



2020
CIVITAS
Cleaner and better transport in cities

ECCENTRIC



Sustainable mobility solutions in Turku



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Citizen and stakeholder involvement in mobility planning and new mobility services

Summer 2019



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- Tools for participatory planning
- Smart intermodal solutions for public transport planning
- Park and ride plan

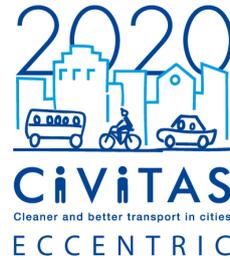
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

Organisations involved: [Regional Council of Southwest Finland](#)

[City of Turku](#)

[Turku University of Applied Sciences](#)



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What is the solution?

New planning approaches will be developed in this measure and possibilities brought by new technologies and social networks will be tested for interactive and participatory planning. Turku will test and utilise the developed cooperation model and new technologies to enhance smart intermodal solutions in public transport planning, particularly park and ride, in the Turku region. In addition, a mobility barometer will be developed to increase the knowledge of citizens' satisfaction with sustainable mobility infrastructure and mobility services.

How does it work?

A detailed report on interactive and participatory planning has been authored describing new ways and methods to carry out participatory and interactive planning processes. The 'mobility barometer' survey was carried out from March to May 2017. The survey asked for feedback about the region's transport system targets and goals. It was an online survey which the region's citizens were invited to take. More than 3,500 responses were received that have now been analysed.

The planning phase for park and ride scheme has begun and was finalised in spring 2018. A consultant has been contracted to support the identification of the region's Park and ride demand and to develop a concept for planning and implementation. The planning process of the scheme includes new participatory methods, such as a map survey on the potential parking spaces, a workshop for stakeholders, interactive steering group meetings, and negotiations with representatives for trade. In addition, an online collaboration tool has been used for internal and external meetings.

Expected results

Participatory planning as such has not become firmly established in local and regional planning yet, and in order to do so, planning culture needs to change. This is a complex process requiring time. Integrating participatory methods into project/policy-based transport planning can be a way to change the planning culture little by little. Alongside the project, the Regional Council of Southwest Finland will publish a new website and an online presentation to highlight the importance of participatory mobility planning to decision-makers and other stakeholders.

When planning to use participatory methods in a process, it is of great importance to identify target groups first and then select methods that respond to the needs and the envisaged level of discussion with each group. Using a mix of methods is crucial to be able to reach out to different groups. Online methods (web-based survey, mobile application, instant messaging) have proven to be successful in this measure, in particular for involving young people and people that have only little time.

Business model

This measure is funded by the project funding with €145,450. The actors involved are Regional Council of Southwest Finland, City of Turku and Turku University of Applied Sciences. In addition to this, the process includes representatives from local authorities in the Region of Southwest Finland, consultants and other stakeholders.

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City district/urban corridor cases as pilots for sustainable urban mobility

Summer 2019



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- Development of mobility node for seamless transportation opportunities
- Smart mobility services and solutions
- Integration of smart mobility branding and marketing into the city communication

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

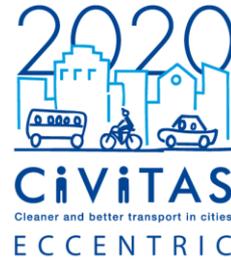
Location: Turku, Finland

Organisations involved:

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What is the solution?

A mobility node combining bike sharing, car sharing, public transport and information panels, will be created in the Kupittaa (district) laboratory area (the 'living lab' for the City of Turku in CIVITAS ECCENTRIC) and all year round seamless cycling and walking connections implemented. Via the node, MaaS (Mobility as a Service) services can be tested in the area. The target groups of this measure are students, companies and housing companies located in the Kupittaa district. The measure also aims to integrate smart mobility into the branding and marketing of the city's communication.

How does it work?

Sketches of the mobility node were prepared by an architecture student at Tampere University of Technology during the spring and summer of 2017. The mobility node concept was presented to various stakeholders, city representatives and citizens on a special event. Participants were asked to suggest ideas of services the node could provide. Negotiations between the city and private landowners have been started.

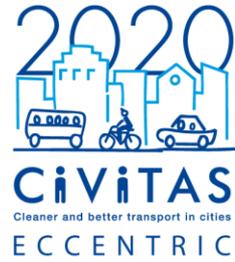
A mobility questionnaire has been designed in order to survey people living and working in Kupittaa about their wishes and concerns with regard to urban mobility and public transport in particular. A total of approximately 900 organisations have been approached with the questionnaire. With the questionnaire still running, we have to this date received approximately 150 responses. A smart mobility information pack has been designed for companies and this will be marketed to those interested in autumn 2018.

First negotiations with key players in the Kupittaa area took place in spring 2017. As a result of these meetings, the visibility of public transportation timetables and offers have increased/improved in the lobby screens and information channels (such as newsletters, social media, etc.) of the companies involved. Four smart mobility events on biogas, car sharing, winter cycling and e-mobility, took place in autumn 2017 generating great interest.

Expected results

What positive impact is the solution expected to bring to the city in terms of the key CIVITAS ECCENTRIC objectives:

- Improved knowledge about smart mobility options in the laboratory area. More than 60% of the companies in Kupittaa are aware of the measures being implemented in CIVITAS ECCENTRIC.
- Less need for parking areas due to improved use of sustainable modes of transport and car sharing solutions.
- Shorter transportation chains and transportation time from the Kupittaa train station to the functional urban area.
- To enable that smart mobility is part of the city communication, marketing and branding.
- To shift company trips into more sustainable modes in order to improve their ecological and economic performance.



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Business model

This measure is funded by CIVITAS ECCENTRIC, by €160,225, and through a separate budget allocation for the mobility node.

A large number of actors are involved in the measure. The number of actors is on the increase as the various companies are contacted, and more actions needed emerge from the meetings. The specific company actions are funded by private money.

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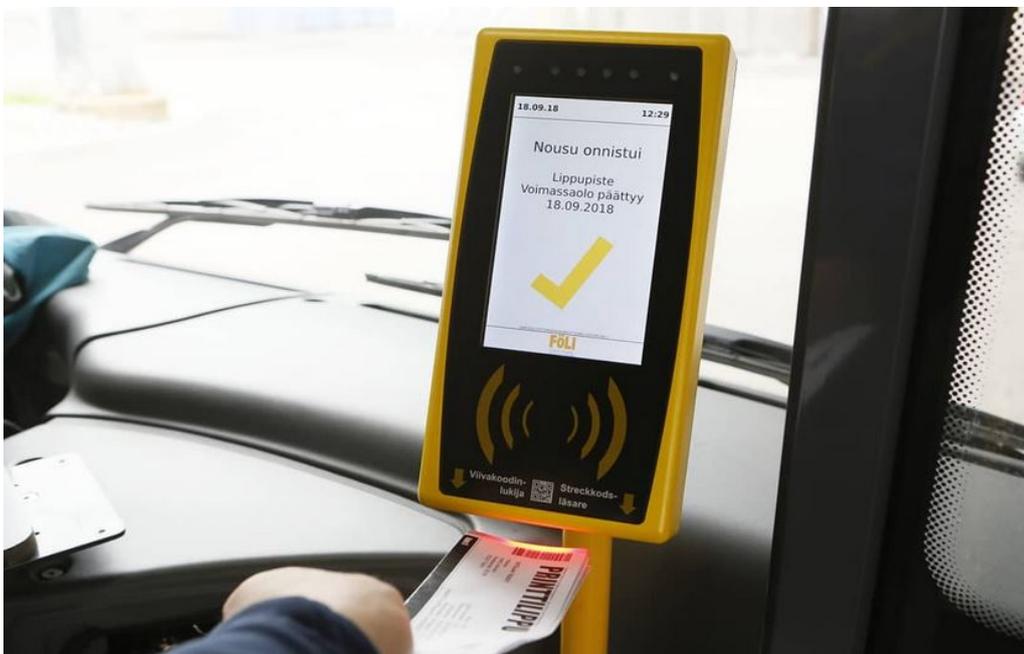
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Smart multimodal mobility services – applying the Mobility as a Service concept

Summer 2019



Theater ticket being used as a bus ticket © Turku City Theater

- Mobility as a service system (MaaS) created and applied to everyday services in Turku
- Harnessing IT: tailored solutions for the masses
- Transforming public transport

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

Organisations involved:

[City of Turku](#)

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What is the solution?

MaaS (mobility as a service) is a concept of integrating different modes of transport into one service. Its an approach used to facilitate a shift to sustainable mobility by improving the availability of high-quality alternatives.

To make it work, integration must be comprehensive and user-friendly. It must include as many types of services and modes of transport as possible (intercity travel, local public transport, car sharing, etc.) and offer smooth one-stop-shopping including real-time information, trip planning, booking and payment.

Thus information and communication technologies (ICT) are vital for MaaS: these facilitate innovative and efficient ways to produce and bundle mobility services. Finally, MaaS has developed to the point where it enables economies of scale to meet individual tailoring at competitive prices without sacrificing quality. It is also the reason why MaaS is equally applicable to building a solid business case or providing cost-efficient public transport services.

Short term goals include creating cooperation models between different parties, also to provide the first MaaS service to citizens. Long-term goals consist of a wide variety of MaaS services affecting the modal split resulting in fewer cars, less pollution and an improved city environment. Car use efficiency and equal possibilities of living a car-independent lifestyle also form part of the long-term goals of the measure.

How does it work?

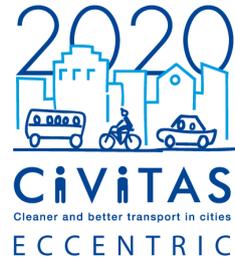
In the present model, the user may either buy means (car/bike) or tickets for transport (bus ticket, train ticket, etc.). In this measure, the city of Turku catalyses and pilots the development of the MaaS system and services in the city of Turku. This includes the creation of business models which enable cooperation with different existing service providers. The measure also includes attracting new MaaS operators to come to the city of Turku, the creation of different service packages, and marketing them through a variety of communication channels.

The Turku approach to promoting MaaS:

- Evaluate and benchmark indicators in key areas: awareness, policies, administration and cooperation.
- Apply inclusive planning approaches.
- Involve any and all stakeholders as early and often as possible.
- Network and facilitate networking.
- Promote, create awareness and expectations.
- Continuous innovation: invent, test, pilot, repeat.

Examples of activities:

- Systematic interaction with a wide variety of stakeholder groups: citizens, employers, housing communities, mobility service providers, associations, etc.
- Continuous two-way communication using all available means: on ground events, social media, queries, interviews, focus groups, meetings etc.
- Liaising and cooperating with regional and state authorities in issues involving several agencies. For example first/last mile solutions in intercity travel.
- Regular internal meetings to establish administrative and political coordination towards MaaS.
- Research:
 - o Evaluation of mobility demand and travel patterns
 - o Use of stakeholder contacts in collecting data
 - o Cross-referencing with relevant background data (car ownership, driver's license, commuting etc.)
- Testing and piloting mobility solutions for upscaling potential and feasibility.



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Expected results

This action introduces MaaS in the city of Turku and through it, MaaS services are expected to become widely known. Various kinds of mobility service packages will be available for the general public, particularly in the Kupittaa area and in the city centre. Results will include:

- MaaS friendly administration and policies.
- Different kind of cooperation models are tested in Turku.
- The number of cars per resident starts to fall down as other means of sustainable mobility become easy and compatible.
- Increased public awareness leading to increased demand.
- Improved availability of mobility services: new providers, more variety, all modes available.

Business model

This measure is funded by the CIVITAS ECCENTRIC project allocation of 160 075€.

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Integrated ticketing and information system for smart mobility

Summer 2019



© City of Turku, Anna Lilja

- Collective passenger transport
- Bike sharing system
- Public transportation opportunities

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

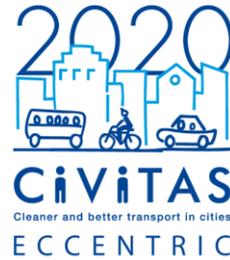
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What is the solution?

The aim of this measure is to create a harmonised public transportation authority (PTA) ticketing system that is also compatible with a bike sharing system (BSS). Moreover, this measure seeks to increase open interfaces available to Mobility as a Service (MaaS) operators and to the mobility service providers that want to link their service with public transportation.

In the long run, the goal is to have a wide variety of services linked to the open public transport platform, such as several different bike types and electric vehicles. What's more, the objective is to make MaaS operators cooperate with PTAs.

How does it work?

In this measure, the city of Turku will develop a new open data interface and platform into which the public transport ticketing system will also be incorporated. This shall enable the integration of other local service providers into the MaaS ecosystem, such as taxis, parking houses, etc. The approach will result in easy and accessible multimodal services for the general public.

The measure will also include the integration of a ticketing system for a BSS. This will demonstrate how the new information system and open integration can enable new business opportunities and models.

Expected results

With this measure we expect different MaaS operators to cooperate with the PTA. We also expect public transport services to be connected to several MaaS packages, and thereby also increase the number of public transport users.

Business model

This measure is funded by CIVITAS ECCENTRIC, and has a planned budget of €261,450. In addition to the project funding, funding from the city's PTA platform is also being provided. This measure includes public/private contracts, cooperation models and initiatives.

Find out more

For further information on smart mobility of Turku PTA from <https://www.foli.fi/en/smart-mobility>

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Easy, safe and comfortable cycling and walking around the year

Summer 2019



© City of Turku/Anette Korkiakangas

- Increasing winter cycling rates in Scandinavia
- Reduce air and noise pollution from cars
- Better quality of life

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

Organisations involved:

[City of Turku](#)

[Turku University of Applied Sciences](#)

What is the solution?

During the winter months, cycling in Turku drops significantly. It (only) reaches about 20-25% of the cycling that is done during the summer months. Increasing winter cycling rates through better maintenance of cycling routes/paths, combined with information campaigns offers good potential for improving the modal split.

The aim of this measure is to increase the year-round flows of cycling and walking by making the available infrastructure easier, safer and more comfortable to use. For this measure, winter maintenance methods will be piloted and a renewal plan for infrastructure improvements drafted.

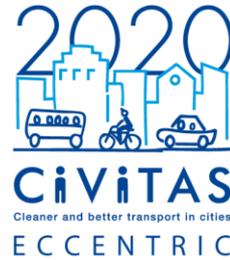
How does it work?

To reach the goal of year-round high-quality cycling and walking options, a study on available and innovative winter maintenance methods was carried out. Techniques for winter maintenance with the best results for Turku were chosen on the basis of the results of the study. For a pilot route of twelve kilometres, sweep-salting to keep bicycle paths passable during winter was selected for testing. In addition, research into the state of the city's main cycling network was conducted, resulting in a renewal plan for the network and infrastructure improvements.

The improvements to infrastructure-based along the pilot cycling route require some rerouting of cyclists and pedestrians. And different safety measures for bicycle and pedestrian routes located along, or near, construction sites have also been implemented. The latter is a replication of a measure that is currently being implemented by the city of Stockholm (Sweden) also in CIVITAS ECCENTRIC ('Policy for re-routing cyclists during construction work').

This measure also includes constant monitoring of the number of cyclists and pedestrians in the city, to monitor whether the measure achieves its objectives. For this reason, a 'cycling barometer' has also been developed for accurate measurements. During the first year of the pilot phase, the following activities were undertaken:

- A tender process to contract the chosen winter maintenance technique (sweep-salting) of the selected pilot route during winter.
- An information campaign with signposts on streets; news, media coverage and events about cycling in winter to help raise awareness about the issue and motivate people to not put their bikes away in winter.
- Collection of experiences of using the pilot route from members of the public recruited as 'feedback providers', the local cycling association, and through general city feedback, which will be used to improve the measure in the coming years.
- Friction measurement for constant monitoring of the winter route to control that conditions continue to stay safe for cycling and to monitor how well the measure works.
- Analysis of accidents where pedestrians and cyclists are involved, focusing on the winter months. This will enable a better understanding of the impact of winter maintenance and help improve approaches for its deployment.



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The city of Turku also plans to try more effective traditional winter maintenance techniques (such as ploughing more often and with high quality) next to the winter cycling test route and sweep-salting. Both methods will be analysed in order to get important comparison material.

In addition, the city of Turku plans to improve the way in which it uses municipal funds for road maintenance and aims to come up with a more cost-efficient way for winter cycling and walking road maintenance, with prioritised networks and corridors, and cost-efficient maintenance methods.

Expected results

The measure is expected to yield the following results:

- Enhanced knowledge in implementing winter maintenance for the city of Turku.
- Increase in cycling and walking as a lifestyle: Cycling done in winter is expected to increase by 30%, and year-round cycling by 15% by 2020, compared to 2016.
- Decrease in traffic accidents.
- Decrease in cyclist and pedestrian injuries (due to slips and falls, etc.).
- More efficient use of funding due to better knowledge and data.
- Increased funding for maintaining cycling and walking infrastructure.

These results will generally lead to improvements in public health, reduce car travel related noise and pollutant emissions, improve air quality and quality of life in the city.

Business model

The measure is funded so that the first year of the pilot is paid through CIVITAS ECCENTRIC. The next year will be funded with a budget allocated by the city of Turku. The total budget of the first pilot year, including preparation work and research work, is around €200,000.

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Bike sharing and car sharing schemes

Summer 2019



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- Setting up a bike sharing system
- Reducing car ownership
- Enabling car sharing schemes

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

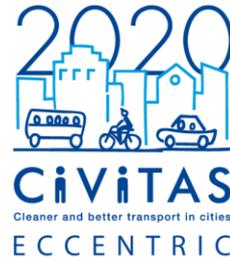
Location: Turku, Finland

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What is the solution?

The main idea behind this measure is for the new services to complement Turku's public transport services. This measure will provide the first bike sharing system (BSS) in Turku. A pilot BSS, with 300 bicycles and 37 stations, will be designed, procured and implemented.

Furthermore, the objective is to encourage and enable car sharing systems to also be offered in Turku. The first demos have been planned with car sharing providers or with existing car fleet owners like the city, universities and other big car fleet owners.

How does it work?

Research and planning for this measure began in Turku in September 2016 and was finished in February 2017. Relevant milestones accomplished so far are: dialogues with internal and external stakeholders, benchmarking of the BSS, marketing analysis of the car-sharing companies in the Turku area, and baseline data collection. Furthermore, the Turku city execution board accepted the proposal for the bike sharing procurement in April 2017. The brand Föli-fillarit was created for the BSS. Tendering of the BSSs, marketing and digital services have been carried out.

The procurement consisted of 300 bikes and 37 stations. This is higher than originally planned in CIVITAS ECCENTRIC as it became evident that the original number planned was too low. The procurement and implementation phase have both been finalised with the launch of the BSS taking place on 1 May 2018.

Expected results

The expected impact of the measure is to increase the usage of public transportation, specifically the bike sharing part of it. As cycling becomes more attractive, it becomes a competitive alternative to the private car. It is expected that leasing or sharing a car will be perceived as a more attractive alternative than owning a car.

Business model

The BSS system is financed through the ECCENTRIC project, city allocation, income from the sales, income through marketing and sponsorship. The budget for the all-year-round BSS is three million euro for three years.

The number of actors involved is quite significant, as the system has many unique aspects to it. Turku's BSS was created very fast. The minimum time required for implementing such a system is 1.5 years.

Find out more

For further information: www.foli.fi/en/citybikes

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Introduction of electric public transport

Summer 2019



Electric bus charging in Turku. © City of Turku

- Electric buses
- Clean and comfortable public transport services
- Happier customers at a lower cost

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

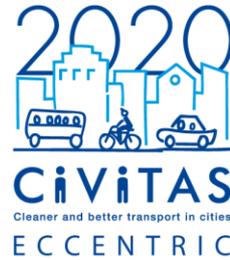
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What is the solution?

The City of Turku has set the ambitious goal of becoming CO₂ neutral by 2029. Among the measures to reach that goal is the decision to switch to electricity as the primary source of energy in public transportation. This measure introduces a pilot project that is the first step in that process. Before piloting with fully electric vehicles/buses, experiences in using alternative fuels have been gained with hybrid buses.

How does it work?

City of Turku with its subsidiaries Turun Kaupunkiliikenne Oy (the public transport operator) and Turku Energia (power supplier) cooperate in the pilot stage of adopting electric vehicles (EVs) to the local and regional traffic. The planning started as a CIVITAS ECCENTRIC early measure, following the decision of the executive board in June 2015; procurement begun in September 2015. The procurement consisted of six electric buses, quick charge stations for each end of the line and an overnight charging station for the depot. Trials started in October 2016 after the delivery of the first vehicles. A total of 94 drivers were trained in using the new buses.

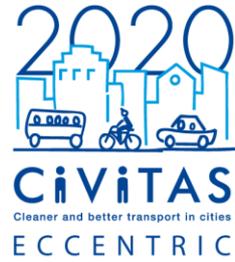
The pilot also includes an EV research project in cooperation with Turku University of Applied Sciences. The goal of the project is to identify and propose solutions for technical and operative bottlenecks of expanding electric bus operations. The research covers a wide variety of topics:

- Specifications and procurement of electric buses and the charging infrastructure.
- Innovative business and contract models for (service) procurement.
- Adapting bus line planning and optimising models for EV operation.
- Finding solutions for accurate measurement of energy consumption.
- Using data from onboard and charging systems to plan future choice of buses.
- Effect of driver training to cost of operation.
- Reliability and total cost of ownership (TCO) of EVs versus diesel vehicles.

Expected results

The main goal of this measure is to provide reliable data to enable planning and future political decisions concerning the extension of electric bus operations. Based on the pre-studies carried out, the pilot is likely to indicate electric buses as a cost-efficient and reliable alternative to diesel buses, and a solution to reach CO₂ neutrality. Other emissions and environmental noise should be significantly reduced as well.

The pilot is expected to generate, increase and maintain awareness of, demand for and satisfaction in electric powered bus services, and sustainable mobility in general. Another significant goal is improving drivers' working conditions by reduced levels of noise and vibration in the EVs. Ultimately, as a combined result, the measure is expected to lead to a decision to extend services operated by electric buses.



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Business model

Timeplan:

Research and planning phase: Nine months - from September 2016 to October 2017

Procurement and implementation: 15 months - from November 2016 to January 2018

Demonstration and Monitoring: 15 months - from February 2017 to the end of April 2019

Conclusions and Recommendations: 16 months

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Electrification of the municipal fleet and promotion of electro-mobility

Summer 2019



© Nuppu Ervasti, City of Turku

- Testing light electric vehicles (e-bikes, e-scooters, e-kick scooters)
- Increasing smart mobility in Turku
- Starting new business models with local suppliers

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

Organisations involved:

[City of Turku](#)

[Turku University of Applied Sciences](#)

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What is the solution

The City of Turku will test eight light electric vehicles (LEVs), including e-bikes and e-scooters, in parallel to awareness raising actions for e-mobility in different city municipal departments.

LEVs provide an opportunity to replace the use of a passenger car, especially for trips that are less than 10 kilometres (km) drives. According to the results of the Mobility Survey (2013) which employees of the City of Turku took part in, 15% of all commuting was under five kilometres, and 42% of work-related trips (during working hours) were under five kilometres, and were done by a passenger car (as a driver or passenger). 31% of these work trips (during working hours) is done by employees using their own cars. Many, if not all of these trips could be done with some other mobility device/form than a car.

The measure tests and promotes e-mobility solutions and sustainable means of transportation, carefully taking into account Turku's Sustainable Urban Mobility Strategy and other relevant strategic decisions of the city. Furthermore, the measure supports the city of Turku's target of becoming carbon neutral by 2029.

How does it work?

Different types of electric vehicles (e-bikes, e-scooters, e-kick scooters) will be tested together with awareness-raising actions in a one-year e-mobility pilot. The pilot is being implemented by various municipal departments. In the pilot, the employees of the city of Turku get to test what it is like to use LEVs for everyday travel. The pilot aims to increase the awareness of city staff and through that increase the diversity of e-vehicles used by them.

For the pilot eight e-vehicles meeting different mobility needs were selected to be tested by city staff. The vehicles will be leased from three different suppliers. The aim of the pilot was to experiment with 10 different electrically powered vehicles. After two bidding rounds, offers were received from eight providers of LEVs. The number of vehicles was considered as a reasonable number to start the implementation of the pilot. Two more vehicles will be added to the test fleet as soon as suitable providers will be found.

The goal of the pilot is to get about 200 user experiences from LEVs and increase the knowledge of e-mobility among the city's staff, in general. The LEVs will be tested in approximately 24 city units during the year-long pilot. The pilot started with the involvement of ten units at the beginning of August 2018. The involvement of further units will be sought during the course of the pilot, as needed.

Staff participating in the pilot will receive their LEV for personal use for two weeks. They are expected to use the vehicle to commute, travel during the workday and during their spare time. During the two week period, the testers can use the vehicle as if it were their own. Those taking part in the pilot are required to sign an agreement with the CIVITAS ECCENTRIC project, on which they need to agree to the terms of use of the equipment. The tester should also report their experience in using the vehicle at the end of the two-week trial period. Collecting the data will be carried out via a questionnaire.



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Expected results

- An approved plan for the city of Turku on e-mobility is in place.
- Reductions in local emissions through the 10 electric pilot vehicles is approximately 10 tonnes per year of CO₂.
- In the longer term, the electrification of 5% of Turku's urban regional fleet would entail a reduction in CO₂ emissions of 7,500 tonnes per year.
- Reduction in local emissions by replacing the use of cars with electric vehicles.
- A change in the behaviour of city staff regarding mobility in favour of e-mobility.
- The efficiency of the use of the city fleet increases by 20% during the demonstration time.
- Use of own cars for work travel decreases by 20%, in comparison to 2016 by the end of 2019.

Business model

This measure is funded by (approximately) €138,813 through CIVITAS ECCENTRIC.

Timeplan:

Research and planning: 12 months - from September 2016 to August 2017

Procurement and implementation: Eight months - from September 2017 to April 2018

Demonstration & Monitoring: 12 months

Conclusions & Recommendations: 16 months

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Introduce biogas for heavy-duty freight vehicles

Summer 2019



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- Clean Heavy Duty Vehicle traffic
- Reducing CO₂ emissions in urban freight
- Renewable fuels

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Turku, Finland

Organisations involved: [City of Turku](#)

[Gasum](#)



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What is the solution?

The solution is to support the growth of the biogas ecosystem in the region of Turku by introducing Heavy Duty Vehicles (HDV) operated by liquefied biogas (LBG) to replace traditional diesel trucks. By using renewable energy instead of fossil fuels it is possible to reduce emissions from carbon dioxide (CO₂) NO_x and particulate matter (PM).

The City of Turku is cooperating with relevant stakeholders to promote the use of biogas for heavy duty freight vehicles. In terms of evaluation, key indicators will cover both indicators related to the technical realisation of the measure (vehicle kilometres travelled, investment and operational costs), environmental indicators (CO₂, NO_x, PM emissions, energy efficiency, etc.), as well as society related indicators (awareness, acceptance, satisfaction).

How does it work?

Gasum Ltd. will invest in two LBG trucks and use them in the company's own waste and organic fertilizer logistics. The City of Turku will promote biogas use by purchasing and operating two to three delivery vans, or similar, for food transport in the city area, for instance.

One LBG truck runs between the Turku Waste Water Treatment Plant and Gasum's biogas production plant transporting sludge that will be processed to biogas. The other truck delivers nutrition residue from the biogas plant to local farmers.

The trucks are refilled at the local public biogas filling station.

Expected results

- First freight companies and vehicles using LBG as an energy source.
- Higher acceptance of LBG, and as a result, first passenger cars using liquefied biogas available in the local market.
- Biogas operated vehicles are competitive with fossil fuel operated vehicles.
- If in future a production capacity of 10 Mm³ can be used for replacing the diesel in cargo trucks this will result in annual reductions of 100 tonnes of NO_x emissions, three tonnes of PM and 30,000 tonnes of CO₂ emissions.

Business model

Procurement of the two LBG trucks is funded by CIVITAS ECCENTRIC.

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