



ELECTRONIC INSURING AND REGISTRATION OF MOTOR VEHICLES

Environmental benefits of the system reform 2014–2018

Collaborative commitment to sustainable development by the Federation of Finnish Financial Services (FFI), the Finnish Motor Insurers' Centre (LVK), and the Finnish Transport Safety Agency Trafi.

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1 New way to insure and register motor vehicles

A vehicle must have a valid motor liability insurance policy before it can be registered in Finland. The Finnish law currently requires that when a vehicle is purchased, the new owner or permanent keeper must take out statutory motor liability insurance and register the vehicle with Trafi. Practically all registration notifications contain information that affects the vehicle's insurance and is therefore already in the insurance policy.

While insurance companies already have online services that offer an easy way to take out insurance, registration has still required the car's new owner to make a visit to a registration office.

Starting in November 2015, it is possible to register and insure a vehicle simultaneously by using insurance companies' e-services that are available around the clock. This improves the accessibility of registration immensely, and removes the need to visit registration offices in person.

Registration notification no longer needs to include a paper certificate, either – instead, the transfer of ownership is verified with a digital certificate issued by Trafi. The certificate is handed from one owner to the next as the car changes owners. The owner or official holder of the vehicle can make changes to its registration details by verifying his/her identity.

Making e-services available as an alternative is a major improvement in the reform, and will benefit consumers and businesses alike. Electronic registration will make the process faster and easier for the customer, but the possibility of personal service will not be removed. Insurance providers, car dealerships, inspection sites and other similar locations authorised by Trafi will continue to receive and process registration notifications in the same way as before.

From the perspective of insurance companies and Trafi, combining insurance and registration will streamline processes and customer service. Because the new model makes entirely paper-free registration possible, the processing of registration notifications will speed up appreciably. The increased level of automation and smaller volume of paper documents – and related scanning, printing, and mailing processes – means the new model is also much more cost-efficient than the old one. Requiring fewer process guidelines also helps. All in all, the reform will bring a significant boost to productivity.

The financial sector has spearheaded the promotion and development of electronic services in Finland. Not looking to leave the forefront, the sector wants to co-operate in the promotion and implementation of the national information society strategy together with the government and the other sectors and industries. Co-operative effort can improve and advance the use of electronic services throughout entire service chains.

2 Commitment to sustainable development

The Federation of Finnish Financial Services (FFI), the Finnish Motor Insurers' Centre (LVK), and the Finnish Transport Safety Agency Trafi together made a commitment to sustainable development in spring 2015.

The aim of the commitment was to help develop the society to a more streamlined and uncomplicated direction by combining the processes of vehicle registration and insurance. With the commitment, the three parties seek to demonstrate how the new electronic way of vehicle registration will benefit the society by reducing the climate impact and costs of registration and improving customer service.

The commitment will hopefully also promote the adoption of the new registration method. More than 2.7 million registration notifications are made each year.

The commitment is connected to the Finnish Society's Commitment to Sustainable Development 2050. The progress of the commitment will be measured for three years through several indicators.

The Commitment 2050 website (<https://commitment2050.fi/>) includes summaries of all the sustainable development commitments and ideas made by Finnish companies, organisations and other operators.

3 The study

Sustainable development consulting company Natural Interest calculated the effects that switching to electronic vehicle registration and insurance would have on the carbon emissions. The main focus was on determining target reduction levels for different emission sources and for the entire registration process for the 2015–2018 time period. CO₂ emissions per single registration were established as the most significant indicator to monitor. Preliminary estimates indicated that the new operating model would reduce emissions by as much as 50 percent.

The calculation boundaries of the study were made in accordance with the international Greenhouse Gas Protocol or GHGP. The figures will be monitored annually. Because the systems that will be monitored are still under development, highly detailed analysis is not yet expedient. The calculations can, however, be expanded on in the future using the same framework that has now been established.

Natural Interest, FFI, LVK and Trafi jointly worked out the registration volumes for each geographical area, the related paper and traffic flows, and the operations carried out at insurance companies. A more detailed description on the calculation process was included in the study report by Natural Interest.

4 Carbon footprint calculation

Carbon footprint is currently the most popular meter of climate impact and widely used by governments, companies and individual persons alike. It is a tool to estimate the amount of greenhouse gas emissions generated by a product or an operation. Although there are also other sources and factors of environmental impacts than greenhouse gas emissions, it is still very useful to have data that can be easily interpreted and compared. The data is also objective and applicable by everyone, meaning that the same initial data leads to the same results anywhere and anytime.

Numbers that are easy to interpret and compare make it possible to identify relevant emission sources more easily. This, in turn, enables better focusing of environmental work, which can then lead to reduced emissions and costs.

Calculation in practice

In the case of the vehicle insurance and registration reform, the carbon footprint was calculated using the web-based Footprinter software. First, comparable registration process structures were created for the present and upcoming registration models. This made it possible to monitor and analyse the different parts of the process and their overall effect on the process. As usage statistics and estimates became more accurate, the calculations could be easily updated.

Functions included in the calculations

The carbon footprint calculation included emissions that the project participants can directly affect with their decisions. These were:

- Travel: 2,800,000 trips in 2014, approx. 1,800,000 in 2018.
- Amount of office work required: 5 minutes per registration in the old system, 2 minutes in the new.
- Data transfer in the use of electronic service.
- Switch from paper to electronic documents: handling of paper documents, saving of electronic documents (vehicle inspection documents not included).

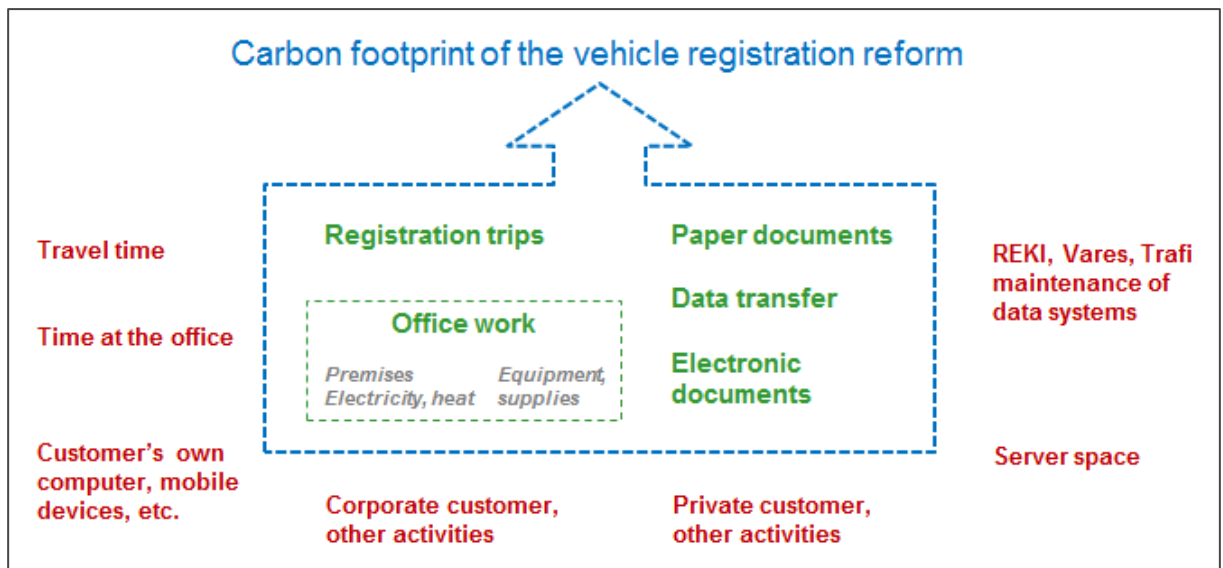


Figure 1. Data selected for the CO2 calculation (Natural Interest, 2015).

The aim of the registration reform was to combine vehicle insurance and registration into one customer-oriented and cost-efficient service. The idea of customer-oriented service was taken into account in the calculations so that the analysis focused on entire service chains instead of just the operations at the offices or information systems.

Some service chain elements were deemed small in overall effect, not directly related to the registration service, or difficult to obtain information from, and therefore left out of the calculation. These included customers' time spent on using the service and related travel, customers' devices such as computers or mobile phones, the required administration tasks of data systems and user interfaces, and physical requirements of the required servers.

Basic data for calculation

Current numbers of registration events and Trafi's preliminary estimate of user numbers are listed in the table below.

Registration event type	No. of events in 2014	E-service in 2014	Goal for 2018
Change of owner	1,298,286	0 %	55 %
Commissioning	605,962	58 %	80 %
Decommissioning	461,836	62 %	80 %
First-time registration	216,035	0 %	30 %
Changes in holder data	50,549	0 %	50 %
Notification of transfer	48,389	0 %	90 %
Total	2,700,000		60 %

Table 1. Number of registration events.

Travel distances were calculated with a model comparing the region's land area to the number of available registration offices, and the result was weighed with the number of registrations in the area in question. This resulted in the average registration trip distance of 23.2 kilometres. The region-specific differences are illustrated in the graph below.

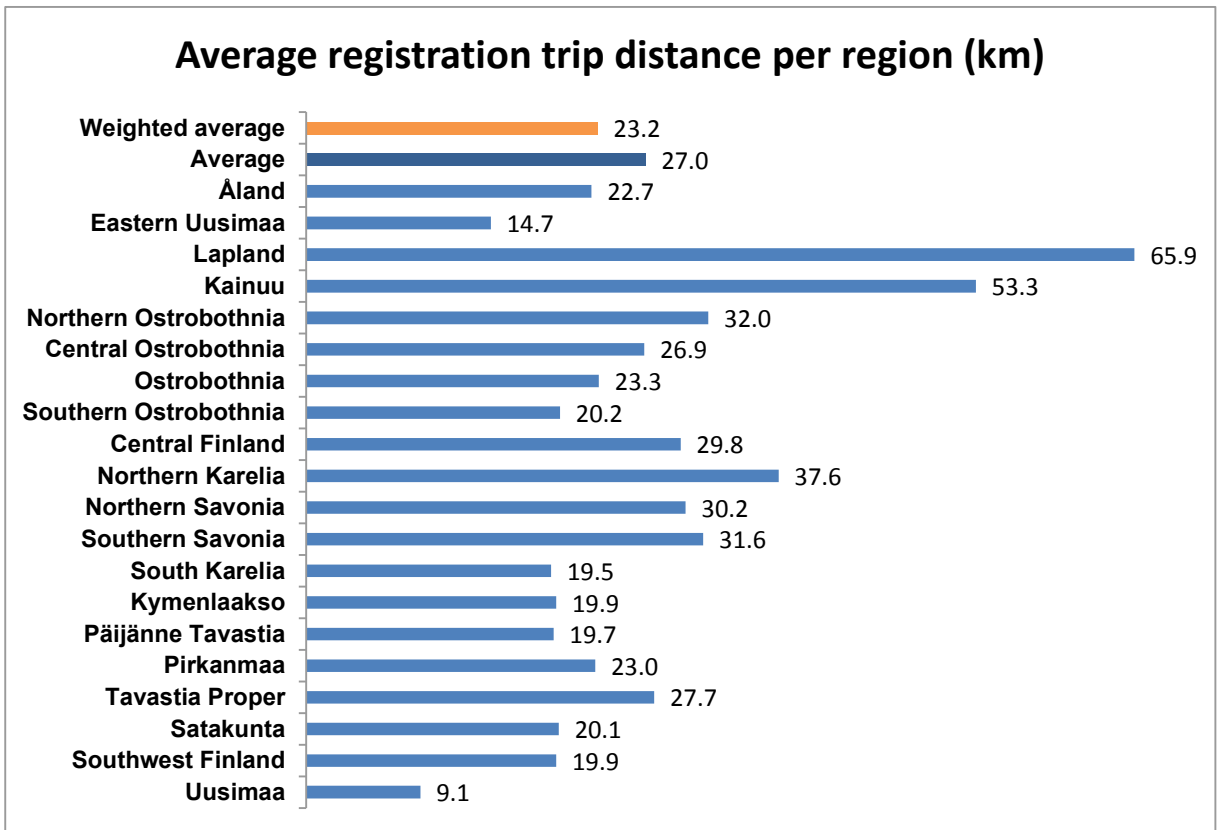


Figure 2. Registration distances per region.

Information sources and emission coefficients used in the calculations

Part of process	Required information	Collected data	Source
registration trip (travel to office)	emissions per kilometre	kg CO ₂ e per km, average	VTT Lipasto 2015
	distance	kilometres	Trafi 2013
	travel time	Time	Trafi 2013
amount of work	emissions	kg CO ₂ e per second	NI 2010
	registration event types	number of events per event type	Trafi
	time	minutes per event type	Trafi 2013
	e-service usage proportion	percentage per event type	Trafi 2014/15
documents	emissions per document	kg CO ₂ e per document	NI 2010
	paper vs electronic documents	number of documents	Trafi 2014
	e-service usage proportion	percentage per event type	Trafi 2014

Table 2. Information sources and emission coefficients.

Emission components were mainly the same as the ones used in the “Environmentally-friendly Electronic Invoice” report by the FFI in 2010.¹ For example “office work” includes all emissions related to work carried out in offices, evaluated in time units.

Emission component	Emissions (grams, CO ₂ e)
office work	1 g / second
printing paper	9.93 g / A4 sheet
envelopes	18.16 g / envelope
mailing	21.3 g / letter
archiving	35.3 g / letter
car use	167 g / km
electronic documents (archiving)	1 g / document

Table 3. Emission components.

¹ http://www.fkl.fi/en/material/publications/Publications/Environmentally_friendly_electronic_invoice.pdf

5 Calculation results

The calculations revealed that emissions in the old system were 3.5kg CO₂-equivalent per registration. If the registration system is reformed to the planned extent, the estimated emissions will be cut by more than half, to 1.7kg CO₂e (52% reduction). The current emissions, approximately 12,150 tonnes of CO₂, correspond to roughly 70,000,000 kilometres driven in a personal car – the same as driving *50,000 times* across Finland. The reform is not just about emissions, however; more convenient service will also save time, improve resource efficiency and advance the digitalisation of services

Carbon footprint

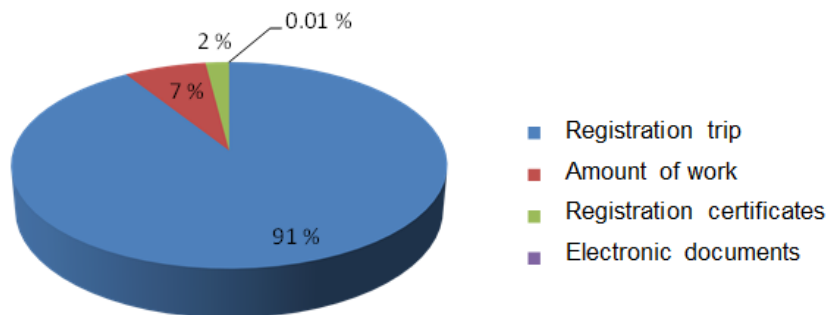


Figure 3. The makeup of the carbon footprint.

Travelling to registration offices is by far the largest source of emissions in the process. Therefore, the greatest ecological benefit in the reform can be gained when customers switch from travelling to using electronic services. If an additional 20% can be cut from the travel distances, e.g. by improving the service network, the carbon footprint of the registration process could drop even further to 1.4kg CO₂.

The only area in which emissions will increase after the reform are electronic documents, as a logical result of digitalisation. Although the amount is vanishingly small when compared to the entire registration process, its significance will increase in the future, when electronic services become more popular. This is another area where efficiency can materialise in substantial benefits for example through energy savings.

Emission reductions with no additional measures taken:

Emissions (tonnes of CO ₂ e)	Current	Goal	Change	Change, %
Travelling	11106	7085	4021	-36%
Work	863	355	508	-59%
Registration certificates	180	116	64	-35%
Electronic documents	0.7	2.7	-2	285%
Total	12150	7559	4591	-38%
Carbon footprint of single registration event	3.5 kg CO ₂ e	1.7 kg CO ₂ e		-52%

Table 4. Emission reductions.

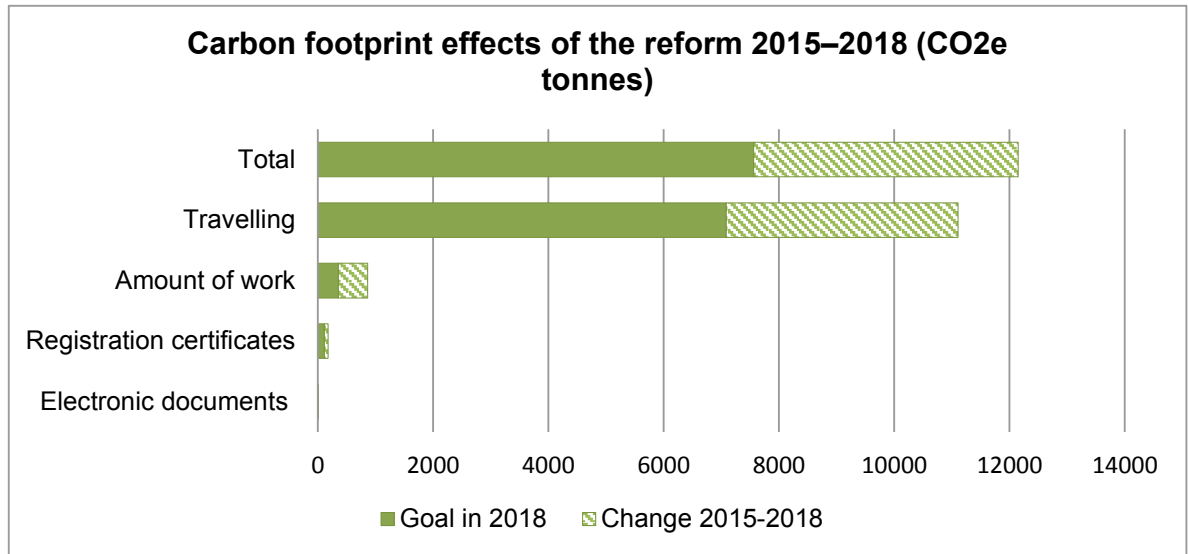


Figure 4. Carbon footprint of the vehicle registration reform – current (2015) and goal (2018).

In addition to the transportation, a significant amount of emissions are generated by office work. This can be improved in each registration office with measures that increase energy saving and environmental efficiency.

6 Contact information

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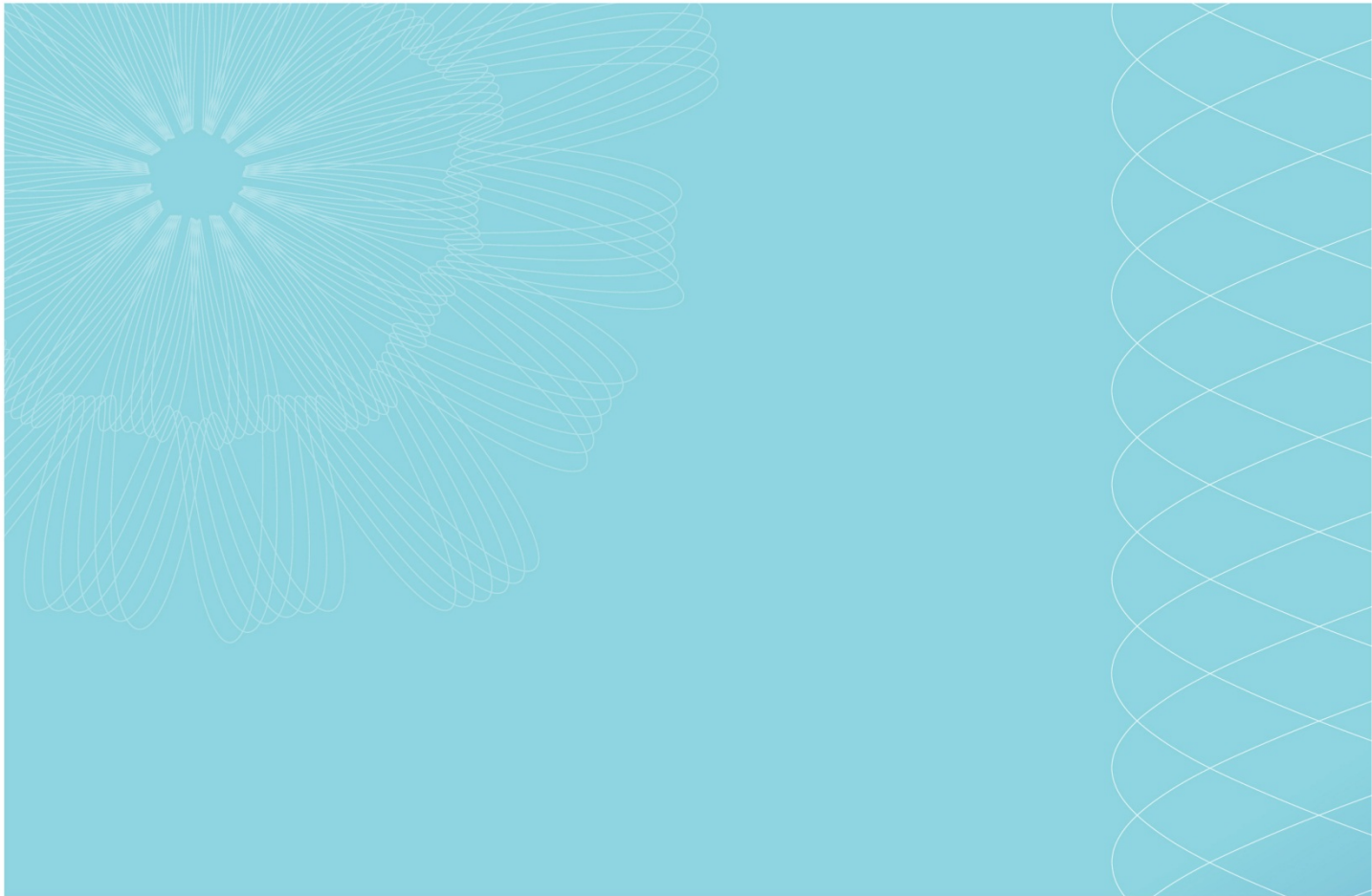
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