

ESTONIAN E-MOBILITY PROGRAM (ELMO)	
<b>Overview / summary of the initiative</b>	
<b>Title:</b> Estonian e-mobility programme (ELMO)	
<b>Country:</b> Estonia	
<b>Thematic area:</b> Climate Change	
<b>Objective(s):</b> the mission is to increase the share of renewable energy in the transport sector to 10% of overall consumption. The objectives are to promote and encourage the use of electric vehicles (EVs) in the country through EV purchase schemes, establishing the charging infrastructure, achieve better city environment, energy efficiency and fuel independence. <sup>1</sup>	
<b>Timeline:</b> 2011-2014 <sup>2</sup> (the discussion on the program extension is in process)	
<b>Scale of the initiative</b> (resource/budget indication): EUR 77 million, with the main source being sale of 10 mln AAUs	
<b>Scope of the initiative</b> – knowledge creation and application Directly: analysis of the use of battery-powered cars and the charging network (Tallinn University of Technology). Indirectly: creates re-conditions for the electro-mobility R&D know-how in Estonia <sup>3</sup>	
<b>Source of funding</b> (public/private/public-private): Public (national/regional/local) funding.	
<b>Granularity of the initiative</b> (initiative, policy approach): Initiative	
<b>Source</b> (webpage): <a href="http://elmo.ee/home/">http://elmo.ee/home/</a> , <a href="http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf">http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf</a> , <a href="https://trimis.ec.europa.eu/programme/electric-mobility-programme-estonia#tab-funding">https://trimis.ec.europa.eu/programme/electric-mobility-programme-estonia#tab-funding</a>	
<b>Brief description of the initiative:</b> In 2011 Estonia launched an ambitious, nationwide e-mobility program to promote the use of electric vehicles (EVs) in the country. The programme involved making available grants for citizens to buy EVs; awareness-raising campaigns; an EV car-sharing project; and providing EVs for public social workers. The programme comprises three main steps <sup>4</sup> : <ul style="list-style-type: none"> <li>• Ministry of Social Affairs purchased 507 electric cars were purchased to start building up an electric car pool.</li> <li>• Ministry of Economic Affairs and Communications developed a support system promoting purchase of EVs</li> <li>• establishing the national-wide fast-charging network, with additional instalment of ordinary charging points</li> </ul>	
<b>I: Background, origin, mission and ambition</b>	
<b>Ia: Origin</b> Estonian government is committed to increase the share of renewable energy in transport sector up to 10% of overall consumption. As a part of its national transport development plan, e-mobility is considered to be a possible measure to achieve that goal.	
<b>Ib: Initiator:</b> Estonian government.	
<b>Ic: Mission and ambition</b> The mission is to decrease GHG emissions from the transport sector in the country, increasing the share of renewables up to 10% while achieving better city environment, energy efficiency and fuel independence. The ambition includes creating the world's first complete EV charging infrastructure with the emphasis on the largest fast-charging technologies (165 CHAdeMO-standard fast chargers), increase of EV use, and providing the best combination of hardware, software and services available <sup>5</sup> .	
<b>Id: Decision making process</b>	
<b>Ie: Linkage to other governance levels</b> There is a clear linkage of the mission and the objectives to the national targets of GHG emissions reduction, as well as on to the 2020 targets for climate change actions.	
<b>If: Geographical scope</b> The program's development was implemented on the national-wide level, with whole territory of Estonia being the geographical scope. That included both incentives application (people and companies from all locations in the country could apply for participation), and physical implementation – charging infrastructure covered all roads with dense traffic with the distance 40-60 km ( locations for quick charging stations, e.g. petrol stations, cafes, shops, etc.) All settlements over 5000 inhabitants had to be covered <sup>6</sup> .	

<sup>1</sup><http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf>

<sup>2</sup><http://elmo.ee/about/>

<sup>3</sup><http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf>

<sup>4</sup><https://trimis.ec.europa.eu/programme/electric-mobility-programme-estonia#tab-outline>

<sup>5</sup><http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf>

<sup>6</sup><http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf> and <http://elmo.ee/about/>

<p><b>Ig: Time span</b> The EV subsidies roll-out (participants application) and charging infrastructure developing: 2011-2014. Subsidized EV-rental – 2011-2017. Charging points program participation – not limited. There is a going on discussion on the program extension<sup>7</sup>.</p>
<p><b>II: Formation</b></p>
<p><b>Ila: Driving forces</b> Climate change challenges and the targets set by the EU and the country as for GHG reduction (indicated in Paris agreement submissions, Climate Package 2020, and national policies) have become the driving force for the programme initiation and investments.</p>
<p><b>Ilb: Approach:</b> Top down</p>
<p><b>Ilc: Citizen involvement</b> An information campaign had been started together with the program launch in 2011 to communicate the benefits of EV and details of the program.</p>
<p><b>III: Technical and political feasibility</b></p>
<p><b>IIla: Technical feasibility assessment</b> Technical feasibility was estimated for the charging infrastructure based on the CHAdeMO-standards. Technical effects are being assessed based on the statistics of the EV purchased within the program, as well as statistics of use of charging facilities. Based on number of charging sessions and the energy consumed the 'clean energy driving' distance and the gasoline use reduction is calculated. As the electricity used is not guaranteed to be from green sources, additional 'green certificates' allowance is assigned to EV subsidised, based on which some GHG-saving calculations are performed<sup>8</sup>.</p>
<p><b>IIlb: Ex ante technical and risk assessment</b> KredEx, the company managing the program, was entitled to procure a turnkey the technical solution, based on a tender with consideration of the suggestions given by the participants.<sup>9</sup></p>
<p><b>IIlc: Success factors</b> The following factors were shown to have positive effect within the program<sup>10</sup>:</p> <ul style="list-style-type: none"> <li>- Financial incentives for both individuals and companies (lump sum payments for purchase, subsidies for a home charger set up, rental subsidies)</li> <li>- Uniform payment system using mobile phone or authorisation card, and flexible contracts for car rental.</li> <li>- Fast charging infrastructure facilitating EV use through decreasing 'range anxiety'</li> </ul>
<p><b>IIId: Incentives</b></p> <ul style="list-style-type: none"> <li>- Charging network development: 167 CHAdeMO-standard fast chargers (102 quick chargers are in towns and 65 by roads covering the entire country). Additionally, ordinary chargers installed at the premises of all local governments for charging during working hours.</li> <li>- 507 Mitsubishi i-MiEV electric cars purchased by the government to social at over 200 Estonian municipalities</li> <li>- Lump sum subsidies for all-electric cars (in total 657 grants approved): Private persons and companies not-eligible for VAT deductions: 50% of the car price with VAT, maximum €18 000 per car; Companies eligible for VAT deductions: 35% of the car price with VAT, maximum €18 000 per car.</li> <li>- support of €1,000 euros for a set-up of a charging system at home</li> <li>- Launching the single operation system for the charge payments (mobile payment and authorization cards)</li> <li>- EV rental subsidies (€6 first hour, €3 further hours)<sup>11</sup></li> </ul>
<p><b>IIle: Political and societal assessment</b> The head of the electro mobility program for Estonia, Mr. Jarmo Tuisk, commented that the EV roll out was impeded by the underdeveloped charging infrastructure and consequent 'range anxiety' of the drivers, which the programme was aimed to decrease. Barriers identified included high own costs of an EV purchase even with a subsidy, perceived uncertainty of the EV behaviour in cold climate, and still holding range anxiety. <sup>12</sup></p>
<p><b>IIIf: Interim political and societal assessment</b></p>
<p><b>IIlg: Financial risk assessment</b> It was not made in a systematic way</p>
<p><b>IV: Governance: organisation, management and coordination</b></p>

<sup>7</sup> <http://elmo.ee/about/>

<sup>8</sup> <http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf> and <http://elmo.ee/about/>

<sup>9</sup> <http://elmo.ee/about/>

<sup>10</sup> <http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf>

<sup>11</sup> <https://trimis.ec.europa.eu/programme/electric-mobility-programme-estonia#tab-outline>

<http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf>

<sup>12</sup> <http://estonianworld.com/technology/estonia-becomes-the-first-in-the-world-to-open-a-nationwide-electric-vehicle-fast-charging-network/> and <http://www.locsee.eu/uploads/documents/good%20practices/EE1%20-%20Estonian%20electro-mobility%20programme.pdf>

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<p><b>IVa: Governance</b></p> <p>The government entitled the financing and program management agency KredEx (established by the government national foundation) both to create the support schemes and to procure a turnkey technical solution from private providers. KredEx was responsible for the successful implementation of the program.<sup>13</sup></p>
<p><b>IVb: Progress monitoring</b></p> <p>The progress was monitored with gathering the statistics on EV purchase grants and charges from the constructed infrastructure.<sup>14</sup></p>
<p><b>IVc: Public-private involvement</b></p> <p>The governance was a public matter, the private partners were involved for provision of technical solutions (infrastructure development and construction, ICT solutions) based on tenders.</p>
<p><b>IVd: Communication and dissemination</b></p> <p>Communication of the programme and dissemination of the EV transport solutions were decided to achieve with the information campaign, which included outdoor advertisements, banner advertisement in the Internet, and advertising clips in the radio and television. Dissemination was incentivised also financially, and supported by the opening the EV market to a wider range of EV. <sup>15</sup></p>
<p><b>V: Resources and budget needs/availability</b></p>
<p><b>Va: Scale:</b> 77 mln euro in total, according to the EC TRIMIS<sup>16</sup></p>
<p><b>Vb: Funding sources</b></p> <p>The sources of funding are governmental. The main source is the sale of 10 million AAUs to Mitsubishi Corporation (assigned amount units within Kyoto Protocol for trading period 2011-2014).</p>
<p><b>Vc: Allocation of the budget</b></p> <p>Not clear. According to some sources, 12 mln euro were allocated to the development and maintenance of the charging infrastructure.<sup>17</sup></p>
<p><b>VI: Policy mix and integral ('holistic') use to deploy mission-oriented R&amp;I-initiatives</b></p>
<p><b>VIa: Policy mix</b></p> <p>Financial incentives to the consumers have become the main policy instrument.</p>
<p><b>VIb: Engagement of citizens</b></p>
<p><b>VII: Embeddedness of and connectivity with related initiatives (regional, national, supranational, global)</b></p>
<p><b>VIIa: Relationships/links/synergies to similar initiatives elsewhere</b></p> <p>An important element of the initiative was the cooperation with Mitsubishi that was based on the delivery of Kyoto credits to Mitsubishi that in turn delivered 507 Mitsubishi electric cars and an extensive charging network reaching Estonia. Estonia received know-how and Mitsubishi entered a new potential market<sup>18</sup>.</p>
<p><b>VIIb: Links to UN Sustainable Development Goals</b></p> <p>The program is relevant for achieving SD13 (Climate action), SD 11 (sustainable cities and communities), and SD12 (ensuring sustainable consumption patterns) through the aimed reduction of GHG emission by consumers in transport sector across the country, as well as SDG9 through building resilient infrastructure and fostering innovations.</p>
<p><b>VIII: SWOT analysis</b></p>
<p><b>VIIIa: Strengths</b></p> <p>Financial resources for the program implementation derived from the relevant to the topic sources (AAU sale), an overall transparent financial scheme. One of the main pathways to achieve the objective was based on the indicated from the barriers (underdeveloped infrastructure). Inclusion of the ICT solutions enhancing interface.</p>
<p><b>VIIIb: Weaknesses</b></p> <p>Minor attention to the stakeholder participation and less than needed attention to the social sciences perspectives in incentives construct (psychological and sociological)</p>
<p><b>VIIIc: Opportunities</b></p> <p>The program states the ground for the EV use increase due to established infrastructure (including establishing the charging infrastructure market and therefore its further development), due to expanding the EV market in the country (more producers and models are now present, marketed and therefore attracting consumers attention), as well as due to overall decrease of 'EV-anxieties' and improving the image of e-mobility.</p>
<p><b>VIII d: Threats</b></p> <p>The future of the program is at the moment uncertain due to institutional turmoil with its extension. One possibility being considered is the privatisation of the nationwide charging network.</p>
<p><b>VIIIe: Lessons learned</b></p> <p>Achieving the goals benefits from measures and tracks that tackle the main (perceived) barriers.</p>

<sup>13</sup> <http://elmo.ee/about/>

<sup>14</sup> [ibid](#)

<sup>15</sup> <http://www.eltis.org/discover/case-studies/elmo-estonias-innovative-national-quick-charging-ev-network> and <http://elmo.ee/about/>

<sup>16</sup> <https://trimis.ec.europa.eu/programme/electric-mobility-programme-estonia#tab-outline>

<sup>17</sup> <http://www.eltis.org/discover/case-studies/elmo-estonias-innovative-national-quick-charging-ev-network>

<sup>18</sup> <https://www.valitsus.ee/en/news/prime-minister-roivas-we-are-interested-continuing-our-cooperation-mitsubishi>

Financial transparency is important. It is necessary to address psychological and sociological factors.