

Finland to become a model country for sustainable transport by 2020

June 17 2014

Roads in Finland in 2020 will hum to the sound of low-emission vehicles running on renewable energy, electricity, hydrogen and sustainable biofuels. The share of public transport and car pooling in densely populated urban areas will increase. Mobility arranged through easy-to-use services will become a viable alternative to buying a private car.

VTT's TransSmart vision of a model country for sustainable [transport](#) throws the spotlight on efficiency – in vehicles, systems, and services. Transport will be a fusion of [sustainable energy sources](#), advanced technology, safety, high service levels, mobility alternatives and new ways of operating.

"Fine-tuning vehicles or developing renewable fuels will simply not be enough in the long run. The entire system needs revamping. You won't make the world a better place by filling Helsinki with [electric cars](#), for example. They take up just as much room as conventional cars running on petrol or diesel. The ways to achieve change will be through increasing the share of public transport, and rethinking mobility and logistics services to include the views of the people who need the services," VTT's Research Professor and TransSmart Programme Manager Nils-Olof Nylund says with emphasis.

"Smart transport solutions create more efficient travel- and logistics chains and an overview of the status of the transport system in real-time. The idea is that the travellers will be able to select several service options and to easily combine them into suitable travel chains: private car, on

foot, bicycle, bus, taxi, demand responsive transport, carpooling, car and transport joint use, tram, metro, train or aeroplane. This would lead to a reduced need for car ownership or for the construction of parking spaces and streets. The crux of the idea is to achieve an increase in the fluency, ease of use and accessibility of travel chains. Service accessibility also covers safe and trouble-free payment," says Senior Scientist Raine Hautala, leader of the TransSmart programme's Transport Services theme.

Rechargeable hybrid the new favourite

An increasing number of new cars in 2020 will run on [renewable energy](#). The growing share of new car sales taken up by electric cars will have reached 10–15%. Rechargeable hybrids will be a particular favourite.

Electrification of bus traffic has already begun, and by 2020 the estimate is for more than 100 electric buses in the Helsinki metropolitan area.

New plants producing sustainable biofuels have already come stream line in Finland.

A downward turn is now discernible in transport energy consumption. The national 2020 target for 20% biofuels in 2020 is met.

Changes in mobility bring business opportunities

DRIVE C2X is among the leading smart transport research projects, testing and developing new smart transport services based on data transfer between vehicles. The project, coordinated by Daimler, involves the participation of European research institutes alongside a number of European car manufacturers. The most significant input in the project is supplied by VTT.

The Smart Transport Corridor between Helsinki and St. Petersburg will also create new services: for passengers, private motorists and public transport. Development of the VEDIA Multi-Service concept, led by VTT and Vediafi Ltd, will enhance the fluency of traffic across the border between Finland and Russia, while improving transport safety and the travel experience. First to be introduced will be real-time road weather and driving conditions information service, an automatic system issuing bulletins and warnings on traffic disruption, a real-time traffic and congestion information service and a [public transport](#) information service.

One example of an ITS service offered by public authorities improving traffic safety is the eCall in-vehicle emergency call service, based on the European emergency number 112. VTT has been developing the eCall system in active collaboration with the European Commission, Member States, the industry, authorities, and other research institutes. The service will be introduced in EU Member States no later than 2017, when it will become compulsory for all new car and van models. In the event of a road accident, in-vehicle sensors detect the accident, the eCall system opens an emergency call from the vehicle to the nearest emergency response centre (ERC) and sends the minimum set of data including the vehicle's exact geographic location. After transmitting the minimum set of data, the in-vehicle system opens a voice connection between the vehicle and the emergency response centre.

Together towards the goal

The international market for intelligent transport devices has annual growth estimated at about 20%. New smart transport services also give rise to new business opportunities for Finnish enterprises. A current example is the 'Finnish Road Weather Excellence' project (Vaisala, Arctic Machine, Foreca, Teconer, VTT), which has demonstrated the sizeable extra market potential of high-level Finnish competence in road

weather and winter maintenance. Realising this potential requires our competence to embrace the packaging of devices and technical systems in a way that provides more comprehensive solutions for products and services.

"Smart transport is generating a lot of interest, but we need to wait a little before we see the scale on which profitable business begins to materialise for Finland. Companies will need to be capable of developing internationally competitive products and services," Key Account Manager Karri Rantasila points out.

Cooperation among all the key actors in road transport is essential if objectives are to be reached. To this end, the TransSmart spearhead programme, launched and coordinated by VTT, brings all the main players to the same table. The programme aims at a smooth, cost-efficient and environmentally friendly transport system. Participants include the Ministry of Transport and Communications, the Ministry of Employment and the Economy, the Ministry of Finance, the Ministry of the Environment, the administrative branch of the Ministry of Transport and Communications, as well as Tekes, the municipal sector, research institutes and numerous companies.

Provided by VTT Technical Research Centre of Finland

Citation: Finland to become a model country for sustainable transport by 2020 (2014, June 17) retrieved 27 April 2024 from <https://phys.org/news/2014-06-finland-country-sustainable.html>

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