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Smart and flexible parking using new technology

Summer 2019

© Brickyard

- Increase in parking occupancy rate
- Innovative parking monitoring equipment
- Emission and traffic reduction

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm

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What is the solution?

The city of Stockholm has recently extended the area in which a fee is required for on-street parking. As a result, the city needs to cover a larger area for parking surveillance. To achieve this goal, this measure aims to research, test and evaluate new systems for smart, efficient and accurate parking surveillance, using laser radar and cameras on cruising vehicles. The measure also aims to test systems that guide drivers in Stockholm to currently unoccupied parking spots on the streets in Stockholm, providing live data in a parking app. This leads to more efficient use of available parking, more efficient parking management and thus also less “searching for available parking” - traffic.

How does it work?

Stockholm has implemented a new parking plan, including a major extension of flat rate on-street parking for residents in areas outside the inner city. In these areas parking used to be free of charge. To meet the need for parking surveillance in this area, the city of Stockholm is piloting two semi-automatic systems for on-street parking surveillance. The tested systems will simultaneously perform parking surveillance and gather and process data to provide citizens with real-time information about where to find available parking.

To set up this pilot, the Stockholm Traffic Department launched a procurement of innovation procedure for which suppliers were invited to give innovative suggestions on how to solve the task. A jury from the traffic department selected two out of twelve contributions for a test. The winning contributions use technology from Brickyard (a Dutch company) and Parkling (a German company). Both systems use vehicles cruising the streets gathering data about occupied and available parking spaces along the roads. Data collected by the vehicles is combined in real time and streets with available parking spaces are marked green in an app, developed for this purpose, guiding drivers to streets more likely to have available parking. As the car leaves the parking spot the app reports the spot as available again. Hence the more drivers use the app the more accurate the information.

In Brickyard’s system, the parked cars are identified with license plate recognition. Information about the parked cars is electronically combined both with the system registering paid fees and with the system keeping track of where parking is allowed. To function effectively, Stockholm’s most modern parking payment system must be in place, registering the plate number in connection to the payment. The above-mentioned parking app will also provide this function, alternatively, drivers can register their license plates when paying for their parking spot at a parking ticket vending machine. This allows the cruising vehicle to identify whether a license plate is connected to a parking payment.

Expected results

This measure will contribute to a more liveable suburban environment by reducing parking search time, improving traffic conditions and traffic safety, reducing emissions resulting from parking searches and optimising the available road space. The data collected will also give indications of the possibilities to reduce the number of parking spaces and increasing parking occupancy. The insights gained during the pilot phase of the tested solutions will give baseline data for possible full-scale implementation.

Evaluations from other cities show that using innovative parking solutions reduces the search traffic by 30 per cent relative to the control area, resulting in a CO2 reduction relative to the control area of 24 per cent. If the same results can be achieved in Stockholm with 350 parking spaces the results would be a reduction of vehicle kilometres by 18,000 km annually and CO2 reductions from road traffic by 9,5 tonnes annually.

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Business model

This task is supported with 300 000 € from EU Civitas.

Contact details

Thomas Sjöström
Traffic Administration, City of Stockholm
Email: thomas.sjostrom@stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Green parking standards in Årsta city development

Summer 2019

©Helene Carlsson

- Urban planning
- Car independent lifestyles
- Sustainable parking spaces

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

Location:	Stockholm, Sweden
Organisations involved:	City of Stockholm

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What is the solution?

The aim of this pilot measure is to provide a mobility service for users of pop-up recycling facilities so they do not have to use their own car when transporting waste or items for recycling. The service might reduce the need of a car and parking spaces in the suburbs of Stockholm. If scaled up the service might provide a solution to fine tune the current regulations on flexible parking space that apply to housing development. By reducing the amount of required parking space per housing unit, more urban space can be freed up and used for other purposes.

How does it work?

In 2017, the Stockholm Water and Waste administration started a mobile reuse facility, a so-called pop-up recycling. Pop-up recycling is a mobile activity that moves around between different locations in Stockholm. In every place, the pop-up facility stops during a weekend (Saturdays and Sundays between 10am and 4pm). The residents in the area have the opportunity to deliver hazardous waste, portable coarse waste and exchange items with one another in a store section. Part of the purpose of pop-up recycling is to reduce waste through reuse.

This pilot measure will provide a mobility service during approximately 14 weekends and will start 6th April 2019 until the summer break 2019. The mobility service will allow residents to book green vehicles that can pick up their recyclable waste and transport it to the pop-up recycling facilities. This way, the residents do not need to use their cars for bulkier items.

Expected results

The expected long-term result of implementing the mobility service, in combination with other sustainable mobility measure implemented in the city of Stockholm, is a reduced need for private cars and less need of parking space in housing areas. If scaled up the service might provide a solution to adjust the green and flexible parking requirements, allowing urban space to be used in an optional and greener way instead of parking spaces. Another result is the cost for building new multiple houses will decrease without having to build a parking space.

This measure is funded with 237 800 € from EU Civitas.

Contact details

Thomas Sjöström
City of Stockholm, Transportation Administration
E-mail: Thomas.sjostrom@stockholm.se
Living lab area in Stockholm: http://civitas.eu/eccentric/stockholm

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Develop a smart choice of mobility services

Summer 2019

© Johan von Porat/UbiGo

- Mobility as a Service
- Peer-to-peer car sharing
- Promoting ‘car light’ lifestyles

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

Location: Stockholm, Sweden

Organisations involved:

UbiGo Innovation AB

City of Stockholm

GoMore ApS

SNAPPCAR

Carshare Ventures B.V.

What is the solution?

The city of Stockholm aims to increase the appeal of car light lifestyles for its citizens and to improve the opportunities for citizens who wish to make a shift towards a 'car light' lifestyle. Therefore, this measure aims to make solutions such as Mobility as a Service (MaaS) and private car-sharing more accessible. The measure will serve to develop, implement and promote these solutions as viable alternatives to private car ownership. Mobility SMEs UbiGo, SnappCar and GoMore are involved in delivering these services in the city of Stockholm.

How does it work?

The measure focuses on three mobility solutions, offered by mobility SMEs, and in addition, includes awareness-raising campaigns to increase the success of the measure.

Monthly subscription to local travel
In Stockholm, the CIVITAS ECCENTRIC partner UbiGo is developing and aiming to launch one of the world's first real MaaS services. The service is built on a flexible subscription model that can meet the everyday travel needs of entire households. It makes all of the following travel modes available in one app: public transport in the greater Stockholm region, car sharing, rental cars, taxi and city bikes. More services can be added later on.

The UbiGo app integrates a travel planner that suggests various options for the trip and combines various modes to ensure optimal journey times. Subscription resembles a bundled smartphone subscription, but with days for public transport usage and hours of car driving time, instead of gigabytes of data and minutes of call time. Journey or tickets not used in one month can be transferred to the following month, whilst it is easy to add more if the prepaid amount runs out before the end of the month. Customers will have access to 24/7 phone support. The plan is to run a one year pilot of the app followed by an evaluation.

Share a car with your neighbours
Two companies providing Peer-to-Peer (P2P) car sharing platforms are also partners in CIVITAS ECCENTRIC: GoMore and Snappcar. Both platforms enable individuals to share their own car with neighbours or others. The online platforms allow users to offer their car during times they are not using it, engage with a community of prospective users, and ensure their vehicles while they are being used by someone else. Car owners receive payment for offering their car, which users of the car can pay via the online platform. There is also a mutual rating system for the customer and car provider. GoMore also offers the option of carpooling on their platform - meaning the option to offer others to join a car trip that you are taking anyway.

During the project, both SnappCar and GoMore will intensify the work to acquire new users in Stockholm. GoMore has set up a Swedish customer care function and SnappCar has developed an app and added, among others, the feature of driver's licence verification. Both companies have run ad campaigns on social media to raise awareness and receive new members and shared cars on their platforms.

Over the course of the project, SnappCar and GoMore will further develop specific technical features in their services and increase their presence and awareness among Stockholmers. Both P2P actors also aim to improve API-compatibility (application programming interface).

Raise awareness of MaaS and P2P Car Sharing
All groups involved in this measure, including the City of Stockholm, as measure leader, will communicate alternatives to private car use to selected target groups. This will be done both independently and collectively.

Expected results

Expected impacts of the measure include improved mobility options for citizens including integrated and shared services, making it simple to adopt a car light lifestyle. Shifting towards a car-light lifestyle will have a positive effect on traffic congestion as well as emissions and overall quality of life. By getting 200 subscribers to the UbiGo MaaS, 180,000 km of trips will be reduced yearly. The measure is also expected to increase experience with building business models for sustainable mobility services.

Business model

This measure and its involved partners are supported with nearly €752,000 in EU funding from CIVITAS ECCENTRIC. This, however, is a small share of the full costs to establish and operate the three services. In addition to Ubigo, Snapcar and GoMore are developing their own business models and charging users for their services in various ways. The measure involves cooperations with Stockholm Transport, Taxi, and other mobility suppliers as well as several research projects and organisations and national initiatives.

Contact details

UbiGo
Hans Arby, CEO UbiGo
Email: hans.arby@ubigo.me
Website: http://www.ubigo.nu/

Snappcar
Fredrik Karlberg, CEO Snappcar Sweden
Email: fredrik.karlberg@snappcar.se
Website: https://www.snappcar.se

GoMore
Klara Bergkvist
Email: klara@gomore.com
Website: https://gomore.se/

City of Stockholm
Helene Carlsson
Email: helene.carlsson@stockholm.se

Paul Fenton
Email: paul.fenton@stockholm.se

Website: http://www.stockholm.se/eccentric;
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Policy for rerouting cyclists during construction work

Summer 2019

© Lennart Johansson

- Innovative rerouting methods and materials
- Improving cyclists' security and safety
- Incentivising cycling at all times

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm

Swedish Business Association for Safer Road Construction Sites (SBSV)

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What is the solution?

The City of Stockholm is growing fast, which leads to a large number of building construction sites, road construction sites, and traffic with heavy vehicles to and from these sites. Construction sites and the traffic associated with them particularly affect cyclists, who are vulnerable road users. The “Technical Handbook” that regulates how contractors and entrepreneurs building on city-owned land have to handle road safety on construction sites does not go into detail on how to promote continuous safety and mobility for cyclists. Updating the handbook with a cyclist rerouting policy will set a standard for making cycling safer and more attractive around these sites. As a result of the update, all construction sites will be required to develop a plan for the management of bicycle traffic during diversions. The goal is to encourage 5% of everyday cyclists to keep using their bikes despite the construction works, instead of travelling by car or public transport.

How does it work?

To improve the situation at construction sites for cyclists and to determine which standards to include in the “Technical Handbook”, the City of Stockholm is testing new adapted materials and signage, detours, supervision of road construction sites and more effective ways of issuing penalties and fines. The processes of testing and updating the handbook are running in parallel.

The Stockholm Traffic Office, in cooperation with the Swedish Business Association for Safer Road Construction Sites (SBSV), have invited entrepreneurs to present new and innovative solutions for barriers and other material used to encircle construction sites. During a test period, three companies presented their materials/approaches on three different walking and cycling paths in Årsta (the CIVITAS ECCENTRIC ‘living lab’ in Stockholm). The flow of cyclists at the test sites was measured/counted with a pneumatic road tube before, during, and after the test period. The purpose was to see if the number of cyclists differed with and without the re-routing in place. On-site interviews were conducted on two different occasions during the European Mobility Week. A web survey for the general public was online during this period.

In parallel, the Stockholm Traffic Office has initiated a project together with Swedish Standards Institute (SIS), other public road administrators and product developers in order to develop a new Swedish standard for temporary traffic arrangements for unprotected road users. The Swedish standard is expected to be ready by Autumn 2019.

Expected results

Thanks to better information and new safety measures, cycling by road construction sites is expected to become more attractive. In particular, the measure is expected to prevent 5% of regular cyclists from leaving their bikes to travel by car or public transport due to construction works on the route. The updated Technical Handbook will give the city a more solid ground to require construction companies to use innovative material for marking and detouring cycle paths. This will also improve the availability of innovative rerouting material which will be readily available at a lower cost. All in all, this measure will promote cycling as an attractive and safe means of transport, with associated benefits for air, noise pollution and public health.

Business model

This measure is receiving funding of approximately €250,000 from CIVITAS ECCENTRIC.

Contact details

Mats Einarsson and Jessica Danielsson, City of Stockholm, Traffic Office
E-mail: mats.einarsson@stockholm.se and jessica.danielsson@stockholm.se
Websites: http://www.stockholm.se/eccentric
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Offering a test fleet of e-bikes and e-freight bikes

Summer 2019

© Cykelkonsulterna

- Car independent lifestyles
- Emission reduction
- New mobility opportunities

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

Location: Stockholm, Sweden

Organisations involved: Cykelkonsulterna, City of Stockholm

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What is the solution?

E-bikes and e-cargo bikes offer great opportunities to move away from car travel. They can support longer trips and allow users to transport heavy goods, such as groceries. To promote this attractive alternative to car travel, the city of Stockholm plans to encourage its citizens to start using e-bikes, with the goal of getting 300 new e-bikes in use. In the long term, this measure will increase the usage of e-bikes and e-cargo bikes, decreasing emissions associated with car traffic and freeing up space in the city (due to less parked cars).

How does it work?

E-bikes and e-cargo bikes are a good mobility alternative for work-related trips, for light freight trips and for residents' leisure and shopping trips. To ease the transition to e-bikes or e-cargo bikes, the Cykelkonsulterna (a private consulting firm specialised in offering and promoting cycling) is offering companies and households in Årsta (the CIVITAS ECCENTRIC 'living lab') the possibility to test the electric (cargo) bikes for a trial period of a month in order to find out whether, and to what extent, they could be a viable mobility alternative for them. After the trial period, the companies and households are offered the possibility to purchase the e-bikes they have tested. The idea is that the trial will nudge them into buying a bike. Test persons for the trial have been recruited via targeted campaigns and direct marketing together with companies, housing associations and other organisations in the living lab area.

The first test e-bikes were in circulation by May 2017 and the test fleet has gradually grown since then. As of May 2018, it consists of 23 e-bikes and a couple of e-cargo bikes. During the first year, 200 persons used the option of borrowing an e-bike or an e-cargo bike. Following the trial period, test users provided feedback about their experience using an online form. Results indicate a generally positive reaction to the e-bikes. However, so far the trial did not lead to as many direct purchases of an e-bike as the project had hoped for.

A real challenge for the measure has been to reach and recruit the most prioritised target group - car users - and to have them shift from car to e-bike.

Expected results

The main impact of this measure is to increase the use of e-bikes, with the ultimate goal to replace private car trips for work, leisure and shopping. Furthermore, the measure will reduce car trips for business and freight trips. This will reduce emissions (CO_2 and other air pollutants), free up space and may even reduce mobility costs for households.

The test fleet is limited to 25 bikes. If 80% of companies/households buy a bike after the trial, 20 new bikes would be sold. However, the awareness impact of the measure will be larger.

Business model

This measure is supported with funding of €53,000 from CIVITAS ECCENTRIC.

Contact details

Helena Kalland
Cykelkonsulterna
Email: helena.kalland@cykelkonsulterna.se
Websites: www.cykelkonsulterna.se and www.provacykel.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Speeding up core bus routes

Summer 2019

© Photo Lennart Gustafsson/City of Stockholm

- Increasing the quality of bus services
- Reducing congestion
- Improving accessibility to public transport in peripheral districts

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm

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What is the solution?

Around 300,000 people travel on the core bus routes of the city of Stockholm every day. This measure aims to reduce journey times and increase punctuality along these routes. This will improve passengers' experiences of using core bus routes and improve connections to other public transport services.

How does it work?

Stockholm is expanding and in spite of a sustainable modal split of almost 80% at peak hours, road congestion will increase unless more people use public transport. The majority of journeys by car start or end in peripheral zones, outside of the inner city. For this reason, the city of Stockholm is working with regional partners to adapt methodologies used to speed up inner city core bus routes - which, if systematically implemented, proved to improve accessibility using minor, low-cost measures - and apply them to core bus routes in peripheral zones.

A project group has been established that includes members from the city of Stockholm and neighbouring municipalities, the public transport authority (SL), Stockholm County Council, and the Swedish Transport Administration. The project group works collaboratively to identify problems that may affect current or future core bus routes. Eleven existing core bus routes have been assessed and this measure, in particular, is contributing to the implementation and evaluation of improvements along two routes: bus lines 178 and 179.

These routes run on west-east axes in the northern suburbs of Stockholm and connect several important commuter rail and metro stations, densely-populated residential areas, business districts and other large workplace areas, including a major hospital. As such, they offer important services to travellers with diverse needs and who may require local transport or intermodal regional transportation. Once improvements have been introduced, the impacts will be monitored and evaluated. This may result in further actions or changes and will provide input to the use of this approach in the remaining nine core bus routes the project group seeks to address.

Expected results

The measure aims to improve punctuality and regularity of core bus routes in peripheral zones, meaning both the bus travel time and waiting time will become more predictable for travellers. In addition, the measure aims to reduce the overall journey time across the whole line, including at bus stops and for waiting periods.

It is hoped that the improvements will result in more passengers choosing to use the core bus routes (both for single journeys and as an entry to intermodal public transport journeys) and promote a modal shift from private cars to public transport. This may result in positive impacts in terms of reduced air or noise pollution, reduced emission of greenhouse gases, and less congestion at key junctions or bottlenecks.

Business model

The measure is funded with €183,000 from CIVITAS ECCENTRIC. City of Stockholm cooperates with neighbouring municipalities, the public transport authority (SL), Stockholm County Council, and the Swedish Transport Administration.

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Find out more

The project website is: www.sll.se/verksamhet/kollektivtrafik/aktuella-projekt/Stombussar/

Contact details

Johanna Eriksson
City of Stockholm, Traffic Office
Email: johanna.eriksson@stockholm.se
Website: www.stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Offering electric vehicle business test fleets to selected target groups

Summer 2019

© Lennart Johansson, City of Stockholm

- Electric van test fleet
- Craftsmen and delivery business
- Silent and emission-free service delivery

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

Location: Stockholm Sweden

Organisations involved: City of Stockholm, Mobility Motors

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What is the solution?

Studies have shown that craftsmen and delivery services are contributing substantially to inner city traffic since their work requires multiple van trips through the city during daytime. Therefore, this measure aims to promote electric vehicles (EVs) for this user group. The company Mobility Motors is offering electric vans at a reduced price to 15 craftsmen and delivery service companies. The selected companies in return are testing how electric vans meet their requirements for business use. The selected companies also agree to deliver evaluations and data on their actual use of the vans.

How does it work?

To increase the attractiveness of electric vehicles among craftsmen and delivery companies, the measure introduces a test fleet of electric vans to a selected group of 15 of these companies. Aside from promoting electric vans among the test group, the measure also allows the city of Stockholm to gather data to understand the barriers and opportunities for this group to drive on electricity and to create policies and incentives accordingly.

Participating companies were selected through a competition in 2017. The selected applicants are based in or drive through, the CIVITAS ECCENTRIC 'living lab' area Liljeholmen-Årsta-Hammarby Sjöstad to reach their customers. Companies with long driving distances were chosen so as to achieve higher CO_2 reduction during the test period. The competition also aimed at a wide coverage of different business types in order to evaluate for which of them an electric van is feasible and to understand what their charging patterns and needs are. The test companies are active in fields like building and real estate maintenance, such as painting, ventilation, cleaning, electricity installations, as well as construction, courier and delivery services, waste management and recycling, gardening services and wholesale.

Since autumn 2017, the companies have been testing electric vans in the city of Stockholm. A survey is continuously measuring the acceptance and user satisfaction of driving an EV in the five different business sectors that are part of the test group.

The test period is running between 2017-2019 and data collection is ongoing.

Expected results

The measure is expected to yield better knowledge about the pros and cons of using EVs, as well as raised interest from the side of these companies, and in the long term lead to increased use of electric vans among business fleets in Stockholm with related emission and noise reduction.

Business model

This measure receives €240,000 funding from CIVITAS ECCENTRIC.

Contact details

Marianne Kemnert
Mobility motors
Email: Marianne.Kemnert@mmgroup.se

Mariangelina Evliati
City of Stockholm
Email: maria-angeliki.evliati@stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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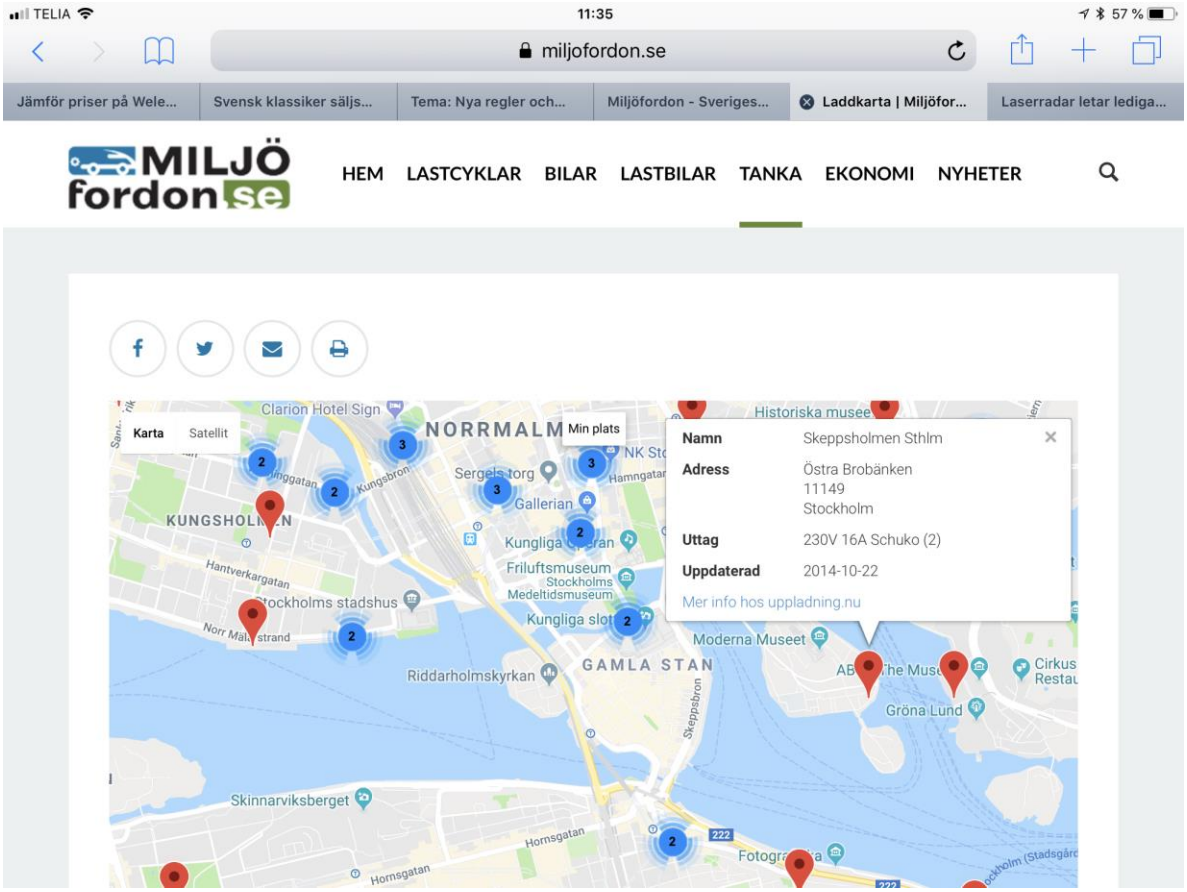
Miljofordon.se - the Swedish clean vehicle portal

Summer 2019



© www.miljofordon.se

- Online clean vehicle registry for interested buyers
- Comparison of vehicle life cycle emissions
- Online electric vehicle charging map

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm

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What is the solution?

Miljofordon.se is Stockholm's and Sweden's leading online resource for facts on environmentally classified cars, light and heavy trucks, environmentally friendly fuels as well as regulations and subsidies for environmentally classified cars (Clean Vehicle Portal). The aim of miljofordon.se is to disseminate knowledge and product-neutral information about clean vehicles, fuels, and other relevant facts to buyers and drivers of clean vehicles, making it easier for potential vehicle buyers to choose clean vehicles and find clean fuels. For this measure, the website will be developed to be used as an information channel connected to other measures that are implemented in the city of Stockholm as part of CIVITAS ECCENTRIC.

How does it work?

The website www.miljofordon.se is run by the cities of Stockholm, Gothenburg and Malmö, with co-financing provided by the Swedish Energy Agency. The website was launched in 1999 and is now a leading source of information for clean vehicle buyers in Sweden.

For this measure, the scope of the portal will be extended with information on environmentally friendly off-road machinery, heavy lorries and electric vehicles (EVs). This development is supported by a stakeholder dialogue to understand which services users need that are not yet available and as a result to provide a complete information source for environmentally friendly vehicles. The portal will also be connected to user-friendly online charging maps that indicate charging points for electric vehicles throughout the city and provide information to housing associations about the charging of electric vehicles.

This measure is linked to other measures targeted at increasing the use of EVs in the city of Stockholm, such as the Masterplan for developing EV charging across Stockholm.

Expected results

The website is intended to contribute to the gradual transformation of the private vehicle fleet in Sweden to a fossil-free and energy efficient one.

Business model

This measure receives €38,000 funding from CIVITAS ECCENTRIC. This is a smaller part of the financing. The website is developed by the city of Stockholm in cooperation with the cities of Gothenburg and Malmö.

Find out more

www.miljofordon.se

Contact details

Anna Norberg
Environmental and Health Administration
City of Stockholm
Email: Anna.norberg@stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Master plan for developing electric vehicle charging in Stockholm

Summer 2019

© Eon

- Charging plan for EVs
- EV infrastructure
- Emission reduction

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

Location:	Stockholm, Sweden
Organisations involved:	City of Stockholm

What is the solution?

People driving electric vehicles (EVs) mainly charge their vehicles overnight at or near their homes. In addition, many company cars have access to charging facilities on site. However, craftsmen, delivery and taxi companies, and visitors to the city, also need access to daytime charging facilities. Moreover, not all people can charge their vehicles at home.

For this measure, the city will develop a charging Master Plan to oversee and complement the infrastructural development for EV charging in order to ensure that it is effectively meeting users' needs rather than just covering popular hotspots. The plan includes a publicly accessible dynamic map, which shows existing as well as planned charging sites. The map will help private companies interested in providing public charging to find suitable locations where these can be established. It will also be a tangible tool to convince more businesses and private citizens to choose EVs. Private utility companies have already shown interest in providing on-street fast charging infrastructure.

How does it work?

Several working groups and high-level round tables were set up to develop Stockholm's EV charging strategy to ensure it will effectively meet the needs of all drivers, including business users. The charging strategy is based on several pillars:

- Offering charging possibilities on city-owned parking facilities, both for short time use and with individual contracts for private car owners; renting their own parking lot for long-term from the city's parking company.
- Providing know-how and information about charging technology and installation requirements to private parking companies, shopping mall owners, private companies, housing companies and house owners.
- Provide spots for "charging streets", that is, clusters of 4-10 chargers in a row on strategically chosen streets to partners willing to finance and operate on-street chargers. The city does not operate on-street chargers.

With the aim to provide 0.1 public charging units per EV, and the number of EVs estimated at 15,000 by the year 2020, this would mean that the city will need 1,500 public charging units by 2020. The goal is to put 500 of these on public streets at about 50 locations with 10 charging opportunities per site.

A pre-study resulted in many possible locations for on-street charging. Results are provided on a publicly accessible dynamic map which shows existing as well as planned charging sites. Parties interested in setting up charging infrastructure can consult this map. The market parties can apply to get a five-year contract for one or several of these spots to set up and operate charging facilities there. The contract is awarded following a set of requirements that have been pre-defined. If the awarded parties do not manage to set up the charging infrastructure within six months the contract is cancelled and the spots can be applied for by another market party. In 2017, a little over 100 charging points were installed in 15 streets. The work is ongoing and more charging streets are to come. The aim is to grow with approx 150 units/year during the period 2018-2020.

Expected results

The long-term effect of this measure is an increase in private and corporate EVs as a result of good accessibility of charging infrastructure. This will result in a decrease of fossil fuel driven cars with the associated effect of less noise pollution, more efficient use of energy and less emissions. It will also make new areas available for residential use in city planning.

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Business model

This measure receives €113,000 from CIVITAS ECCENTRIC.

Find out more

Information about charging equipment and how to install in garages and parking grounds: fixaladdplats.se
Map over available spots for charging streets in Stockholm: http://194.71.132.77/utpekadeladdplatserkartan/

Contact details

Eva Sunnerstedt
Head of Clean Vehicles in Stockholm
City of Stockholm
Email: eva.sunnerstedt@stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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Promote the installation of electric vehicle charging in multifamily housing

Summer 2019

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- Charging facilities for private electric vehicles
- Technical guidelines and easy application
- Potential for huge reductions in CO_2

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm

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What is the solution?

Charging possibilities are essential for anyone who considers buying an electric vehicle (EV). For private citizens, overnight charging close to home has proven to be the number one choice. Hence, to increase the use of electric vehicles among citizens, it is important to ensure overnight charging possibilities in connection to people's homes. The aim of this measure is to provide interested citizens and housing associations with facts and practical advice in order to install charging facilities in multifamily houses. The measure thereby inspires these stakeholders with easily accessible know-how on how to organise, procure and install EV overnight charging in garages and parking areas. This will spark the installation of charging points in privately owned garages and parking areas in residential areas in the city of Stockholm.

How does it work?

Most citizens in the city of Stockholm live in multifamily houses and often rent a parking lot in connection to that, which is why this measure also focuses on rental parking spaces.

In this measure, the city of Stockholm has prepared information material on EV charging facilities which was presented in a series of workshops over the course of 2017 and 2018. It is also available online. The informational material includes checklists and step by step practical guides on how to install the facilities, how to apply for the government subsidy for local climate investments (Klimatklivet) and how to handle the administrative work around it. A short informative and thought-provoking film which presents key facts on installing charging facilities in multifamily houses and prompts interest was developed. The material also includes stories from houses already having installed chargers and the exhibition of charging equipment around Stockholm county. The seminars were offered to private households, owners of rental parking spaces and housing associations.

The activities raised great interest among the targeted stakeholders, with the first seven workshops attended by over 800 people. Housing associations and citizens can use the information material to get their tenants or their housing board interested in EVs, showing that it is neither complicated nor expensive to install a charging facility in the garage.

The measure has already strengthened the infrastructure needed to make EVs a realistic car choice for people living in multifamily houses. A follow-up survey after the first six seminars revealed that six months later the 200 respondents claimed to have started the process of installing over 1,000 charging units.

Expected results

For each EV that replaces a now existing (non-electric) passenger car in Stockholm, the benefits in terms emissions can be estimated at approximately two tonnes of reductions in CO_2 per year. If 2% of the cars owned by residents of multi-family homes in Stockholm would be replaced by electric cars, annual emissions would be reduced by approximately 5,400 tonnes of CO_2 and 17 tonnes of NOx gases.

Business model

This measure receives €166,000 from CIVITAS ECCENTRIC. It was conducted in cooperation with 27 municipalities in greater Stockholm region and also involved over 10 suppliers of charging equipment. Support was also provided from the Swedish Environmental Protection Authority and the concept is now being replicated by several other Swedish regions.

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Find out more

www.fixaladdplats.se

Contact details

Eva Sunnerstedt
Head of Clean Vehicles in Stockholm
City of Stockholm
Email: Eva.sunnerstedt@stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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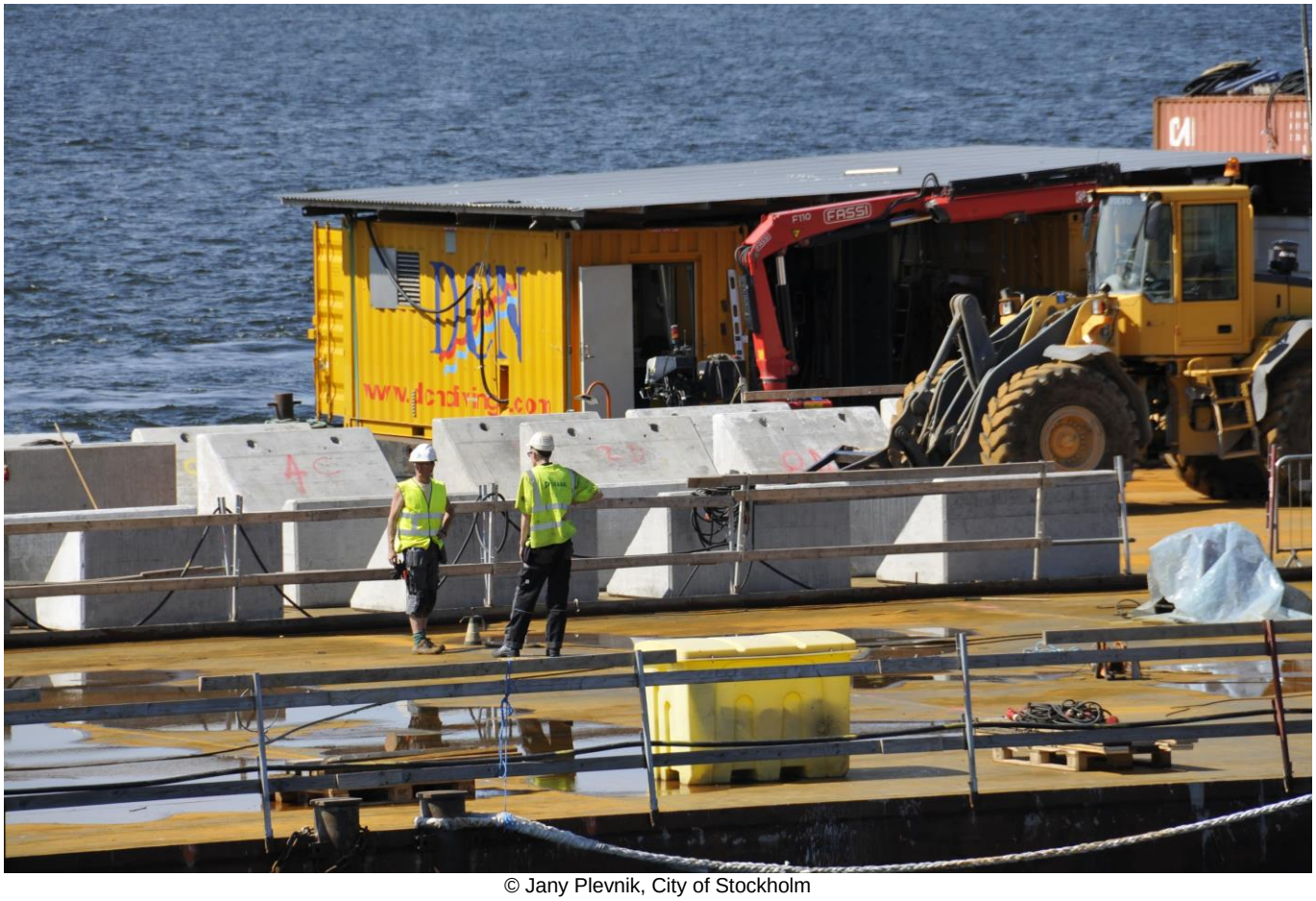
Consolidating municipal freight and excavated materials in Stockholm

Summer 2019



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- Using barges instead of trucks to transport construction waste
- Reducing delivery of goods by consolidation
- Less congested and polluted city

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm

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What is the solution?

This measure aims at reducing goods deliveries (number of vehicles and transport distances) and hence at reducing emissions and creating a more accessible and less congested city. It comprises two key actions. The first one is a pre-study to outline the potential to consolidate goods purchased by the city of Stockholm, which aims to increase knowledge about the steps required to implement consolidation of deliveries for municipal goods. The second action is to consolidate heavy mass from excavation projects using barges instead of trucks.

Transportation of heavy masses from the excavation on urban construction sites accounts for a large part of heavy vehicle road traffic in Stockholm and is likely to increase in the near future, as the city metro and sewer systems will be expanded. For this reason, the city of Stockholm is keen to test and evaluate the potential benefits of using barges on inland waterways and at sea to remove heavy mass from inner-city construction sites.

How does it work?

For the first action of this measure, a pre-study outlining the potential to consolidate goods purchased by the city of Stockholm was carried out. The pre-study outlines a variety of options and makes suggestions about the types of activities, product groups and steps required to realise consolidation. It serves as a basis for political decisions about the future consolidation of municipal goods in Stockholm, but its findings are relevant to other cities and a translated version of the report is available.

The second action tests and demonstrates the collection of heavy mass from an excavation in tunnelling and other construction sites using barges. The demonstration will result in an evaluation of noise impacts from loading uncrushed material to a barge in central Stockholm, as well as a cost-benefit analysis comparing transport by barge to transport by truck and the mapping of potential barge loading areas in the Stockholm region. These findings will inform the decision on whether this action can be upscaled and used for other construction sites as well.

Expected results

The pre-study contains detailed analysis and proposals concerning the consolidation of municipal goods, which decision-makers and other stakeholders can use to inform future policy and business decisions.

Positive results from the barge test will enable to rapidly scale-up the use of consolidation barges, and thereby improve safety and environmental performance of heavy mass transport in the city.

Business model

This measure receives €157,000 of funding from CIVITAS ECCENTRIC.

Contact details

Amanda Baumgartner
City of Stockholm, Traffic Department
Email: amanda.baumgartner@stockholm.se
Websites: http://www.stockholm.se/eccentric
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

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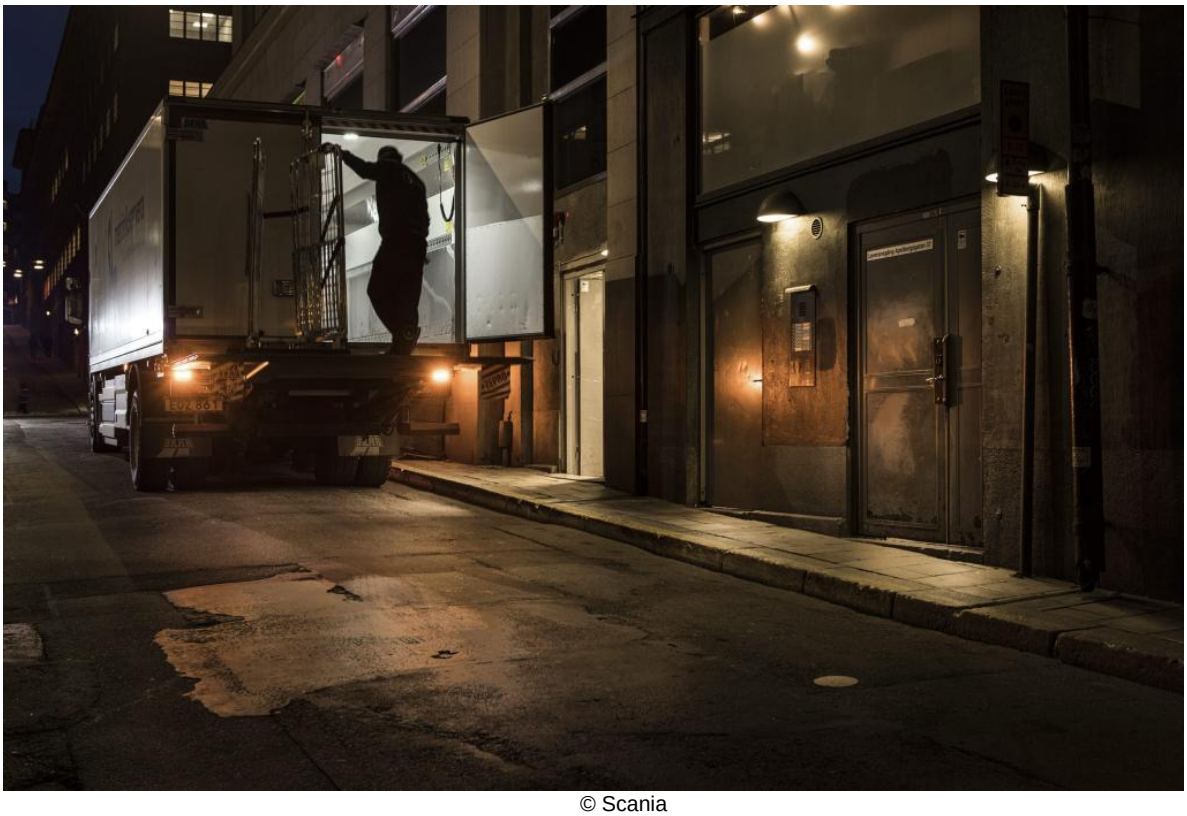
Night-time deliveries using clean and silent vehicles

Summer 2019



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- New delivery routes and scheme
- Clean heavy duty trucks (plug-in electric)
- Reducing traffic, emissions and noise

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

Location: Stockholm, Sweden

Organisations involved: City of Stockholm, Royal Institute of Technology

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What is the solution?

Night-time deliveries with electric vehicles (EVs) offer the opportunity to reduce traffic congestion in the daytime without causing a nuisance to citizens during night hours. The city of Stockholm's regulations currently ban heavy lorries between 22.00 and 6.00 due to noise, a regulation which could be adapted as a result of this measure.

Following a previous pilot project on night time deliveries, the city of Stockholm wants to expand the project with one plug-in electric truck. This measure aims to investigate the effects of goods delivery during night versus daytime and the implications and regulatory requirements of lifting the ban on night deliveries. Depending on the outcome, the measure could be upscaled to a city-wide night delivery scheme that includes delivery with silent heavy lorries. In the long term, this could reduce congestion and noise and improve transport efficiency.

How does it work?

This measure builds on the first off-peak delivery pilot project in the city of Stockholm, carried out between 2014 and 2016. The previous project investigated how the city's night ban for heavy lorries could be lifted using clean and silent vehicles to increase the capacity of existing infrastructure. The trial indicated positive results in transport efficiency and emissions. Morning congestion could be reduced and deliveries were more efficient at night time when streets were free.

To implement the new silent night-time delivery scheme, including the electric plug-in van, a dialogue procurement procedure was set up and the winning consortium consists of Scania, Havi logistics and McDonald's.

The consortium will test a silent electric plug-in hybrid vehicle for night deliveries to McDonald's restaurants in central Stockholm. Experiences from the previous off-peak pilot show that, in addition to silent vehicles, it is necessary to reduce noise while unloading the goods. Thus also measures like silent wheels on carriers etc. must be implemented.

Operation of the new night delivery scheme is scheduled to start in October 2018 and data collection on performance indicators such as delivery efficiency and noise will be performed during one year of service. Special emphasis will be given to noise issues since fear of noise ruining residents night sleep is one of the main reasons for the general ban on night deliveries in Stockholm.

The data collected during this new trial of night delivery with clean and silent vehicles will be used to support the preparation of a new regulatory framework for night transportation.

Expected results

The expected impacts of implementing this trial for night time deliveries includes more efficient transportation and handling of goods, improved work environments, and effectively addressing noise pollution - thereby making night deliveries possible without disturbing residents and others.

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Business model

This measure receives €340,000 in funding from CIVITAS ECCENTRIC and involves, in addition to the ECCENTRIC partners city of Stockholm and KTH, also the companies Scania and McDonalds.

Contact details

Robin Billsjö
City of Stockholm
Traffic Administration
Email: Robin.billsjo@stockholm.se
Living lab area in Stockholm: https://civitas.eu/eccentric/stockholm

Stockholms stad

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