



Ole esimeste seas!
TEEL TULEVIKKU



ELMO - Estonian Electromobility programme

Short overview

Sigrid Rajalo

Ministry of Economic Affairs and Communications
Estonia

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Background for electromobility programme

Mid 2010 - Gov. initiates CO2 reduction project calls to
use excess AAUs (CO2 credits)

Various projects proposed by ministries

AAU sales team matches buyers and projects

Buildings

Energy production

Public
transportation

Private
transportation,
electric mobility

Estonian Green Transportation Plan

Goal

10% of energy consumption in transportation from renewable sources

Measures

- **Blending biofuels**
5-7% of liquid fuels from renewables by 2015
- **Green Public transportation**
50% of public transportation to 100% biofuels/biogas by 2020
- **Electromobility**
1% of transport energy consumption from renewable electricity by 2020
- **Eco-driving awareness**
Reduction of fuel consumption by 10%

Goals of the ELMO program

Long term vision

Estonian private transportation is green and economically sustainable

Long term goals

- Reduce emissions of the private transportation
- Raise the awareness about green transportation alternatives with focus on electric vehicles (EV)

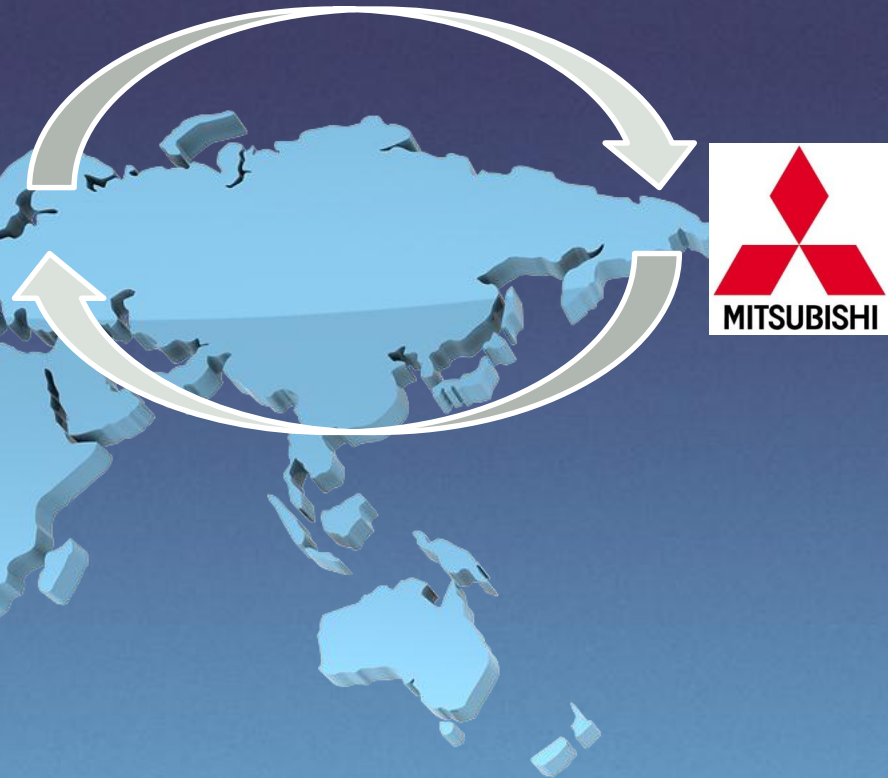
Short term goals

- Remove the barriers from the electric vehicle market uptake in Estonia

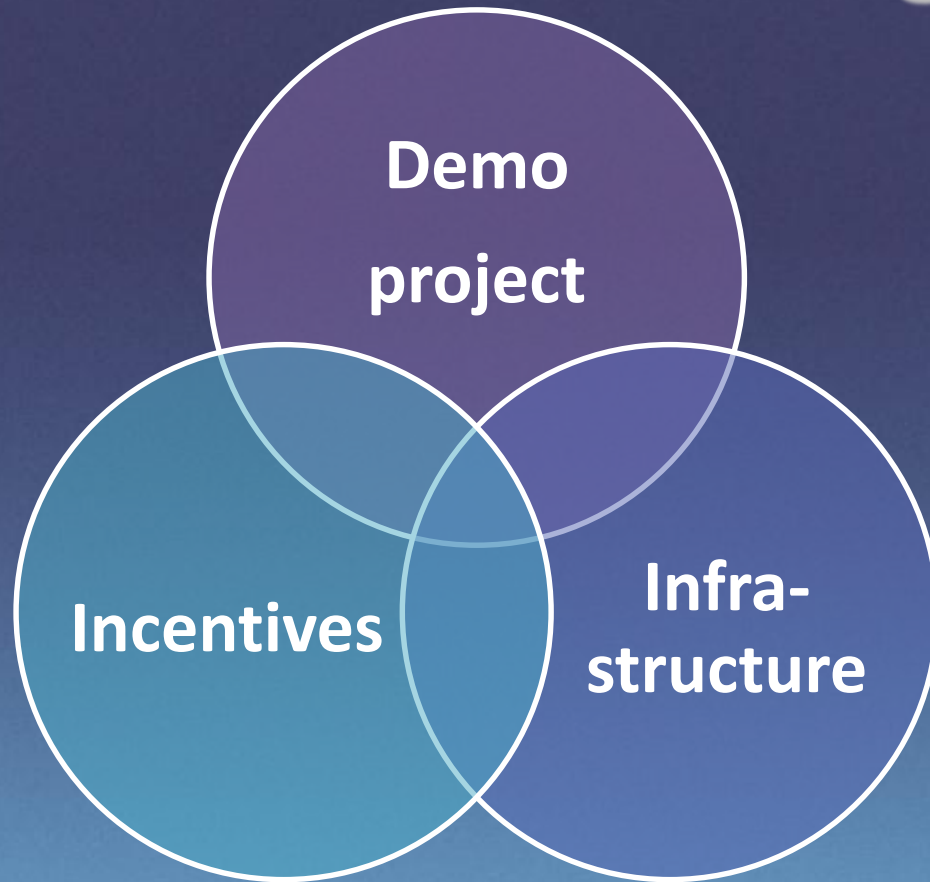
Our partner in EV program: Mitsubishi Corporation

Global emission trade
to support the eco-
innovation

Estonia sells
CO2 emission quota to
Mitsubishi Corp to
finance electromobility
programme



Fitting the pieces together for the future of electric cars



1. DEMO PROJECT

507 x

FOR SOCIAL WORKERS
AROUND ESTONIA



Mitsubishi iMievs in action



Photos: Bianca Mikovitš, Maaleht

2. INCENTIVES

-50%



Max 18 000 EUR per car,

No brand restrictions, for private and commercial buyers,
until Nov. 2014

+ 1000 EUR for home charger



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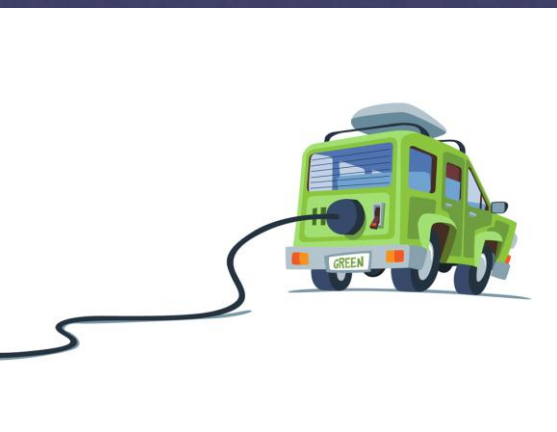
Green certificates

- **With each grant comes the obligation to use only renewable energy in your electric car for 5 years**
- This will be ensured by using green certificates (certificates of origin) green certificates are for calculating the usage of renewable energy in transportation.
- EV owner has to report the milage annually to KredEx and submit the equal amount of green certificates

3. FAST CHARGING INFRASTRUCTURE



The single biggest problem of EVs



The range

Without countrywide open infrastructure people can drive max 50km from their home.

Why ultra fast quick charging?



Estonian quick charger network

Nobody wants to wait hours to charge a car

Less locations → less costs, less problems

More cars per charger per day than any other solution

163 quick chargers



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Innovations in execution

1. Government procures full infrastructure solution at once

- **Assets:** chargers and operating system
- **Services for 5 years:** maintenance, business, customer support
- **Single operator system**

2. Government negotiates locations and high power connections at once and centrally

- Easier to plan and execute

The winning solution

Power and productivity
for a better world™



NOW!
INNOVATIONS

Consortium of world class
infrastructure solutions, services and
innovative mobile business software
platform developed in Estonia.



Operating model

Services

Private operator, selected by KredEx for 5 years

Charger
control and
maintenance

Business
services

Customer
support

Security
services

Asset
management

KredEx selects private operator to run the charging network for 5 years.
Operator will receive a service fee for the operation. No profit from energy sales during initial 5 years.

Assets

Owned by the government agency **KredEx**

Quick
chargers

Network
management
system

Locations for
chargers

High power
grid
connections

Intellectual
property

How to measure the impact?

General considerations

- **There is no easy and fast progress in consumer behaviour!**
- **The programme spill-over effects** (country image, foreign investment, R&D competences growth, policy design competences)
- **Oil price is still a significant factor in the success of the green car policies** (cost of the alternatives)

What can be measured?

- CO2 intensity of the car pool
- Sales trends of eco-vehicles
- Actual CO2 reductions by electric vehicles
- Awareness and perceptions towards green transportation

Estonia as a role model

- We are supporting the early adopters, **creating a market demand**
- We provide **large scale demonstration** of EVs
- Estonia made a bold choice to build up **ultra fast charging network**
- Single operator single network management system – **new business model test**, possible exit through privatization in 10 years
- Flexible and cost-effective test-bed

Lessons learned / challenges

- Tight time-schedule
- Complicated procurement procedures
- Need for high technical capability of the procurer
- Cooperation, motivation, constant feedback
- Need for continuous state subsidy (market interest and risk tolerance lower than expected)
- Mixed public opinion about EVs: lot of discussion about EVs in cold climate, range/price seen as main problem

Recent developments – car rental

- The idea is to offer an easy and comfortable way to use an electric car for short trips. One needs to pay for the time using the car.
- The goal of ELMO Rental is to make using electric cars more popular and provide an opportunity for everyone to try driving an electric car. To disseminate the “feeling” of driving and EV
- In order to use ELMO Rental one must register as a user. Later only mobile phone is needed for renting a car.
- Public testing of the service started in July 2013

Thank you!

www.elmo.ee