

Proceedings of 7th Transport Research Arena TRA 2018, April 16-19, 2018, Vienna, Austria

The promotion of e-mobility in regional policies: the ongoing PROMETEUS project

Chiara Bresciani^a, Gianluca Lentini^a, Alessandro Luè^{a*}

^aPoliedra – Politecnico di Milano, via G. Colombo, 40, Milano 20133, Italy

Abstract

This paper presents the rationale and the first results as regards the ongoing learning process of the PROMETEUS project, co-financed by the Interreg Europe programme. This project has the objective of promoting e-mobility by tackling the lack of availability of infrastructures and low awareness among the public through the improvement of policy instruments linked to Structural Funds. Addressing the transition to a low carbon economy in five countries (Austria, Italy, Malta, Slovakia, Spain), PROMETEUS aims at overcoming such barriers and promoting e-mobility, focusing on the integration of electric mobility in strategies/plans/programs, on the definition of incentives, on awareness raising, on research and innovation. PROMETEUS, that started in January 2017, will produce a learning process based on the identification, analysis and exchange of knowledge and practices in the field of e-mobility, in order to set up and implement an Action Plan in each partner region.

Keywords: e-mobility; policy instruments; awareness raising; infrastructure.

^{*} Corresponding author. Tel.: +39 02 2399 2905; fax: +39 02 2399 2911.

E-mail address: alessandro.lue@polimi.it

1. E-mobility: a priority within EU policies

Electro-mobility has been identified as a priority in several EU policies because of the positive effects on the environment; for a review of the environmental effects of electric vehicles, see Hawkins et al. (2012), Hawkins et al. (2013), Nordelöf et al. (2014). However, poor availability of dedicated infrastructures and low user awareness are considered as major barriers to be addressed. As outlined in the "Clean Power for Transport package", transport in Europe is 94% dependent on oil, 84% of it being imported, with a bill up to EUR 1 billion per day and increasingly costly effects on the environment, and electrification of transport has been identified as a priority. This is in line with the "policy framework for climate and energy in the period from 2020 to 2030" to help the EU meet its long-term 2050 greenhouse gas reduction target. Also at global level, the Paris Agreement has sent a clear signal to stakeholders, investors, businesses, civil society and policy-makers that resources have to definitively shift away from fossil fuels, mostly by 2050.

The EU DG MOVE - Expert group on future transport fuels published the report on the "State of the Art on Alternative Fuels Transport Systems" that identifies the lack of availability of infrastructures and low awareness among public as the major barriers to clean fuels that need to be addressed. In the literature, several Authors identified possible barriers and incentives for the promotion of electrical mobility (Bakker and Trip, 2013; Bignami et al., 2017; Browne et al., 2012; Diamond, 2009; Egbue and Long, 2012; Sierzchula et al., 2014; Steinhilber et al., 2013).

2. The Interreg Europe PROMETEUS project

The PG102299 Interreg Europe project PROMETEUS (*PROMotion of E-mobiliTy in EUropean regionS*) project[†], co-financed by the Interreg Europe programme, aims to promote e-mobility by tackling the lack of availability of infrastructures and low awareness among public through the improvement of policy instruments linked to Structural Funds, addressing the transition to a low-carbon economy in five European Regions[‡]. The PROMETEUS partnership is composed by one advisory partner (AP – Poliedra) and five public administrations, of which 1 national ministerial entity (Malta) and 4 regional authorities (Carinthia in Austria, Lazio in Italy, Prešov in Slovakia and Castilla y León in Spain).

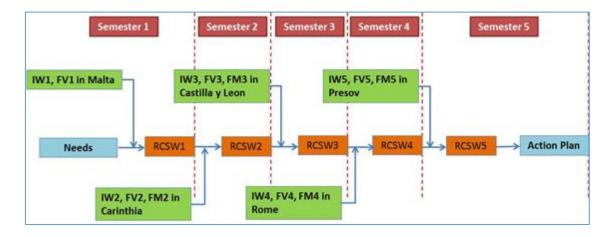


Fig.1: The structure of the learning process of PROMETEUS in the phase 1 (2017 to mid-2019, 5 semesters); FV= Field Visit, IW = Interregional Workshop, FM= Focused Meeting; RCSW= Regional Co-Design Stakeholder Workshops.

[†] The present publication, in agreement with the Subsidy Contract of PG 102299 INTERREG EUROPE PROMETEUS project, art. 12.2, and recalling the provisions of Regulation (EU) 1303/2013, Annex XII 2.2 and the rules specified in the programme manual, only reflects the Authors' views; the programme authorities and the European Commission are not liable for any use that may be made of the information contained herein.

[‡] For any further information on the project: https://www.interregeurope.eu/prometeus/

Being an Interreg Europe project, the aim of PROMETEUS is to support national and regional governments in developing and delivering better policies on e-mobility by creating opportunities for sharing solutions, in order for government investment, innovation and implementation efforts to jointly lead to low carbon economy policies.

PROMETEUS, that started in January 2017, will produce a learning process based on the identification, analysis and exchange of knowledge and practices in the field of e-mobility (phase 1, 2017 to mid-2019), in order to set up and implement an Action Plan in each partner region (phase 2, mid 2019 to mid-2021).

The consortium is composed by one scientific advisory partner and five public administrations, of which one national ministry (Malta) and 4 regional authorities. Each of the policy instruments addressed contains at least one investment priority suitable to be improved by integrating the promotion of e-mobility.

The policy instruments addressed in PROMETEUS will support the definition of actions to be integrated in the implementation of the instrument itself.

Based on the preliminary assessments by the project partners, promising areas of action include:

- integration of e-mobility in strategies/plans/programmes,
- incentives,
- awareness raising,
- research and innovation.

The actions will be designed and implemented by mobilizing stakeholders, facilitating and channeling public and private investments and increasing the awareness among the general public, the business sector and other actors of the need for (and opportunities of) using e-vehicles.

2.1. The PROMETEUS activities designed to support the learning process

The interregional learning process, supported by the advisory partner that also facilitates the co-design activities, involves the project partners and groups of regional stakeholders in all participating countries, that are animated throughout the life of the project. The different aspects of the interregional learning process include Interregional Workshops (IW, see figure 1), in which good practices are presented by the hosting partner, possibly within Field Visits (FV), Focused Meetings (FM), in which two to three partners meet to discuss specific topics of mutual interest, e.g. a specific regional programme on incentives for e-mobility or a specific communication strategy: those meetings that take place at regional level and that have the ultimate scope of supporting the drafting of the Action Plans.

The process is implemented through the above listed activities that have the general objective to promote the exchange of knowledge and good practices in the field of e-mobility, with the final aim to draft Action Plans in each participating country.

More specifically, the project will first carry out a joint analysis of the e-mobility approaches in the different partners' regions, highlighting the specific territorial contexts and the respective demands (tourism, urban areas, high vehicle ownership) for electric vehicles; the project will then also identify valuable experiences and practices adopted as part of local and regional measures which aim at promoting e-mobility in the respective municipalities and regions. These ongoing practices will be further investigated through the project by means of activities such as study visits and thematic workshops in which the project partners shall participate during the course of the project .

In promoting the deployment of electric propulsion, and in aiming at changing behaviours in mobility issues certain actions are essential: these include engaging a combination of stakeholders who are essential for bringing about the necessary change, developing and learning about new technologies and encouraging the implementation of activities by different actors (such as public administrations, suppliers, parking operators, companies which operate large vehicle fleets, private car owners, charging infrastructure installers, suppliers of mobility services, etc.).

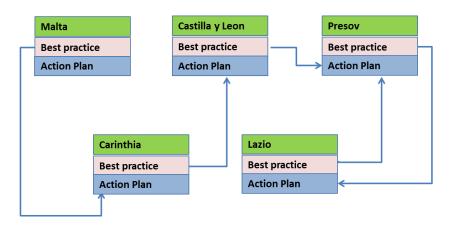


Figure 2. A schematisation of the Prometeus knowledge exchange process, supporting the drafting of the Action Plans.

Moreover, the evaluation of different forms of promotion is also essential, such as revising legislation where necessary, implementing aid schemes (private and public), introducing incentives by the Planning Authorities in terms of use of the road space, launching economic incentives which encourage investment by the market and, above all, strengthening public awareness.

All of the above is being and will be analysed through the first phase of the PROMETEUS project implementation (2017 to mid-2019) and, based on the findings of such analysis, the project will draw up specific e-mobility Action Plans to be strongly integrated in the policy instruments identified in each participating region (mid 2019 to mid-2021). Where Action Plans are already existent, those shall be updated and upgraded through the lessons learnt from phase 1 of this project. To ensure a high-standard and consistent implementation of activities, a shared monitoring system will be designed and implemented to measure the effectiveness of Action Plans being deployed by each partner.

By adopting this system, transfer of knowledge and exchange of good practices will be guaranteed both within the partnership, through joint project activities, and outside of it, through dissemination activities aimed at the general public and relevant stakeholders.

3. The PROMETEUS Regions

3.1. Malta: Integrating National Transport and National Energy Strategies, concretizing impacts of both

PROMETEUS in Malta focuses on the Priority Axis 7 "Shifting towards a lower carbon transport sector" of the Cohesion Fund 2014-2020 Operational Programme I of Malta (OPI), and in particular on Investment Priority 7c "Developing and improving environmentally friendly (including low noise) and low carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure". The OPI as delineated in its foreword shall be in line with the National Transport Strategy (NTS). PROMETEUS shall tackle the themes of traffic emissions and high vehicle ownership by proposing action plans to further pave the way for increased uptake of electric modes of transport. The policy instrument addressed focus OPI (7c) on innovative technologies and promotion of sustainable means of transport in order to reduce greenhouse gas emission, pollution and noise. High vehicle ownership and pollution are intimately interlinked in the Maltese context and through the action plan developed in PROMETEUS, greener measures as well as efforts to promote air quality and better use of electric vehicles.

Malta is very interested in the promotion of electromobility. The OPI objectives and the PROMETEUS objectives are fully aligned with Malta's National Reform Programme (March 2016): the Government is committed to reduce traffic congestion while encouraging the use of energy efficient modes of transport. To this avail, Government has introduced a number of grants and tax deductions to encourage the purchase of electric powered modes of transportation.

Malta is the only region, sensu latu, with a networked system of charging pillars and online booking facilities for ease of use for charging pillars. This system is accessible via www.electricvehiclesmalta.eu. This system has also been awarded very recently by the Malta Communications Authority as Best eBiz Government Initiative.

PROMETEUS will build upon the success of two lighthouse projects in the field of electromobility by the MTI. These projects are DemoEV (Demonstrating the feasibility of Electric Vehicles towards Climate Change Mitigation) financed and completed under the LIFE programme as well as project PORTPVEV (Demonstrating how to make Ports more energy efficient as well as demonstrating the use of electric mobility in ports and port areas) financed under the Territorial Cooperation Italia-Malta Programme.

Among the deliverables of the above projects, a carbon neutral road transportation system was put into practise by testing, evaluating and disseminating a number of actions for the attainment of Malta's targets under the Climate Change and Energy Package. PROMETEUS will bring these experiences together with those of the

partners' to produce a learning process based on the identification, analysis and exchange of knowledge and practices in the field of e-mobility.

3.2. Carinthia: Guidelines for e-mobility, Incentives, Raising Awareness Activities

In PROMETEUS, Carinthia wants to focus on the "Investment priority 4e - promote policies to reduce CO2 emissions for all regions, Specific objective 1: To contribute to reducing CO2 emissions by developing new local or regional strategies" of the EFRE Programm Investitionen in Wachstum und Beschäftigung Österreich 2014-2020 which, among its measures, includes "M13_CO2_IP4e_MN1 Die Lokale und regionale Strategien für Energieeffizienz und nachhaltige Mobilität" (Local and regional strategy for power efficiency and sustainable mobility). 12 Mio. Euro from EFRE Programm are allocated to M13_CO2_IP4e_MN1.

The main focus is the development and implementation of a consulting framework regarding alternative mobility systems and energy efficiency for and from the public hand. This instrument supports the usage of innovative technologies in transport in the same way than the refurbishing of buildings. Main focus is consulting and developing of strategies. In the field of transport the main target is the CO2 and other emissions (NOx, PM10) reduction by bringing the customer to other mobility modes with less CO2 emission or if this is not possible to replace the used vehicle with a more CO2 friendly one.

With this instrument the public hand has a tool to support this change away from CO2 emissions in transport. In the implementation of the strategy, the theme of electromobility should be further developed and new regional mobility concepts should be prepared.

The regional government of Carinthia has developed the current strategy for transport, named "Mobility Masterplan Carinthia 2035", which includes measures to improve intermodal transport and possibilities to combine different types of transport including electromobility, bicycling and alternative types of mobility. Since 2008 the regional government has been supporting the upcoming markets for e-bikes and e-mopeds as long as they were not self-sustaining.

As regards vehicle sharing services, the literature identifies it as a way to promote the adoption of electric vehicles (Arena et al., 2015; Bignami et al., 2017; Dijk et al., 2013).

3.3. Castilla y León: creation of a Strategy for Alternative Energy Vehicles

The PROMETEUS focus in Castilla y León is on TO1 Research and innovation. The specific goals of the 2014-2020 ERDF ROP of Castilla y León as regards TO1 are to promote innovation as an engine for regional development that contributes to a change of the production model of Castilla y León. The government of Castilla y León has detected needs and weaknesses with a significant weight in the whole region. The RIS3 of Castilla y León 20142020 is conceived as an instrument to increase the competitiveness of the activities in which Castilla y León is specialized. The second priority of the RIS3 is to look for a productive efficiency in transport sectors such as Automobile manufacturing and Aeronautics, making materials and components the keys to leadership and sustainability. In addition, it specifies "efficient and sustainable transport" as field performance in R&D. Besides strictly technological projects, the instrument needs to incorporate a wider range of practical solutions, especially as regards the promotion of electromobility. The improvement of the policy instrument will be carried out through the creation of a Strategy for Alternative Energy Vehicles in Castilla y León (VEACYL) and through the introduction and development of practical projects in the framework of fostering R&D (OP) and looking for a productive efficiency in transport (RIS3).

Possible projects and actions may include:

- Subsidies for the purchase of alternative energy vehicles (electric mobility included)
- Foster the acquisition of e-vehicles by individuals
- Installation of charging points in public administration buildings
- Promotion of public e-fleets
- Education programs in schools of vocational education
- Information campaigns addressed to different target groups
- Agreements between public administrations and utilities or automotive companies to develop recharging infrastructures.

An additional improvement will possibly be concerned with a better cooperation with the relevant stakeholders from science/industry/administration within the implementation of the policy instrument.

3.4. Lazio: Axis 4 tenders for fully integrating e-mobility and multimodality in planning

Lazio identifies in its ROP ERDF 2014-2020, priority axis IV, investment priority 4.6 – Increasing sustainable mobility in urban areas, the policy instrument to be addressed within PROMETEUS. It foresees 3 main actions:

- Action 4.6.1 supports improvement and realization of infrastructure and interchange nodes aimed at increasing collective mobility and ecofriendly freight distribution, and related transport systems, in line with the passenger transportation plan of the metropolitan area of Rome.
- Action 4.6.2 (Interventions for urban sustainable mobility, also encouraging the use of low impact transport systems) foresees the purchase of buses with high environmental efficiency, either electric or powered by natural gas, to be used only in the urban and metropolitan area of Rome and within the framework of integrated urban sustainable mobility actions.
- Action 4.6.3 (Intelligent Transport Systems) focuses on management of electronic access points and on installation of smart traffic lights, complementing the actions foreseen in the NOP for metropolitan areas (PON METRO).

The policy instrument is not sufficiently detailed as regards e-mobility, therefore PROMETEUS could help completing it, especially by integrating measures able to stimulate the use of private electric vehicles. Also, a comprehensive and multifaceted view on e-mobility policies seems to lack at regional as well at local level. PROMETEUS could help in developing and sharing a multilevel action plan, combining funding and supporting targeted policy full implementation. The focus area of the policy instrument corresponds to the metropolitan area of Rome, extending beyond the administrative limits of the municipality and involving also part of the provinces of Latina, Frosinone, Rieti and Viterbo.

The improvement and development of the policy instrument will be carried out through:

• In-depth analysis of the state of the art of e-mobility in the metropolitan area of Rome;

- drafting of tenders and the definition of guidelines aimed at fully integrating e-mobility and multimodal transport issues in the design and implementation of infrastructure and services in the transport nodes (Action 4.6.1), such as for example charging points in park&ride spaces at railway stations;
- production of detailed criteria for meeting green public procurement conditions (action 4.6.2);
- development of IT solutions for managing restricted traffic zones in order to foster mechanisms for prioritizing access for electric vehicles (action 4.6.3);
- improvement of governance and of coordination among the different bodies, plans and instruments for sustainable mobility regarding the metropolitan area.

It is especially important to strengthen synergies between the ROP and the PON METRO (National Operational Programme on metropolitan cities), also by supporting the definition and implementation of the NOP actions. The definition of guidelines and bonus (tax reductions) to foster the use of electric and hybrid vehicles in the private sector is envisaged.

3.5. Prešov: integration of e-mobility criteria in iROP projects, incentives, incorporation of e-mob in General Transport Plan

The internal strategy of the iROP is based on the development of regional competitiveness with complementary support of four competitive areas within Slovak regions: infrastructure, accessible and efficient public services, business and jobs creation, local communities in towns and villages. The Regional Integrated Territorial Strategy (RIUS) is an implementation tool of the iROP, and its ambition is to channel investment priorities (IP) in specific areas that have the highest potential for development of a priority and become the engine for further growth. In PROMETEUS the focus of Prešov lies on the role of e-mobility in Priority axis 1 (Safe and environmentally-friendly transport in regions), IP 1.1 (Enhancing regional mobility through connecting secondary and tertiary nodes to TENT infrastructure, including multimodal nodes). In particular, specific objective 1.1 will be attained by the development of local/regional sustainable mobility plans (SMP), as the precondition for all the following proposed interventions in the transport system. The SMP will be the basic tool to guarantee a balanced development of the transport system. Prešov believes that that e-mobility should be integrated into this framework, by supporting its promotion within the RIUS measures. Although in Slovakia e-mobility is not directly supported by any legally binding document, a variety of strategies and plans are on the rise and it is important to incorporate them into existing OPs. The improvement of the policy instrument will be carried out by implementation of new projects.

Possible actions include:

- integration of criteria concerning the promotion of e-mobility among the selection criteria of projects potentially eligible for the support from iROP (e.g., requirement of charging infrastructures as part of road projects to be funded)
- integration of the promotion of e-mobility among the priorities to be identified by the local/regional sustainable mobility plans
- incorporation of e-mobility into the General Plan for Transport at regional level.

Since several stakeholders in Slovakia are actively engaged in the field of e-mobility, the implementation of such improvements would be valuable to facilitate the creation of private-public partnerships. In addition to such improvements, other actions could be inspired during PROMETEUS by good practices in the partner regions in the field of e-mobility, to be imported and adjusted to our needs and incorporated into local and regional plans and projects.

4. Expected Impacts of the project:

The expected impacts of PROMETEUS are strongly linked with the declared desired improvement of the Policy Instrument of each participating region. In Malta, the main impact expected is that the Action Plan will feed the National Transport and Electric Mobility Strategies, and that will help the Ministry for Transport and Infrastructure to understand how to better implement and carry out a modal shift towards e-carsharing and ecarpooling; in Carinthia, the expected impact of PROMETEUS is the improvement of the "Local and regional strategy for power efficiency and sustainable mobility" via guidelines for installations of charging stations, incentives/tax reductions, awareness raising and vehicle sharing; the impact expected in Castilla y Leon is possibly the most ambitious in the project, i.e. the actual creation of a Strategy for Alternative Energy Vehicles (VEACYL) and the introduction and development of practical projects in the framework of fostering R&D; Lazio expects from the project's Action Plan to improvement the ROP ERDF Axis IV via, mainly, the drafting of tenders implementing e-mobility and related infrastructures, IT solutions for congestion areas and by improving the governance and coordination among different administrative bodies; expected impacts in Presov are the far-reaching , and include the integration of e-mobility among the priorities to be identified in regional SUMPs, and the incorporation of e-mobility in the Transport Plan at regional level.

5. The PROMETEUS first lessons learned

5.1. Field visits and the kick-start of the interregional knowledge exchange

The PROMETEUS project is still at its inception phase, however, much work has already been done. The interregional exchange process has started with field visits in Malta, hosted by the project's Lead Partner, and with the kick-off of the regional stakeholder groups in all the participating regions. Field visits and the exchange of best practices represent one of the key tools for the mutual interregional knowledge exchange, and one of the necessary steps for the drafting of the regional Action Plans.

A two-day kick-off meeting held in Malta was the first joint-activity in which all partners had the opportunity to share their experiences and learn from practices being implemented in other regions. During the two-day meeting, delegates visited several e-mobility infrastructure being operated in Malta, including the photovoltaic Farm installed at Transport Malta's head office which (apart from contributing to the reduction of the building's carbon footprint) offsets the electricity required to charge the 13 electric vehicle fleet owned and operated by the transport authority. The fleet includes a variety of vehicles; from crew vans used by maintenance crew and Enforcement Officers, M1 vehicles used by couriers and L7e quadricycles used by employees to attend meetings and other on-the-job duties. This infrastructure has contributed towards the reduction of 20 tonnes of CO2 per *annum*.

The delegates were also shown the three solar car-charging stations which have been installed in public parking spaces in Malta and which produce direct sun to car energy. The three stations are covered in PV panels thus generating solar energy on site which is in turn stored in on-site Lithium-ion batteries. Cars use electricity from the stored energy to re-charge the car battery, thus achieving full carbon neutral transport. The stations have been in operation for the past two years and provide direct solar energy for over 3000 charging events/annum. As regards the future field visits and the best practices selected by the partners for the interregional knowledge exchange, in the next semesters Carinthia will host demonstrations on urban public e-transport and on the localization of charging infrastructures, Castilla y León will focus on its strong e-vehicle manufacturing sector, Lazio will present good practices for e-mobility in policy plans, most namely in the municipal mobility plan in Rome, and Prešov will focus on its R&D sector.

5.2. State of the art, self-assessed SWOT and possibilities for mutual knowledge exchange

During the kick-off meeting advisory partner Poliedra presented a first draft of the "Preparedness and Needs" methodology to help partners to describe the state of the art of electromobility in their regions, and to assess strengths, weaknesses, opportunities and threats (SWOT) for the promotion and the development of e-mobility in their territories. This has represented the kick-start of the interregional knowledge exchange process, since all partners found themselves in the position to identify their needs and declared objectives, and could assess what they can reasonably learn from other regions' best practice.

Starting from the discussion held during the kick-off meetings, PROMETEUS regions went on by preparing their "Preparedness and Needs Report", also with the contributions collected during the Regional Co-design Stakeholder Workshops. During these events each region and the respective stakeholder members that participated in the international exchange transferred its outcomes to a wider audience to gain new regional/local knowledge and input from them.

From the analysis of the regional reports very interesting results came out. All regions with the exception of Prešov have policy instruments specifically promoting e-mobility and these policies are often accompanied by incentives, and by a rather high degree of awareness among policy makers. With the exception of Prešov, all regions have, also, e-fleets available, at various degrees of penetration, and with adequate energy mix. Most regions have a strong R&D sector for e-mobility, in particular Castilla y León and Prešov.

Weaknesses are mainly represented by high costs for initial investments in development, infrastructure, and purchase of e-vehicles, whereas long times in implementation of measures for e-mobility are an issue for some; a lack of awareness/interest/sensitivity or a self-assessed low capability regarding e-mobility in general is acknowledged throughout the PROMETEUS partnership, while a communication strategy not specifically targeted towards e-mobility is often indicated as a weak point in all regions.

E-mobility inspires the PROMETEUS regions with several opportunities, namely the fulfilment of climate and mitigation targets, most importantly those in the framework of the COP21, and the reduction of the dependency on fossil fuels; another often mentioned opportunity is the possibility to create new jobs and develop new skills and, linked to that, the possibility of developing research sectors, new business models, new opportunities for partnerships.

The perceived threats arise from possible lobbying by the fossil fuel business sector, the perception of long times for revenues after the important investments expected with the large-scale implementation of electromobility, and in general the high costs of e-mobility, especially for public administrations subjected to austerity measures and budgetary restrictions.

On the basis of the self-assessed SWOT analysis, and on the basis of the desired actions to be taken by the different regions towards the improvement of their own policy instruments, a structured dialogue is being put in place in PROMETEUS in order to facilitate mutual learning and exchange of good practices. Such a structured dialogue is characterised by trying and matching the "needs" and the "have got's" of all PROMETEUS regions, and takes place at two scales:

- small-group focused meetings, that specifically focus, e.g., on the exchange of specific strategic policy or technical documents, e.g. for the drafting of tenders or the localisation of recharging infrastructures;
- partnership-wide dialogue in interregional workshops and steering committees, focusing on the common challenges and steps to be taken by all regions, e.g. the perceptions related to implementation costs of the transition towards electromobility or the most effective way to facilitate the involvement of regional stakeholders.

More in detail, the small group focused meeting taking place between Malta, Carinthia and Lazio, that has been organised for the incoming semester 2 meeting in Klagenfurt, Austria, will focus on the exchange of criteria promoting electromobility infrastructures (Lazio to Carinthia), on a presentation of policy instruments promoting e-fleets (Carinthia to Lazio), on the incentives for the purchase of e-vehicles for low-income households (Lazio to Malta), on the legal instruments for an effective governance coordination in e-mobility (Malta to Lazio), on awareness raising activities on e-mobility (Malta to Carinthia) and on the incentives for the promotion of e-carsharing (Carinthia to Malta).

Partnership-wide dialogue is due to take place, on the other hand, in project-wide meetings such as the steering committees and the interregional workshops, in which good practices from one regions are presented to all other, and in which stakeholders of the hosting region address the partnership and stakeholders from all partners.

The creation of the interregional mutual knowledge exchange, and the initial positive experiences in it, is regarded as a highly significant result already obtained by project PROMETEUS: the drafting and the implementation of the five regional Action Plans, actively intervening in the improvement of the policy instruments indicated by the participating regions, are due for the phase 2 of the project (2019 to 2021) and critically depend on the effective and structured knowledge exchange that is being built in the initial two and a half years.

6. Conclusions and next steps

The PROMETEUS project has almost concluded its first year of activity and its structure and rationale has been tested and proved quite robust. The next one and a half years are expected to strengthen the interregional dialogue and to give more concreteness to the improvement of the policy instruments chosen by the partners: in this context, the main future challenges for PROMETEUS, from today to mid-2021, are at present identified undoubtedly in the need to refine and better focus the structured dialogue that is being built, in particular bearing in mind the need of overcoming linguistic, legislative and cultural barriers, and in furthering a truly effective involvement of groups of regional stakeholders in the interregional mutual knowledge exchange, in order for them to gather a first-hand impression of the best practices in electromobility being implemented in other regions.

The next steps of the project lie, in fact, in the exchange of best practices, aimed to further inspire the regional stakeholder groups (second semester 2017) and in the drafting of the preliminary Action Plans (first semester 2018), a step that will represent the first actual concrete basis for the promotion of e-mobility within policy instruments.

Acknowledgements

The authors, all affiliated to advisory partner Poliedra, wish to thank the whole PROMETEUS partnership for the effective work and the cooperation in the successful submission and in the development of the activities of the project. Most notably we wish to thank Lead Partner Transport Malta and namely project manager Victor Battistino, and partners Amt der Kärtner Landesregierung (Regional Government of Carinthia, Austria), Dirección General de Industria y Competitividad – Comunidad Autónoma de Castilla y León, (General Directorate of Industry and Competitiveness of the Regional Government of Castilla y León, Spain), Prešovský samosprávny kraj (Prešov Self-Governing Region, Slovakia), Regione Lazio (Lazio Region, Italy).

7. References

Arena, M., Azzone, G., Colorni, A., Conte, A., Luè, A., Nocerino, R., 2015. Service design in electric vehicle sharing: evidence from Italy. IET Intelligent Transport Systems 9(2), 145-155.

- Bakker, S., Trip, J. J., 2013. Policy options to support the adoption of electric vehicles in the urban environment. Transportation Research Part D: Transport and Environment 25, 18-23.
- Bignami, D.F., Vitale, A. C., Lué, A., Nocerino, R., Rossi, M., Savaresi, S. M., 2017. Electric Vehicle Sharing Services for Smarter Cities. Research for Development. Springer, Cham.
- Browne, D., O'Mahony, M., Caulfield, B., 2012. How should barriers to alternative fuels and vehicles be classified and potential policies to promote innovative technologies be evaluated?. Journal of Cleaner Production 35, 140-151.

Diamond, D., 2009. The impact of government incentives for hybrid-electric vehicles: Evidence from US states. Energy Policy 37(3), 972-983.

Dijk, M., Orsato, R. J., Kemp, R., 2013. The emergence of an electric mobility trajectory. Energy Policy 52, 135-145.

- Egbue, O., Long, S., 2012. Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perceptions. Energy policy 48, 717-729.
- Hawkins, T.R., Gausen, O. M., & Strømman, A.H., 2012. Environmental impacts of hybrid and electric vehicles a review. The International Journal of Life Cycle Assessment 17(8), 997-1014.
- Hawkins, T.R., Singh, B., Majeau-Bettez, G., Strømman, A.H., 2013. Comparative environmental life cycle assessment of conventional and electric vehicles. Journal of Industrial Ecology 17(1), 53-64.
- Nordelöf, A., Messagie, M., Tillman, A.M., Söderman, M.L., Van Mierlo, J., 2014. Environmental impacts of hybrid, plug-in hybrid, and battery electric vehicles—what can we learn from life cycle assessment? The International Journal of Life Cycle Assessment 19(11), 1866-1890.
- Sierzchula, W., Bakker, S., Maat, K., van Wee, B., 2014. The influence of financial incentives and other socio-economic factors on electric vehicle adoption. Energy Policy 68, 183-194.
- Steinhilber, S., Wells, P., Thankappan, S., 2013. Socio-technical inertia: Understanding the barriers to electric vehicles. Energy policy 60, 531-539.