted towards the departments, as there no longer is a comprehensive environmental programme for the city. The environmental management and programme activities of the departments have continued to pick up in 2009.

The city has, over the past few years, prepared programmes for a number of sectors in the field of environmental protection, all contributing to the environmental management issues of the City. The City’s expert working group on environmental management has continued to carry out training sessions on environmental management for the departments. In order to support this work, a brief handbook on environmental management for the City of Helsinki was prepared. The guide contains practical tips and advice on the promotion of environmental management in departments.

The City budget for 2009 included eight goals connected to environmental issues, six of which were achieved. These goals pertained to nitrogen and phosphorus loads of refined wastewaters, concentrations of street dust, determining the climate effects of the operations of the Public Works Department, implementation of the energy efficiency contract, the execution plan of the climate strategy and the

Environmental management in the City of Helsinki



share of public transport as a mode of transport in routes heading to the city centre as well as in transverse traffic. Of these, the goals pertaining to the execution plan of the climate strategy and the share of public transport in the traffic headed to the city centre were not quite achieved.

The level of environmental management in the departments varies. ISO 14001 standards have been granted for the environmental systems in use at the Port of Helsinki and the power plants, heating centres and district heating operations of Helsingin Energia. Environmental systems that are yet to be certified are in use in four departments and there are programmes focusing on the environment or sustainable development in use in eight departments. Environmental programme preparation work is ongoing in five departments.

The eco-support activity of the City promotes taking environmental issues into account at the workplace. Almost 700 eco-supporters have been trained and appointed for work communities; with the task of providing support and motivation for their colleagues in environmental work. The basic training involves providing the eco-supporters

with information about environmental matters, decreasing the environmental load, acquiring new operational methods and the ways to make a difference. The objective is to adopt the eco-support activity as a natural part for the planning and assessment of work community activities. The annual report is used to assess and develop the activity and its influence. Commitment by the organisation to promote environmental responsibility and managerial support are prerequisites for the eco-support activity. With the help of this activity, the environmental policies of the city can be introduced as measures and practices at the grass root level. In 2010, the eco-support activity will be taken into use and developed in eight municipalities in Finland and three in Estonia according to the model of Helsinki.

Systematic environmental management work was carried out in only some of the city’s subsidiary organisations, but supervisory information connected to environmental issues was collected by a substantially larger number of companies. There were few resources available for the development of environmental management in the subsidiary organisations for now.

The records of the Kaisaniemi meteorological station indicate that 2009 was clearly colder than the record-warm year of 2008. However, at 6.2 degrees, the average temperature of 2009, remains around 0.6 degrees above the average temperature of the period of comparison, 1971–2000. According to the Intergovernmental Panel on Climate Change, the IPCC, the industrialised countries should decrease their emissions by 25–40 per cent, at a minimum, by 2020 and 80–95 per cent by 2050, in order to accomplish the two-degree goal that has been set.

In early 2009, Helsinki became a signatory of the Covenant of Mayors, which aims at decreasing the greenhouse gas emissions to a more significant level than the goals set by the EU. The Covenant has been signed by more than 1,300 cities and regions. According to the agreement, an action plan for sustainable energy solutions, recording the methods for the improvement of the energy efficiency in the entire city by 20 per cent before 2020, shall be prepared during 2010.

The Helsingin Energia energy company prepared a development programme, with the objective of decreasing emissions and increasing the use of renewable energy, entitled "Helen 2020+", the development pro-

gramme towards carbon neutral future", of which a decision will be made by the City Council during 2010.

The single most important measure of the energy efficiency agreement, signed by the City of Helsinki and the ministry of employment and the economy, the action plan for 2008–2016, was adopted by the City Board on 15/6/2009. Its goal is calculated energy savings of nine per cent to be achieved by 2016 in the service and residential properties owned by the city. In 2009, the specific consumption of heating in the properties owned by the city decreased by 1.5 per cent and the specific consumption of electricity by 4.3 per cent.

The 2008 carbon footprints of the City of Helsinki's Environment Centre and the Public Works Department were assessed. Measuring the most essential operations for the climate in departments was assessed with the help of the calculation. In addition the applicability of the results for environmental management and eco support operations were assessed. The footprint of both agencies was substantially smaller than that of an average Finnish office.

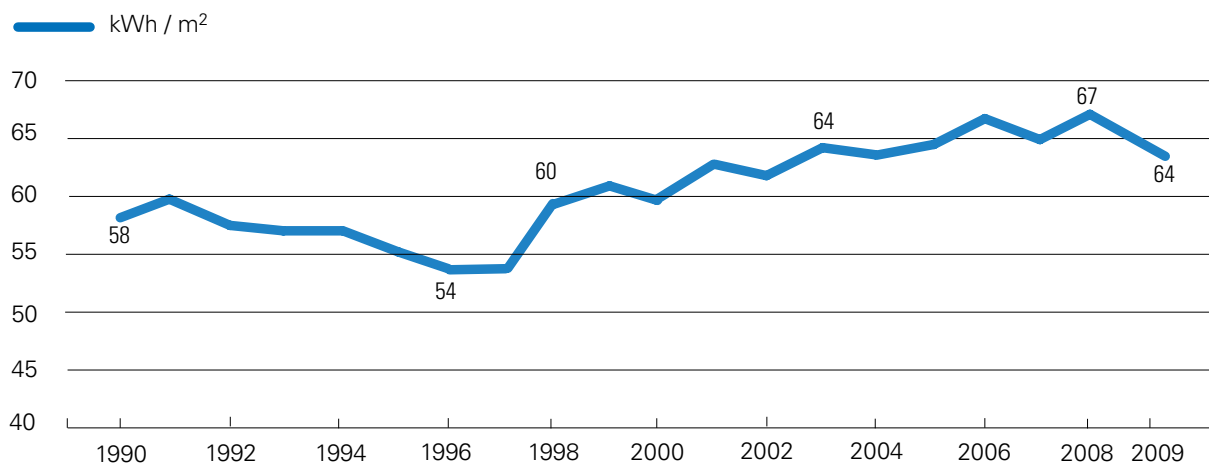
As a result of the cold temperatures in the year, the consumption of district heating in Helsinki was approximately 10 per cent higher compared

to the previous year, and the amount of district heating sold in the distribution area totalled 6,775 GWh. District cooling continued to increase in the Helsinki region. Sales of district cooling totalled 57 GWh, with a 20 GWh increase from the previous year. The total consumption of electricity in Helsinki was 4,654 GWh (4,528 GWh in the previous year). Despite the economic recession, consumption increased by nearly three per cent. The consumption, per capita, was around 8,000 kWh.

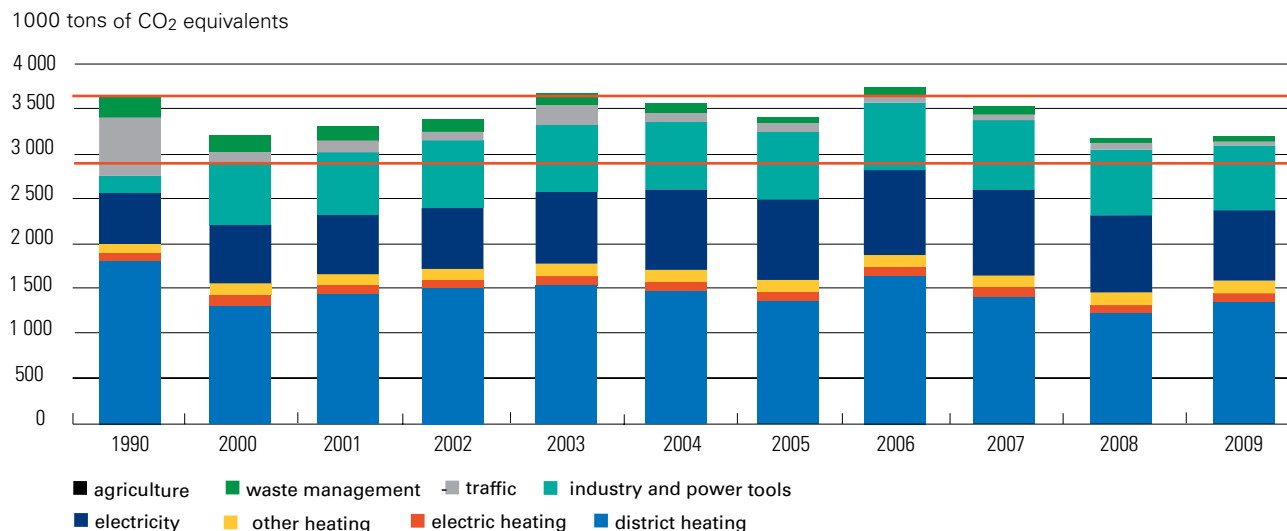
The total emission level of greenhouse gases in Helsinki increased slightly in 2009, but they still remained at a level that is 13 per cent lower than in 1990. The favourable development reflected in the decreased emissions derives partly from the downfall in the demand of electricity due to the recession. This has resulted in a decrease in the condensed production of electricity, which generates massive emissions, and thus a decrease in the emissions of energy production. The increase in the use of natural gas – replacing coal – has also had a significant influence on the decrease of emissions in Helsinki.

The graph of the total emissions of greenhouse gases indicates the emission goal of the action plan for sustainable development of the City of Hel-

Specific consumption of electricity in properties owned by the city



Total emissions of greenhouse gases based on consumption in 1990–2009.



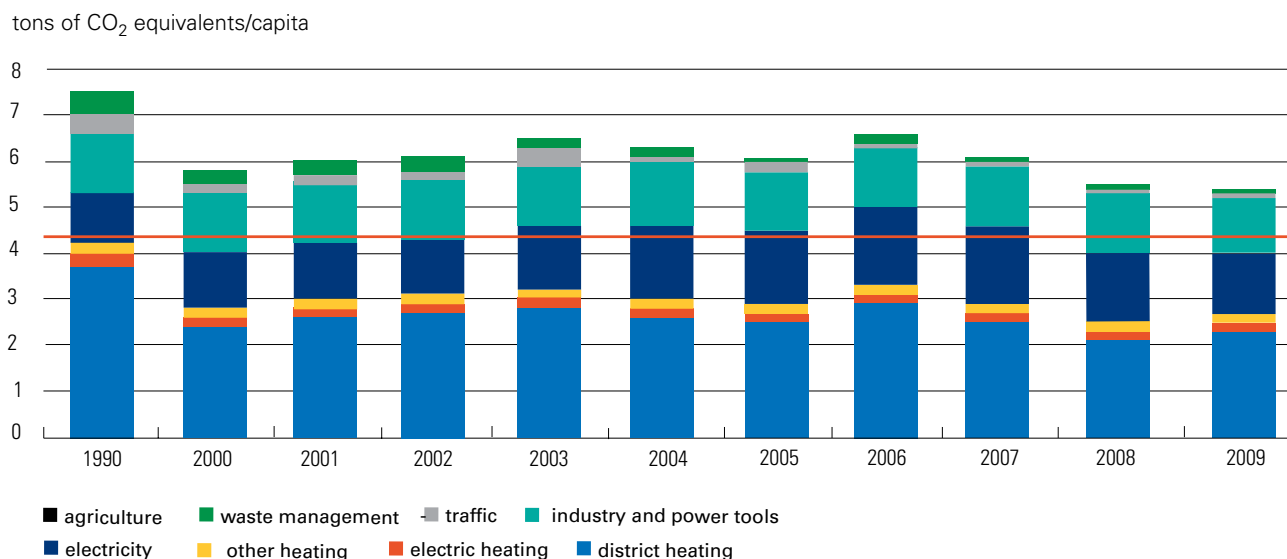
sinki, i.e., to achieve, by 2010, emission levels that remain below those of 1990, and the emission goal of the energy policy definitions of the City of Helsinki, i.e. a 20 per cent decrease in emission from the 1990 level by 2020. The method of calculation used is the advantage distribution method of the climate strategy in use in the metropolitan area. The graph of the amount of greenhouse gas emissions per capita indicates the emission goal recorded in the climate strategy of the metropolitan area, i.e.

4.3 metric tonnes CO₂-eqv. per capita by 2030.

The proportion of renewable energy in the electricity, district heating and cooling acquisitions by Helsingin Energia decreased to the level of five per cent in 2009 from the 6.2 per cent in the previous year. This decrease was mainly due to the situation of hydroelectric power, which was clearly poorer than in the previous year. Three per cent of district heating and seven per cent of electricity procured were based on renewable energy sources in 2009.

Helsingin Energia began to prepare for the establishment of two wind farms of substantial size (500–1,000 MW) in the Gulf of Finland and the Bothnian Bay by the Suomen Merituuli Ltd, founded in co-operation with EPV Energia. The environmental impact assessment processes regarding the possibilities of establishing wind farms in the open sea areas in the Inkoo–Raasepori area and Siipyy, in Kristinankaupunki, in locations indicated by the provincial land use plans were carried out in 2009.

The amount of greenhouse gas emissions based on consumption per capita in 1990–2009.



The number of vehicles registered in Helsinki grew by two per cent in 2009 from the previous year. In 2009, traffic in Helsinki continued to decrease from the level of 2008, due to the recession, among other reasons. Traffic amounts in the main road network decreased by an average of one per cent in comparison to the previous year. For the previous time, this kind of decrease was experienced in the years of the recession of 1990–1993. The number of public transport journeys within the city totalled 227.6 million, which tops the previous year's number by three million. The goal set by the City Council is to increase the share of public transport as a transport mode in transverse traffic by, at least, four percentage points from the 2004 level by the year 2012, which means that the share should total 17 per cent. The goal for 2009 was to increase the share to 13 per cent. In 2009, the share of transverse public transport, measured in a similar fashion, was 15.8 per cent, i.e. 0.8 percentage points higher than in the year before.

The Helsinki City Transport (HKL) began testing hybrid buses in the spring of 2009. The Helsinki Region Transport (HSL) will continue the test project in co-operation with various manufacturers of vehicles. In hybrid buses, the braking energy is transformed into electrical energy, which generates the moving force for the bus for its next acceleration. The emission, noise and energy consumption levels of hybrid buses are lower in comparison to ordinary buses. Helsingin Energia opened Finland's first street charging station for electric cars in Kamppi in Helsinki.

The construction project of the West Metro began with excavation work in Ruoholahti in 2009.

The air quality levels of 2009 were slightly better than average. Just like in previous years, the limit values for nitrogen dioxide were exceeded in the Helsinki city centre. Most of them are derived from traffic emissions and heavy traffic accounts for a significant share. The concentrations of fine particles were lower than in the previous years, and the limit values were not

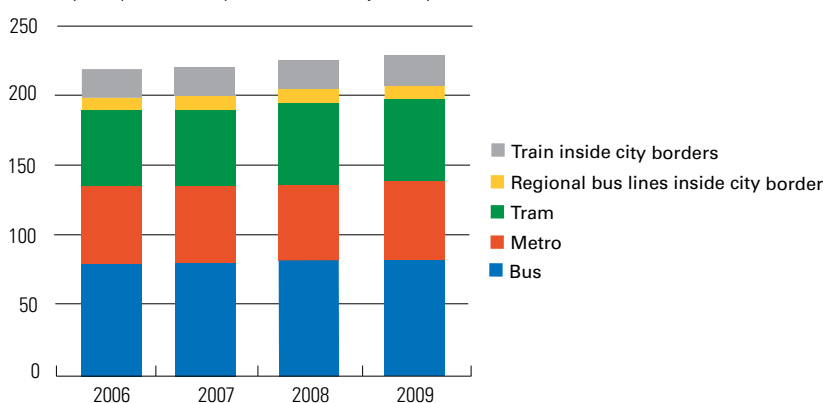
exceeded in any YTV (nowadays, HSY) measuring stations. The winter was exceptionally warm and with very little snow, which facilitated the clearing of streets and the amounts of sand used were partly lower than during an average winter. Fine particles were carried into the metropolitan region long-distance, particularly in the spring.

The Public Works Committee made the decision on the principles of using noise reductive surfaces in Helsinki on 13 August 2009. The Public Works Department sets out to use noise reductive surfaces in the road construction sites at which the number of people

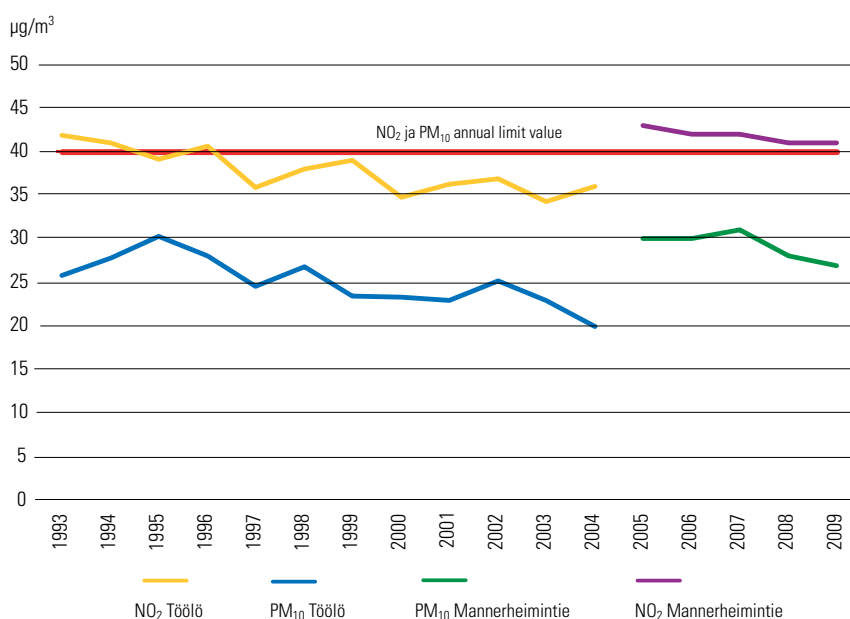
exposed to noise and the traffic circumstances are such that it can be considered reasonable to use reductive surface materials. The surface materials, which contain smaller grains than the alternatives used normally, were used at the following sites: Lönnrotinkatu Street (Albertinkatu–Hietalahdenkatu Streets), Mäkitorpantie Street (Panuntie–Satulasepätie Streets), Kontulankaari Street (Kontulantie–Kivikonkaari Streets), Abrahaminkatu Street and Hietalahdenkatu Street (Lönnrotinkatu–Hietalahdenranta Streets).

Number of passengers in Helsinki's internal public traffic.

Journeys of public transport (millions of journeys)



The annual average amount of inhalable particles (PM₁₀) and nitrogen dioxide (NO₂) at the Töölö and Mannerheimintie measuring stations, compared to the annual limit value (40 µg/m³) (Source: HSY).



New neighbourhoods are being built in the former harbour areas in the immediate proximity of the city centre. Urban development is densely constructed, saving energy and the environment, utilising the existing infrastructure solutions and shortening the citizens' commutes and journeys taken to run errands.

The Kalasatama neighbourhood will offer homes for approximately 18,000 Helsinki residents and around 10,000 work places by the early 2030s. The cleaning of contaminated soil began in the Sörnäistenniemi area and the former gas power plant of Suvilahdi in 2009. Building of municipal infrastructure began in 2009 and the construction of housing will be initiated in 2010. Many different kinds of housing forms will be built in the Kalasatama neighbourhood, possibly including "floating" houses, placed on top of pontoons just offshore. Helsingin Energia, ABB and Nokia Siemens Networks are working on a project that develops intelligent energy systems, with the goal of establishing a model area of international importance in the Kalasatama neighbourhood, utilising an intelligent electricity network. The project includes the creation of state-of-the-art solutions in energy, information and communications technology by combining an energy system and services that are up-to-date regarding sustainable development. The waste generated in the Kalasatama neighbourhood will be transferred using an underground pipe system to a waste treatment plant, where the containers will be emptied.

The Jätkäsaari neighbourhood will be constructed to serve as a residential area where jobs will also be accommodated. Business facilities will be placed on the street level and the densely built area will enable having all commercial services within a walking distance. As car parks, air raid shelters, street maintenance facilities and the waste treatment plant are placed in the resources inside a cliff formation, full benefit will be obtained in the land use of valuable city centre areas. Waste will be collected using the pipe transfer system also in the Jätkäsaari neighbourhood.



Regarding environmental protection measures, the Itäniitty dale (8 hectares) in Jollas and Roosinmäki (5 hectares) in Heikinlaakso were placed under protection by the Uusimaa Environment Centre (nowadays Uusimaa Centre for Economic Development, Transport and the Environment) that also adopted the plans for their management and use. In addition, the Environmental Committee submitted a motion to the City Board on the extension of the Mustavuori-Porvarinlahti protected area and establishing a new protected area in the south shore of the Porvarinlahti bay and plans on their management and use and the plans on the management and use of the Särkkäniemi area in Uutela.

The Public Works Department has worked for several years on the promotion of the low-energy construction concept in building public facilities. The general instructions on low-energy constructions, pertaining to the service buildings of the City of Helsinki, were completed in 2009. A report on the island of Harakka, home to a nature school among other features, was prepared in 2009 on transforming the island into a carbon neutral area.

The building of the first actual low energy residential site by the Housing Production Department was initiated in Viikinmäki. Energy savings will be achieved at this site with solid properties of heat insulation and air tightness and efficient recovery of heat. District heating will be used as the source of heating. This option was

chosen due to its emission values, which were clearly indicated as the smallest on the grounds of the comparative calculations carried out. The energy consumption of the buildings will be halved in comparison to the residential buildings that comply with the current norms.

The planning of small-scale district heating for the new low energy neighbourhood of Honkasuo has been initiated. In the future, this solution may enable the extension of the ecologically efficient district heating network to reach the fringe areas of the city.

In connection to energy audits, 50 properties were granted new or updated 'Display' energy certificates and, by the end of the year, a total 1,100 certificates had been given to a total of 280 properties owned by the city.

Over 280,000 metric tonnes of contaminated soil was shipped for treatment or final disposal. The revised legislation emphasises repair solutions based on risk assessment and soils are indeed increasingly cleaned – instead of digging – by sealing off contaminated soil under an insulation layer or insulating construction that is 0.5 to 1 metre thick. Utilisation of contaminated soil mass in excavation sites, in particular in the proximity of the excavation spot, has increased. The renovation project of the former landfill in Myllypuro was initiated in 2003 and completed in 2009 with an insulation layer being placed on top of the cone-shaped waste mass.



The treatment results for phosphorous, which were achieved at the Viikinmäki water treatment plant, were good – and for nitrogen they reached an all-time record level in 2009. As in the previous years, the overall treatment results remained at a very good level. Furthermore, no eutrophication impact due to wastewater could be detected in the unloading area according to the water system monitoring. The nutrient emissions channelled to the sea were decreased in comparison to the previous year and were 22,000

kg/a for phosphorous and 403,000 kg/a for nitrogen.

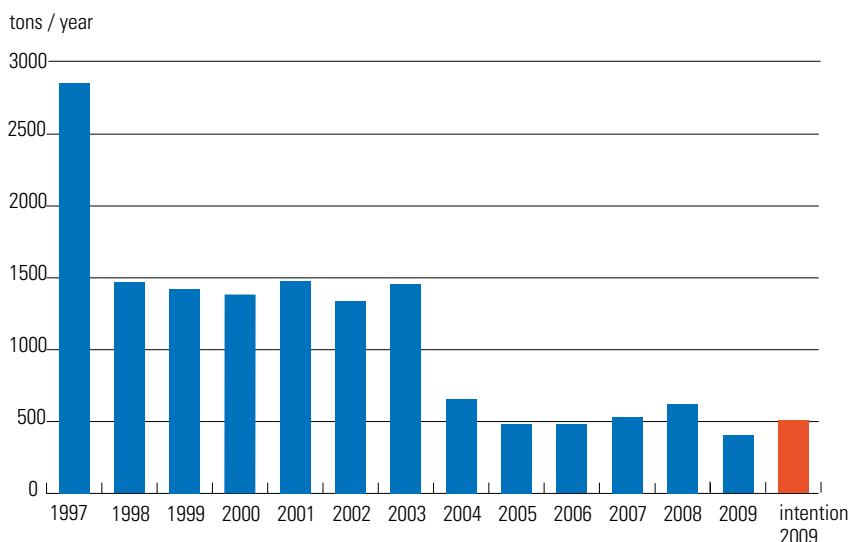
A serious water pipe fracture occurred on Kaivokatu Street, in front of the Railway station, in November, resulting in water being spilled onto the underground facilities of the railway station and the connected metro station. Even though the break was quickly isolated, there was substantial damage and the metro station had to be closed for approximately three months. The damages of the pipe fracture totalled five million euros, along with other indirect impacts.

The Baltic Sea Challenge, initiated by the Mayors of Helsinki and Turku in the summer of 2007, has continued to succeed. The actions taken by the cities themselves keep advancing and, by the end of 2009, in addition to the 165 Finnish parties, 15 international operators have accepted the challenge: cities from countries around the Baltic Sea and international shipping companies.

Reception of wastewaters from vessels increased in the Harbours in Helsinki. The amount of wastewaters pumped out of the international cruise ships to Helsinki's sewage system grew 42 per cent from the previous year. Of the 264 cruisers that visited Helsinki during the summer, 53 per cent left their wastewaters in Helsinki's harbours. All quays of the Port of Helsinki are equipped with wastewater sewers and reception points, but the legislation still provides that vessels can clear wastewaters into the sea when 12 nautical miles from the shore. Reception of vessels' wastewaters without separate fee, belongs to the Port of Helsinki's measures taken as a part of the Mayor's Baltic Sea Challenge. The harbours in Helsinki and Stockholm are the only ports on the Baltic Sea that offer all the vessels the opportunity to deposit their wastewaters onto the sewage system of the port.

The total amount of waste and soil received in the Ämmässuo waste treatment centre reached 703,477 metric tonnes, of which 252,865 tonnes was solid waste, totalling over 13,000 tonnes less than in the previous year. The decrease in solid waste was mainly due to a part of the solid waste generated in the area formerly known as the YTV area (today, the HSY area) being directed for treatment and final placement outside the area. The number of customers at the Sortti stations, accepting small amounts of domestic waste, continued to grow. The number of visits totalled 273,268, which is an increase of eight per cent from the previous year.

Nitrogen loads channelled to the sea from the Viikinmäki treatment plant



The Procurement Centre has started to follow the principle, according to which all procurements made for more than one department are checked in order to make environmentally sound choices possible. In practice, this means that the environmental expert of the Procurement Centre reviews all the so called shared purchases and discusses with the responsible purchaser about their environmental criteria. This new practice increased the requirements related to the environment in the public tender procedure by the Procurement Centre. Of the total tendering volume of the Procurement Centre, 19 per cent contained environmental criteria.

Use of paper by the City of Helsinki continued to decrease in 2009. The consumption totalled 2,755 sheets per employee, which equals a decrease of over five per cent from the previous year. Several electronic data systems that save paper have been introduced over the past few years.

Transferring to the shared case management system, the Ahjo, makes it possible to adopt an electronic meeting procedure and systems. The members of the City Council and the City Board, and the members of the Auditing Committee were provided with laptop computers and 3G Internet connections and, in the next couple of years all members of committees and the management groups that do not have these yet will be provided with similar equipment. As a result, all elected officials will be able to read all the necessary documents in electronic form. With the introduction of Ahjo, the meetings of the bodies will be held in an electronic form and paper is no longer needed in the meetings. The number of copies taken for the City Board and the City Council totalled 11 million copies in 2009 and the annual printing expenses go as high as €300,000.

The environmental education events organised by the City gathered a total audience of 32,565 people, i.e. 5.6 per cent of the residents of Helsinki. This number is slightly higher than in 2008. The events included the Pääsiäissaari (Easter Island) event in Korkeasaari Zoo, the nature schools

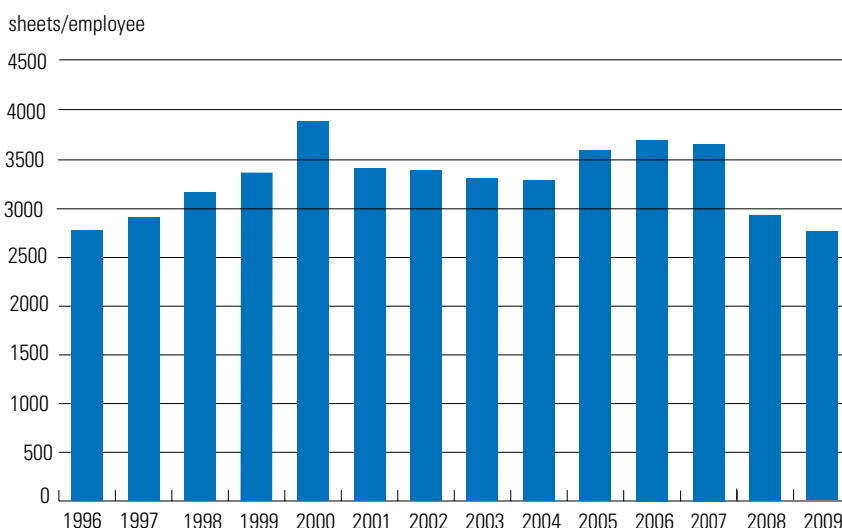


and courses organised by the Harakka Island, Gardenia and the Youth Department, the "Setä Sininen" (Uncle Blue) activities by HKL, the walks in the park organised by the Public Works Department and the Energy Saving Committee's energy for second graders campaign.

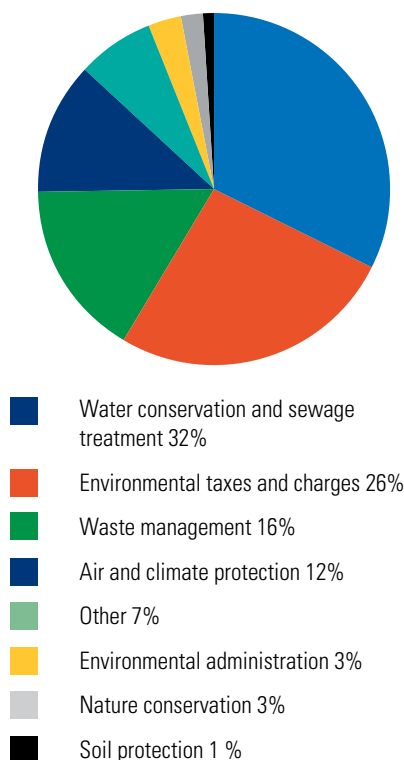
Preparation of the strategy for adaptation for climate change, carried out in co-operation in the entire metropolitan area, was initiated in the autumn of 2009. The strategy should be completed by 2011. As a part of the project, scenarios for the climate, sea levels and river floods were com-

pleted for the metropolitan area, with the objective of assessing the consequences of climate change. For heavy rains and sewer floods, two separate systems of alarm are aimed at providing predictions based on time and location. As a part of the flooding prevention measures, the Public Works Department has continued building floodwater banks in the areas that are prone to flooding. This project is guided by the preliminary survey that records, by city district, the flood risk locations and will be the starting point for the follow-up and execution of the measures in the risk locations.

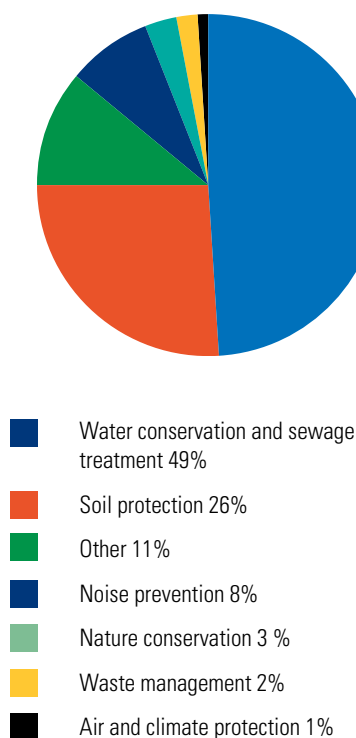
Paper use by the employees of the City



Breakdown of Environmental costs



Breakdown of Environmental investments



Helsinki's environmental costs, based on the sums submitted by the departments and public utility companies, were a total of €120.2 million in 2009, totalling 3.0 per cent of the city's operational costs. The most significant costs were the taxes on electricity and fuels, levied on an environmental basis and the costs caused by the treatment of wastewaters. Environmental costs increased by 13.0 per cent from the previous year. Environmental costs and taxes connected to the air protection and climate policies and waste management increased the most.

The environmental income reported by the departments totalled €62.7 million in 2009, equalling 3.9 per cent

of the City's all operational income. There was a slight increase in the environmental income. The most significant income came from wastewater payments (84% of all the environmental income).

City of Helsinki's environmental investments totalled €46.9 million in 2009 according to the declarations by the departments. The sewage network extension and renovation project and the treatment of contaminated soil remained the most important investments.

Obligatory provisions have been made in financial statements (worth of €21.0 million) for the restoration of the former landfill in Myllypuro and re-introducing the area of the A power plant in Hanasaari for use.

Environmental economy indicators (1000 euros)

Environmental economy indicators (1000 euros)	2009	2008
Environmental income	62 701	55
Air protection	97	192
Water conservation & sewage treatment	53 023	51 944
Waste management	6 169	5 775
Soil protection	84	493
Nature conservation	31	0
Other		
Environmental administration	392	185
Environmental management	239	111
Environmental education	2 414	2 065
Activity to improve eco-efficiency	252	490
Environmental income, euros/resident	107	107
Share of the city's operational income	3.9 %	3.8 %
Environmental costs	120 174	1
Air protection	14 260	12 845
Water conservation & sewage treatment	38 667	38 042
Waste management	19 052	15 049
Soil protection	1 539	1 813
Noise prevention	363	364
Nature conservation	2 886	2 555
Environmental taxes and charges	31 072	24 042
Environmental administration	3 933	4 131
Other		
Environmental education	4 797	4 133
Environmental management	2 096	2 392
Activity to improve eco-efficiency	1 509	1 060
Environmental costs, euros/resident	206	186
Share of the city's operational costs	3.0 %	2.8 %
Environmental investments	46 948	71
Air protection	231	294
Water conservation & sewage treatment	22 858	20 415
Waste management	1 082	374
Soil protection	12 364	10 188
Noise prevention	3 534	772
Nature conservation	1 486	1 417
Other	5 393	4 411
Environmental investments, euros/resident	80	66
Share of the city's total investments	7.4 %	5.0 %

INDICATORS FOR THE ENVIRONMENTAL REPORTS

Indicator	Goal	2004-2008 av.	2009	Trend	Prognosis
LAND USE					
Share of district heating in building stock (%)	Share of district heating will increase (The energy policy definitions of the City of Helsinki EPOS)	85,5	85,7	😊	😊
Share of passengers in public transport in the Metropolitan area (%)	Is increasing considerably by 2012 (Strategy programme)	28,0 (2000)	26,5 (2008)	😞	😞
ENERGY					
Total energy consumption in Helsinki (GWh)	Total consumption of energy is decreasing by 2020 (National climate and energy strategy)	14181	14710	😞	?
Consumption of heat in new residential buildings using district heating (kWh/m ³)	-30 % by 2010, -50 % by 2012 (national building regulations)	40,6	36	😊	😊
Consumption of electricity in properties owned by the city (kWh/m ²)	Saving -9 % by 2016 (The energy efficient agreement KETS)	65,2	63,9	😊	?
Consumption of heat in properties owned by the city (kWh/m ²)	Saving -9 % by 2016 (KETS)	155,3	153,2	😊	?
Energy audits in residential buildings owned by the city (%)	80 % by 2013 (KETS)		65	😊	?
Energy audits in service buildings owned by the city (%)	80 % by 2010 (KETS)	76,8	80	😊	😊
AIR					
Yearly average for nitrogen dioxide (µg/m ³)	less than 40 µg/m ³ by 2010 (EU-directive)	42,0	41,3	😊	😞
Amount of days when the limit level of inhalable particles is exceeding in Helsinki (days/a)	max 35 days by 2010 (EU-directive)	38,5	30	😊	?
CLIMATE					
Consumption based greenhouse gas emissions in Helsinki (1000 t CO ₂ -ekv.)	1990 level by 2010 and -20 % by 2020 (EPOS)	3477	3188	😊	😊
Share of renewable energy sources in Helsingin Energia's acquisition of electricity, district heating and district cooling (%)	20 % by 2020 (EPOS)	4,3	5,0	😊	?
TRAFFIC					
Carbon dioxide emissions of Helsinki road traffic (1000 t CO ₂)	-16 % by 2020 (national climate strategy), -20 % by 2030 (Metropolitan area climate strategy)	557	524	😊	?
Carbon dioxide emissions of public transport (g/km)	Emissions are decreasing (EPOS)	62,0	62,2	😞	😊
Carbon dioxide emissions of first registered cars in Helsinki (g CO ₂ /km)	130 g/km by 2015, 95 g/km by 2020 (EU-goals)	178	158	😊	?
Share of public transport passengers in transverse traffic in Helsinki (%)	20 % by 2011 (KSV binding operative goal for 2011)	16,2	18,7	😊	😊
Share of public transport passengers in cape border heading to the centre at 6-9 on workdays in October (%)	Share of public transport 73 % at 6-9 in cape border heading the centre by 2012 (KSV strategic goal for 2012)	70,6	71,6	😊	😊
Mode of travel distribution by residents walking+cycling+public transport (%)	+3 % walking+cycling+public transport by 2012 (Strategy programme)	68,0 (2000)	69,2 (2008)	😊	?
Cyclists crossing the calculation lines in June (cyclists/day)	Doubles by 2015 (city council goal)/share of cycling 15 % by 2020 (Brussels agreement)	20850	25350	😊	😞
Share of cycling by the mode of travel (%)	Doubles by 2015 (city council goal)/share of cycling 15 % by 2020 (Brussels agreement)	7,3 (2000)	6,7 (2008)	😞	😞
NOISE					
Building noise barriers to protect new residential areas	New residential areas are protected from the noise (Action plan for noise abatement)			😊	😊
Building noise barriers to protect current use of land	Building the new noise barriers presented in the action plan for noise abatement (Action plan for noise abatement)			😊	😞
Use of noise reductive road surfaces	Increasing the use of noise reductive road surfaces (Action plan for noise abatement)			😊	😊
WATER					
Nitrogen loads channelled to the sea from the wastewater treatment plant in Helsinki (t/a)	N under 500 t/a 2009-2011 (Budget goal)	552	404	😊	😊
Phosphorus loads channelled to the sea from the wastewater treatment plant in Helsinki (t/a)	P under 30 t/a 2009-2011 (Budget goal)	27	22	😊	😊
WASTE					
Material recycling of household wastes in the Metropolitan area (%)	50 % is recycled as material by 2016 (National waste plan 2008)	47,8 (2004-2006)	48,7 (2007)	😊	😊
Amount of household wastes in the Metropolitan area (kg/capita)	Total amount of wastes in decreasing (National waste plan 2008)	323 (2004-2006)	337 (2007)	😞	?
Utilization of landfill gas in HSY's waste treatment plant (%)	Increasing to 95 % by 2011 (HSY operative goal)	46	53	😊	?
ENVIRONMENTAL RESPONSIBILITY					
Consumption of sheets of copy paper in city departments (A4 sheets/employee/a)	Consumption is decreasing (goal for preventing the generation of waste in sustainable development programme)	3410	2755	😊	😊
Share of environmental criteria in centralised procurements made by the city (%)	25 % by 2010, 50 % by 2015 (Government guidelines)	22	19	😞	?
The trend tells the last years situation in comparison with five preceding years average					
Prognosis is an expert estimation how the goal will come true.					
Indicators highlighted with this colour are joint indicators for the six cities (Helsinki, Espoo, Vantaa, Turku, Tampere, Oulu)					



SUMMARY OF THE CITY OF HELSINKI ENVIRONMENTAL REPORT 2009

Publication of the City of Helsinki Administration Centre

Contact information

Markus Lukin, telephone +358 9 310 31606

Johanna af Hällström, telephone +358 9 310 32044

City of Helsinki Environment Centre

e-mail: ymparistoraportti@hel.fi

Keywords: environmental reporting, environmental management, environmental economy

Layout: Raoul Charpentier

Pictures: Comma Image Oy, Mari Hohtari, Mika Lappalainen

Year of publication 2010

Print run 400 copies

Print house Painotalo Auranen Oy

ISSN 1796-475X

ISBN 978-952-223-787-3

