

Beyond Energy Action Strategies



D.3.1.c – Business Plan for Promotion of Use of Electrical vehicles in Zemgale region, Latvia

Title of the project: Promotion of Use Electrical vehicles

Location: Zemgale region, Latvia



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Contents

1	Summary of the Project/Project at a Glance.....	3
2	Details of the Proposed Project.....	3
3	Internal aspects	4
4	External environment.....	4
5	Market Potential	5
6	Risk analysis.....	6
7	Financial Analysis.....	6
7.1	Cost.....	6
7.2	Income.....	6
7.3	Feasibility assessment.....	7
7.4	Sensitivity analysis.....	7
8	Implementation roadmap	8
9	Conclusion	8

1 Summary of the Project/Project at a Glance

Use of electric vehicles and their infrastructure for fast charging (AC and DC charging) is not enough developed in Latvia, there is still insufficient knowledge about electric vehicles. There is also a great skepticism and prejudices against electric cars. In the planning documents of municipalities of Zemgale region municipalities have not planned infrastructure establishment for public charging of electric vehicles. In accordance with SEAP of Zemgale region - by facilitating the use of electric vehicles in Zemgale region, car pooling and use of bicycles it would be possible to reduce GHG emissions by 5% or 3684 tonnes. The target group of promotion of use of electric vehicles and instalment of infrastructure of electric-fuelled vehicles will be mainly municipal specialists and decision makers, also private businesses.

The promotion of use of electric vehicles will be done in Zemgale region municipalities.

The objective - to increase the number of electric cars in Zemgale region and to facilitate the understanding on the necessity for the infrastructure for electric vehicles charging.

As one of the barriers for introduction of electric vehicles at larger scale is their almost double pricing in comparison with the conventional cars, it planned to use support from the national programmes if and where possible.

2 Details of the Proposed Project

Promotion of electric vehicles and their charging infrastructure - ZREA will focus on 5 municipalities, which are ZREA members: Jelgava city, Jekabpils city, Ozolnieku county, Bauska county and Auce county. In total in the 5 municipalities are approximately 134 000 inhabitants.

(In Latvia there are 719 491 transport units (passenger cars, freight cars and buses), at the end of 2014 only 200 of them were fuelled by electricity.)

- 1) Informative campaign on the benefits of using electric vehicles and their charging equipment and on possibilities of installation of charging stations, the national support policy and national / EU support programs for installation of charging stations and purchase of electric vehicles. Informative campaign in the form of seminars unified with demonstrating campaigns of electric vehicles and its charging equipment, for instance, "marathon of electric vehicles"

Informative campaign: 4-5 workshops/seminars at different locations

- 2) Workgroup meetings (1-3) with involved stakeholders to decide on form, content and schedule of informative campaigns.
- 3) Consultations and assistance and in preparation of project applications for national calls supporting purchase of electric vehicles
- 4) Within BEAST project planned time frame for implementation of this activity/project is 3 years from 2014 to 2017. Estimated costs for planned workgroup meetings (at least 2)

informative campaign and assistance in preparation of project applications: 3000 EUR. Assistance in preparation of project applications has been provided already in 2014, which has resulted in purchase of 2 electric vehicles - triggered investment - 70 000 EUR. This is planned to be continued in 2015-2016 as soon as there is EU or national support programme opened for it.

3 Internal aspects

Strengths

- **Clean energy** -. use of electric vehicles can be strengthened by green thinking - people choosing them to support green thinking and green solutions.
- **Political support for green transport and support programmes** - There has been a national support programme in Latvia for purchase of electric vehicles and their charging infrastructure in 2014 and it is likely that new programmes will still be available in the years to come, both for electric vehicles and their infrastructure.
- **Each purchased EV builds trust in them** - Pilot purchases of electric vehicles, dissemination of the good experience - each purchased EV builds trust in them - the more positive experiences in the neighbourhood have been actually seen, the higher is the trust into this technology. The more positive experiences have been disseminated, the higher is the trust into this technology.

Weaknesses

- **Low purchase capacity** - Due to relatively high prices of electric vehicles they are considered as experimental luxury commodity, as on average high speed electric vehicle costs about by 20-30% more than conventional vehicle of the same type. Even if exploitation of electric vehicle is cheaper, the start capital/ necessary investment is quite high both for private persons and for companies and municipalities. Only large companies with specific driving habits may allow for such investments. Also available amount of co-financing offered nationally in 2014 was available for legal persons and did not foster at a notable rate the purchase of electric cars. Speaking of installment of charging stations, costs are relatively high for fast charging stations, requiring large investments, what majority are reluctant to pay (both companies and municipalities), even with state support. Due to novelty of electric vehicles and the charging stations and their high price / installation costs, companies and municipalities are still reluctant to purchase and use them.
- **Insufficient knowledge on electric vehicles and their charging** - General public lacks knowledge and correct understanding on electric vehicles and their charging, there is quite high skepticism level as this is quite a new technology in the market. Often there is unwillingness to understand and to hear some information.
- **Insufficient charging possibilities, long distances between charging points** - In Latvia there is no full coverage of charging stations provided currently and there could be long distances between charging points, requiring special planning if driving electric vehicle between cities.

- **Uncertainty regarding technical limitations of electric cars and bikes** - he public uncertainty regarding technical limitations for electric vehicles is often larger than the real limitations. This prevents the public from buying electric cars and bikes, and is a substantial barrier in procurement of public transport, as politicians are reluctant to place the demands, and operators in a position of high level on uncertainty. Usually, this barrier does not get removed through communication, people have to see and test that the technology really works at home.

4 External environment

Threats

- **Cold climate** - It has been experienced in winter that due to cold climate in Latvia the battery performance is very much affected and the possible distances are decreased per 60%.
- **Uncertainty regarding national political support for the Electric vehicles** - There are several benefits promised and currently in force for owners of electric vehicles in Latvia, such as no road tax, free parking in capital and other places, free charging. But it is not known for how long the support system will be in force.

Opportunities

- **To think green and support green transport due to belief in green solutions** - Many people in Europe choose green solutions in transport just because they want to contribute to greener and healthier planet.

5 Market Potential

Electric vehicles and fast AC and DC charging stations are available on the market - in Europe and Latvia. In Latvia quite a few electric vehicles are offered by producers VW , Nissan, Citroen, Mitsubishi - passenger cars, high speed, reaching 120 km/per hour, accompanied by lithium battery.

There are also a few fast charging stations suppliers, offering AC as DC charging suitable for both standards: CHAdeMO and Combo 2.

In recent years National or EU support programs, now and then have programmes providing co-financing for purchase of electric vehicles or installation of a charging stations. As electric vehicles are not so competitive in car marked due to their high price, such support programmes are of the utmost importance. It is more political decision to limit the climate change, therefore market conditions will not apply in their usual way.

Regarding electric vehicles infrastructure – in summer 2015 the relevant Latvia national decisions have been made that by the end of 2020 there will be 60 fast charging stations installed on TEN-T

roads providing that the distance between 2 stations is not greater than 30km. The second level charging stations network will be installed by 2022 on the regional roads – 175 stations, the distance between 2 stations will not be greater than 50km.

Depending on whether the support programmes are available or not, it will affect the number of electric vehicles purchased under BEAST activity.

6 Risk analysis

- Weaker performance of cars due to cold climate causing negative opinion on electric cars
- Due its double price with regard to conventional cars electrical vehicles are bought only if the support is available – so the risk is uncertainty regarding national political support for the Electric vehicles in 2015 and 2016.
- Lack of knowledge and trust in the technology
- The uncertainty in the market due to the lack of long-term policy instruments
- Lack of knowledge and uncertainty how expensive it will be to recharge the electric car

7 Financial Analysis

7.1 Cost

Within BEAST project planned time frame for implementation of this activity/project is 3 years from March 2014 to February 2017. Estimated costs for planned workgroup meetings (at least 2) informative campaign and assistance in preparation of project applications: 2249 EUR.

If national support programme is available, then assistance in preparation of project applications for purchase of electric vehicles has been and will be provided.

The approx. finance data of 2014. National programme:

The average cost of electric vehicle 26 000 EUR, the support 70%

The triggered own investment per car – approx. 7500 EUR.

The estimated operation and maintenance costs - approx 50% lower than of conventional car.

7.2 Income

Savings are expected on reduced everyday maintenance and reduced travel costs of about 30-50% in comparison with petrol/diesel car. Within this action it is planned to work with municipalities, so the beneficiaries from these savings will be municipalities, which will have bought the electric vehicles.

7.3 Feasibility assessment

Electric vehicles contribute to a large extent to reduction of CO2 emissions in transport sector and elimination of climate change, therefore the purchase of them is a political decision, not decision based on feasibility calculation. At the moment due to its innovative technologies electric vehicles are still expensive (on average cost is 10 000 EUR more than the same type conventional car) and not feasible. Electric vehicles might become feasible if they would be produced in greater quantities and price would drop to the prices similar to conventional cars.

7.4 Sensitivity analysis

Customers choose conventional cars as they are a cheaper alternative. To initiate the electric car market it might be necessary to introduce higher CO2 tax on fossil fuels and provide subsidies for electric cars, as well as long-term policy framework would be necessary so that the market would know what to adapt to.

7.5 Social benefits and Public support

Social benefits that might be achieved if the electric vehicles are used at greater volumes would be reduced CO2 levels, cleaner air, reduced climate change and quieter traffic.

Public support is needed to achieve a reasonable Return on investment in case of electric vehicles.

Public support was available in 2014 where :

The average cost of electric vehicle was 26 000 EUR, the support 70% (it ranged from 50%-85%)

The triggered own investment per car –approx. 7500 EUR.

The estimated operation and maintenance costs - approx 50% lower than of conventional car.

In line with Latvia National Electro mobility Plan some public support should be available also in 2015 or 2016.

8 Implementation roadmap

	2014		2015		2016		2017
	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half
Support programme available - assistance in preparation project applications for purchase of Electric vehicles							
Work group meetings - preparation of informative campaign and feedback		x			x		x
Implementation of informative campaign							
Assistance in preparation project applications for purchase of Electric vehicles							

If support programmes are available, it is planned to organize information events and provide assistance in project preparation in the years after the BEAST project ends.

9 Conclusion

It would be at all our benefit to reduce pollution levels of CO₂ and limit the climate change, which is causing nature disasters expensive to overcome and repair. At this moment it is more initiative of individuals, municipalities or entrepreneurs because of thinking green to buy an electric vehicle instead of conventional, and initiative of some countries to provide support for purchasing electric vehicles. The market situation might change significantly if higher CO₂ tax on fossil fuels would be introduced and subsidies within EU provided for electric cars.

Meanwhile municipalities are frontrunners in introduction of newer technologies to market them as attractive municipalities with clean environment, low noise levels and well functioning infrastructure for all-range-needs, including e-vehicles. This is the way to do it.