e-MOPOLI
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https://www.interregeurope.eu/e-mopoli

e-MOPOLI aims at contributing to an efficient diffusion of electric and other alternative fuel mobility by promoting mobility patterns, transport systems, infrastructure and sustainable low CO2 emission services

e-MOPOLI Recommendations

Responsible partner
Attica Region (PP4)

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Project partners

ZEMGALE PLANNING REGION
REGIONE CALABRIA
Kainuun liitto
PROVINCIA DI BRESCIA
HELLENIC REPUBLIC REGION OF ATTICA
Rogaland County Council
BSC
Flanders State of the Art

Low-carbon economy

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1. Executive summary

The continuous increase of energy consumption and environment pollution is one of the most serious challenges our world faces. According to data from the European Union, the transportation sector, and more specifically, the road transportation field, is among the major contributors in energy consumption and CO2 emissions in the European continent. The urgent need for new sustainable technologies resulted in the advent of electric and alternative fuels vehicles aiming at cleaner and greener transportation systems. Despite the advantages of these new type of cars in reducing the energy consumption and noise levels as well as enhancing air quality and thus life quality, their number is still low within Europe. Apparently, the various European countries have achieved different levels of progress in promoting electric and alternative fuels mobility in their regions and it is obvious that there is still space for further improvement. The efficient diffusion of electromobility requires a concrete methodology aiming at deeply analysing the current situation in terms of electromobility and formulating suitable actions to be implemented.

The objective of this document is to develop and present the template documents concerning the action plan and the recommendations aiming at promoting electromobility and the use of alternative fuels in all 9 project partners regions. In order to achieve these objectives, the description of the methodology and its various steps starting from the investigation of the progress achieved so far and the deficiencies existing hindering the promotion of the sustainable technologies and going through the creation of the regional profile via the conduction of GAP and SWOT analysis is highlighted . The GAP analysis on specific e – mobility indicators aims at identifying and clarifying the fields need to be further enforced (e.g. organization of campaigns informing people and raising awareness and acceptance of electric vehicles). On the other hand, strengths and weaknesses of a specific region need to be exploited and overcome respectively, the opportunities arisen from the diffusion of electro - and alternative fuels mobility in the region and finally, the threats lurking from this diffusion are identified and investigated during the SWOT analysis.

The development of the regional profile based on the results of all the above described analyses leads to the formulation of recommendations in different aspects (business, governance and RIS3) taking into consideration all deficiencies and strengths of the region. Scope of the recommendations is the definition of effective guidelines, the design of policy instruments for the shift from fossil to alternative fuels, the deployment of charging facilities and the solution of e-mobility powered with electricity from renewables exploiting best practices and ready-to-go examples. The recommendations cover a wide range of solutions that could enable any region interested in sustainable transportation systems to promote electric and alternative fuels vehicles. Due to the fact that it is impossible to implement all these solutions within a short time frame, it is necessary to narrow them down and formulate targeted actions that could be easily and directly implemented.

2. Introduction

Environment protection should be a priority for all countries, their policy makers and their citizens and a basic pillar for the strategic plans in national and regional level. However, the already high energy consumption and emission production are continuously and exponentially increased worldwide revealing that the environment is still suffering from human activities, actions and decisions. Annual reports of the European Union (www.europa.eu) reveal that the transportation sector has the highest share in energy consumption (33.1% in 2015) and constitutes the second contributing factor in CO2 emissions (28.5% in 2015). Specifically, the road transportation field is responsible for most CO2 emissions (72.9% in 2015). The significant contribution of the transportation sector reveals that decisions and actions should be taken and be implemented towards a more sustainable mobility in order to achieve energy consumption reduction and emissions savings. Electromobility and alternative fuels are considered to be the key-solutions for designing a more environmentally friendly transportation system and simultaneously attractive and efficient for the users.

Electric vehicles and other alternative fuel vehicles (mostly powered by biogas, CNG and hydrogen) are promising alternatives to reduce CO2 emissions providing better air quality for the city residents and the road users as well as increase energy efficiency. Additionally, electric vehicles are more quiet than conventional cars and even silent in low speeds improving life quality and reducing noise levels. This advantage of electric vehicles has also psychological benefits for the drivers, passengers and other road users as the noise reduction or absence brings about less anxiety, less frustration and better and potentially less aggressive driving behaviour. Production, sale and use of electric cars has already started in the European Region and their penetration rate is being slowly increased during the last years (Europe Environment Agency). More specifically, the biggest increase since 2008 occurred in 2017, when the sales of the battery electric vehicles (BEV) increased by almost 50% compared to 2016 while for plug in hybrid electric vehicles the corresponding increase was 35% for the same time period (Europe Environment Agency). Concerning registrations of these two types of electric vehicles in the European region, they consist 0.7% of the total number cars. Despite their advantages, the number of electric vehicles in Europe is still limited according to the data from the Europe Environment Agency. Different factors cause this low penetration rate such as applied policies, lack of financial and non- financial incentives, high price of electric vehicles compared to the conventional ones, lack of charging infrastructure, low public awareness (Coffman et al.,2017; Sierzchula et al., 2014).

One of the major targets of the European Union is environment protection and less energy production and therefore EU aims at increasing the above share of electric vehicles. Forecasts made by the International Energy Agency support that the share of EVs in the European region can be up to 23% in 2030 concerning all road transport vehicles except of two and three wheelers. Achieving this target means promotion of the electromobility concept and use of alternative fuels as well as continuously increase of user acceptance and willingness to abandon their conventional diesel cars and shift to the electric ones. Various policy instruments promoting e-mobility can be applied on different policy levels: federal, regional and local and can be divided in four main groups: financial incentives, laws and regulation, improving infrastructure and communication campaigns (Vanhaverbeke and Van Sloten, 2018). For supporting and fostering electromobility and alternative fuels, each Region should identify the current situation regarding these two key - solutions towards a more sustainable and environmental friendly, detect the aspects where much effort should be done such as legislation, research, campaigns etc as well as identify the Good Practices already planned or implemented in the area such as charging station network installation, online platform creation for the detection of the closest charging station, taxes reduction for the EV owners and users, etc. A very important aspect and core factor in the effort of the promotion of electromobility if the Interregional Learning Process. The exchange of good practices, experience, ideas and knowledge among the project partners, the discussions and meetings, the field visits and the various project activities are the components for the development of recommendations suitable and necessary for each region based on the current situation and according to its needs and visions. The inspiration from the learning process as well as the formulation of recommendations for supporting electromobility are the key-points for the next step which includes the creation of a successful action plan, whose efficient and effective monitoring and implementation will encourage the introduction and establishment of electromobility and alternative fuels in the region's territory.

2.1 Objective and Structure

The objective of this deliverable is the presentation of the recommendations formulated from 9 European Regions within the framework of e-MOPOLI project (Electro MObility as driver to support POLicy Instruments for sustainable mobility) funded by the European Development Fund Union within the framework of the Interreg Europe Program. The development of specific recommendations is one of the key outputs of the e-MOPOLI project contributing in promoting electromobility and alternative fuels in each of the participated regions.

The deliverable is organized as follows:

- Chapter 2 includes some information concerning the e-MOPOLI project, its partners, activities and goals.
- Chapter 3 presents the three main project thematic fields the formulated recommendations will be categorized: market take up, business and Research and Innovation Strategies for Smart Specialization (RIS3)
- The Current situation in each region concerning electromobility in each of the examined e-mobility aspects (Business, Governance, RIS3) is included in chapter 4
- Evaluation of the current situation and the potential for further improvement will be illustrated through a Gap Analysis in Chapter 5.
- The SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) of electromobility in each Region is presented in Chapter 6.
- Finally, chapter 7 includes the formulation of recommendations for promoting electromobility in each region. The recommendation will be further categorized in the three main project thematic areas (market take up, business, RIS3).

3. The e-MOPOLI project

The e-MOPOLI project (**E**lectro **MO**bility as driver to support **POL**icy **I**nstruments for sustainable mobility) is a European Interreg project aiming at promoting the electromobility and alternative fuels concept towards more sustainable and environmentally friendly transportation systems. This will be achieved through the improvement of 9 regional policy instruments, 6 of which directly linked to Structural Funds, in 9 European Regions of 8 European countries: Italy, Slovenia, Greece, Belgium, Finland, Norway, Romania and Latvia. More specifically, the project partner regions are (Figure 1):

- Province of Brescia (Italy) – Lead partner
- Calabria Region (Italy)
- Regional Development Agency of Gorenjska (Slovenia)
- Region of Attica (Greece)
- Flemish government Department Environment (Belgium)
- Regional Council of Kainuu (Finland)
- Rogaland County Council (Norway)
- Bucharest-Ilfov Regional Development Agency (Romania)
- Zemgale Planning Region (Latvia).

Fig. 1 Partner Regions of the e-MOPOLI Project (with green the Lead Partner of the project)

Charging and tolling policies in favour of e-vehicles, development of charging infrastructure powered by alternative sources, integration of charging infrastructure and charging hubs in spatial planning,

deployment and purchase of alternative fuel vehicles in public transport, enhancement of the capability of public authorities in developing effective policies for reducing the carbon footprint of transport activities, addressing general and specific challenges of environmental protection included in Operational Programmes and promotion of e-mobility in niche market fleets are the main working areas of the project. The policy instruments will be improved through various project activities such as interregional learning process, partner meetings, study field visits and staff exchange where the project partners will have the opportunity to exchange ideas, knowledge and practices not only among each other but also with experts actively involved in the field of electromobility and alternative fuels. Additionally, each project partner will formulate a regional stakeholders group, consisting of people with deep knowledge in the field of electromobility and alternative fuels working in the industry, in the infrastructure and (public) service, regional public authorities, in business association and in the academia/research.

e-MOPOLI intends to contribute to the Europe 2020 strategy, by promoting mobility patterns, transport systems, infrastructure and sustainable low CO2 emissions services. The promotion of sustainable solutions for e-vehicles deployment and smart infrastructure for charging will enhance the development of e-mobility as a tool for realising smart, sustainable and inclusive growth. The project is compliant with the INTERREG EUROPE priority axis 3 supporting the shift towards a low-carbon economy. In particular it addresses the specific objective 3.1: improve the implementation of regional development policies and programmes, in particular programmes for Investment for Growth and Job focusing on the transition to a low-carbon economy. The project, in order to effectively reach its goal, will be soundly structured on following steps:

- e-MOPOLI methodology
- partners' local and regional territorial context analysis
- Good Practices selected for exchange of experience and transfer of lesson learnt
- 9 regional action plans
- monitoring of 9 Action Plans through e-MOPOLI webtool
- e-MOPOLI recommendations on business, governance and RIS3 level for regional and local authorities.

4. The main project thematic areas

The three main projects thematic areas defined for further categorized the current situation aspects as well as the recommendation formulated for fostering electromobility and alternative fuels in each project partner region are (Fig. 2):

- Business: Market take-up of sustainable mobility from alternative fuels
- Governance: Needs, requirements and policies to enhance sustainable mobility from e-mobility and alternative fuels
- Research and Innovation Strategies for Smart Specialization (RIS3): e-mobility in relation to RIS3 Smart Specialization Strategy documents

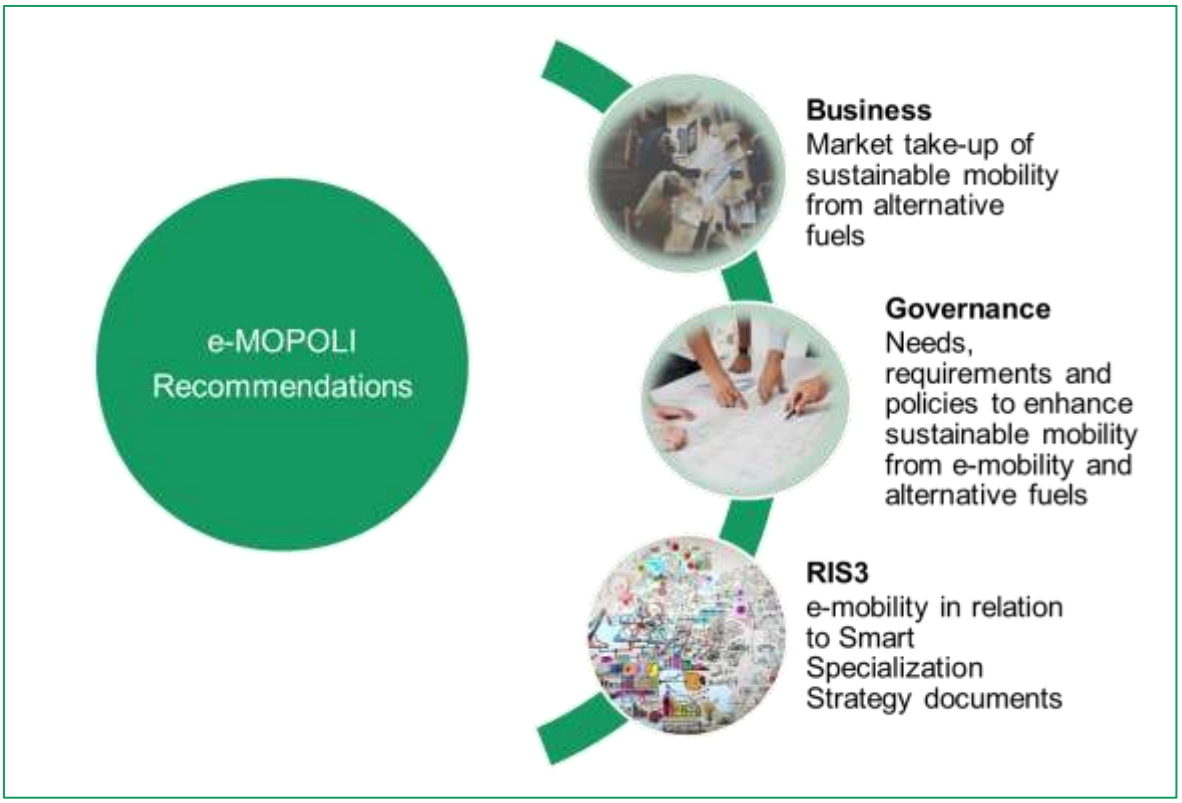


Fig. 2 The three main project thematic areas

4.1 Thematic Area 1: Business

Electric vehicles can offer significant economic and environmental advantages as they are expected to have reduced maintenance and operational costs as well as zero CO2 emissions and reduced to zero level of noise in very low speeds. Business is one of the main areas that will play important role in the diffusion of electromobility and alternative fuels. Incentives should be given to industry and enterprises in order to be involved in this field and contribute in promoting electric vehicle, enhance their characteristics and performance and increase user acceptance and willingness to use them. Market take up means how many people will shift from diesel and conventional vehicles to electric and alternative fuel ones and therefore the target is to achieve a continuous higher percentage. The market potential for electric vehicles is estimated in 2020 as the 10-15% of the global automotive market. Additionally, business could also significant contribute in the necessary infrastructure, required for the easier and more comfortable use of electric vehicles. Joint investment programs should be proposed in order to establish an efficient and publicly accessible charging network.

4.2 Thematic Area 2: Governance

It is significant that the people ruling a municipality, a region or a country are interested in transforming the prevailing transportation system into a more sustainable and environmental friendly one aiming at improving air and life quality of the residents as well as creating healthier conditions during the fulfilment of their transportation needs. Governors supporting and favouring electromobility and alternative fuels can highly contribute in their efficient introduction, promotion and establishment their territory and there are multiple ways to achieve these goals. Policies to expand the use of electric mobility and formulation and adoption of the appropriate legislation framework favouring and encouraging the use and purchase of electric vehicles is the first step for increasing users' willingness to use vehicles being equipped with this new technology. Enforcement of regulatory changes, laws, directives and standards for the promotion of electromobility and increase of the share of electric vehicles and alternative fuels in the fleet can also contribute towards more sustainable transportation system.

Additionally, incentives should be set and given to the private and public sector by the state and public authorities fostering their involvement in the electromobility sector. Public authorities and the state should take care of the establishment of a privately and publicly accessible charging infrastructure enable electric vehicle users to move within and outside of the city easily and more comfortable without anxiety and frustration about where to charge their cars if necessary. Moreover, the creation of a fast charging station network within the country will also encourage tourists to visit the country with their electric vehicles and should also be a priority for the state. These actions along with the efficient improvements and upgrades of the infrastructure requires the strong cooperation between governance and business and support of the entrepreneurial decision of integrated e-mobility productions.

Funding is also an important issue concerning actions about promoting electromobility and alternative fuels like research and innovation activities as it will be further described in the next section (Thematic Area 3: RIS3). Research, development and information programs should be funded concerning the design and construction of electric vehicles, electric motors, power electronics and management of the systems for electricity storage. These programs will be addressed to joint ventures including industry, universities and research institutions. Education can also play an important role by informing students about the advantage of electromobility and alternative fuels as well as incorporating electromobility sessions and courses in the relevant universities. Finally, communication strategies including information and education campaigns organized by public authorities, regions and municipalities brings about raise in public awareness about electromobility and alternative fuels.

4.3 Thematic Area 3: Research and Innovation Strategies for Smart Specialization (RIS3)

Research and Innovation Strategies for Smart Specialisation – RIS3 (Fig. 3) are integrated, place – based economic transformation agendas, taking into consideration the special and individual characteristics of each region. The mission of the formulation of these strategies is summarizing in the following 5 axis (ec.europa.eu):

- They focus policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development.
- They build on each country/region's strengths, competitive advantages and potential for excellence.
- They support technological as well as practice-based innovation and aim to stimulate private sector investment.
- They get stakeholders fully involved and encourage innovation and experimentation.
- They are evidence-based and include sound monitoring and evaluation systems

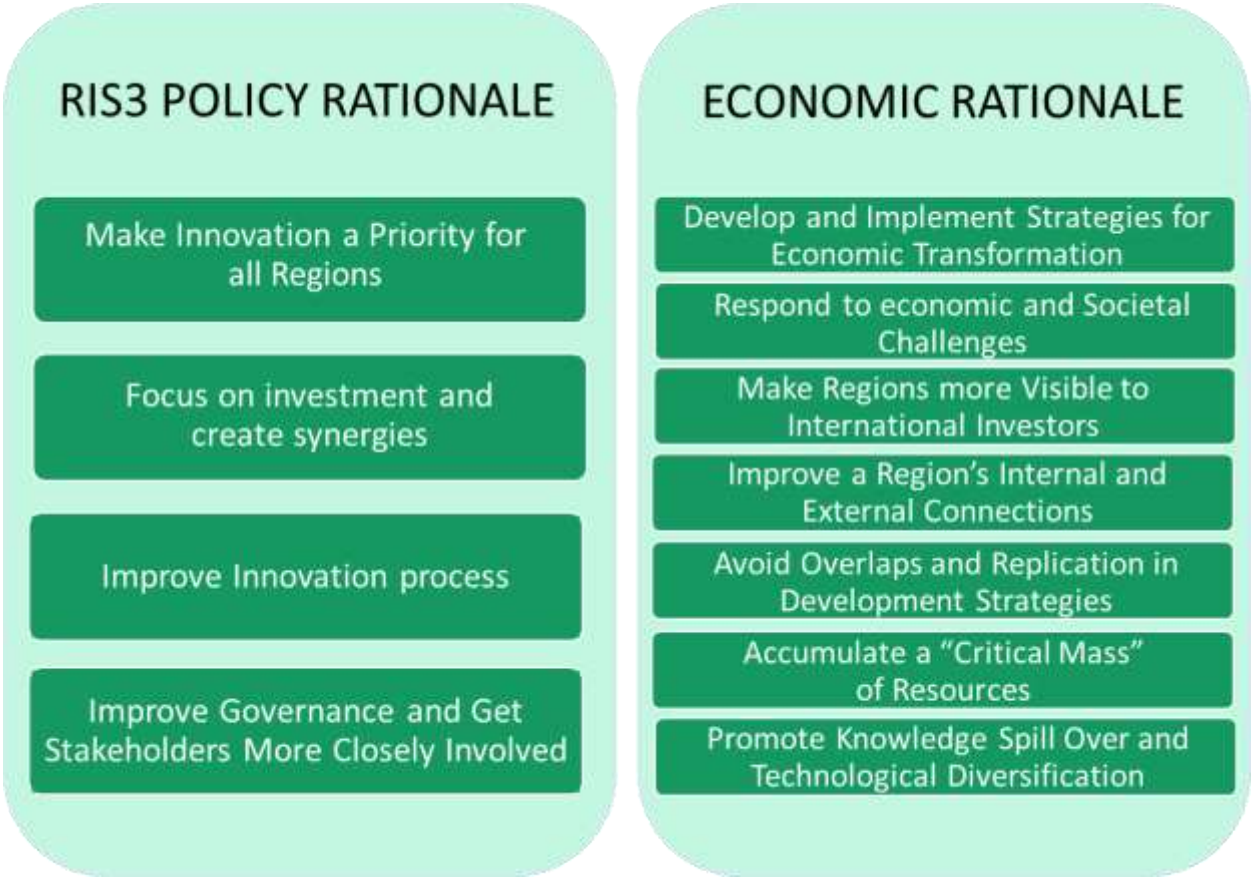


Fig. 3 The aim of RIS3

Research and Innovation Strategies involves research activities on various technologies concerning every sector (transportation, agriculture, economy, etc) and the participation of research departments and institutions. The RIS3 concept indicates flexible and dynamic innovation strategies aiming to regional firms and productive system and tries to avoid fragmentation efforts in the field of innovation support. It refers to all three priorities of Europe2020 – sustainable, smart and inclusive growth – and guides priority-setting in national and regional innovation strategies, as well as cross-border cooperation where appropriate. The strategies are formulated based on each country's/region's strengths, competitive advantages and potential for excellence and the main focus areas include policy support and stimulation of private sector investments, technological support as well as practice-based innovation, encouragement of innovation and experimentation while it also includes sound monitoring and evaluation systems for their efficiency and effectiveness.

5. Current Situation in the Field of Electromobility and Alternative Fuels

Before the formulation of recommendations and effective guidelines for the promotion of electromobility and alternative fuels, it is essential to identify the current situation, the progress that has been achieved, the deficiencies and the various issues that prevent the diffusion of these new technologies in each region. In this chapter the main points concerning the current status of each project partner European region in this field is presented in each of the three examined project thematic e-mobility areas: Business, Governance, RIS3.

5.1 Province of Brescia

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Enhance the cooperation among private and public sector is needed: - It is necessary an alignment on common objectives and targets. - Policy and governance have to support market take-up of sustainable mobility from alternative fuels and vice versa. **B2.** The most promising and diffused technology in Lombardy Region and Province of Brescia in the field of alternative fuels is nowadays the e-mobility with an increasing diffusion of charging infrastructure and e-vehicles (mostly private cars). A great increase of e-vehicles was registered from 2015 to 2019 (+130%) in Italy with more than 70.000 e-vehicles only in Lombardy Region. This trend was reached thanks to the installation of charging infrastructure and public incentives for the purchase of e-vehicles. **B3.** In last three years (2016-2019), thanks to national, regional and local initiatives (energy and services providers), regulation, incentives and projects, diffusion of e-vehicles and charging spots had a good increase. The diffusion of e-mobility is still not very relevant in the overall framework of mobility. **B.4** Patchy diffusion of charging infrastructure all over the Region, high costs of EV, few examples of Local Public Transport services powered by alternative fuels led to a scarce confident of citizens and end-users in new opportunities offered by alternative fuel mobility and vehicles. **B5.** PAs, private sector and research centres are nowadays experimenting new opportunities offered by the Smart City approach including digitalization, ICT, energy, mobility and involvement of end-users to plan policies and urban spaces and drive new investments opportunities. **B6.** The private sector has nowadays difficulties in find market opportunities in e-mobility applied to the passengers and freight transport. However, both Public and Private sectors are cooperating to find new strategies and sustainable business models to promote e-mobility in passengers and freight transports, also thanks to Good practices and business models already experimented on national and European levels. **B7.** Private sector together with public and research centres are more and more engaged on international level with European projects (i.e. Horizon 2020) that help all these actors, and in particular the private one, in terms of funds and of experimentations of new technologies and prototypes for e-mobility. **B8.** Private sector is experimenting, together with Public, new options for end-users to use e-mobility services integrated with other mobility services. For example, electric car-sharing services integrated with local public transport options (located in railway stations).

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Lombardy Region has the following Regional Short-term vision that define the short term objectives to be reached in 5 years: “Lombardy Region, through the governance of local authorities, as Province of Brescia, and regulatory provisions, reaches the minimum charging interoperable infrastructure installed on its territory and it guarantees homogeneous development even in areas with weak demand or where the market does not develop the charging spots. Region collects all information regarding the charging spots that are installed in the territory.” **G2.** The Italian State-of-Art on the current state of electro-mobility includes electric vehicles (electric cars, vehicle models), charging infrastructure and e-mobility services (Electric Car Sharing) in Italy. With reference to the national policies, a very important series of guidance documents related to sustainability in the transport sector have been drawn. The most important are the “National Plan for Electric Charging Infrastructures” (PNIRE), the “Roadmap for a Sustainable Mobility”, the “Legislative Decree 257/2016 Directive Alternative Fuels Initiative” (DAFI), the initiative of the Ministry of Transport "Connettere l’Italia", the National Energy Strategy and finally the Senate resolution on sustainable mobility. At the beginning of 2019, no direct ministerial incentives to purchase EVs were available but they were exempt from the annual circulation tax (ownership tax) for a period of five years from the date of the first registration. After this period, the electric vehicles benefit from a 75% reduction of the tax rate applied to the equivalent petrol vehicles. Moreover, nowadays many insurance companies offer discounts on insurance up to 50%. Some initiatives at regional or municipal level consider a reduction or exemption from tariffs of parking, toll, or access on low emission zone (see Sourcebook of Good Practices). At regional level there are some incentives for Emilia Romagna, Lombardy and Bolzano Province. In other regions such as Sardinia and Trento the Mobility Plan has been implemented with allocated investments. Lombardy Region and the Province of Brescia have multiple regulations, strategies, planning instruments and tools toward the diffusion of sustainable and e-mobility (see Source Book of Good Practices). Both of them are one of most experienced regions and local authorities in the national framework. In particular, concerning Region the main documents are the following: Regional operational Program (ROP) 2014-2020, priority axis IV - Supporting the transition towards a low carbon emission economy in all sectors; Guidelines for the charging infrastructure of electric vehicles – 2015; 2017, Implementation Document of the Regional Strategy for the development of electric mobility (Legislative Decree No. 6366), 2017. The related strategy is included in in Annex 3 of the Regional Mobility and Transport Program; White Book and Guideline, thanks to e-MOTICON Alpine Space 2014-2020 project, that defined strategies and actions to improve the skills of the public administration in the planning / implementation of an interoperable charging infrastructure. In particular, the White Book includes the "Transnational Strategy for the Alpine Area" and Guidelines includes a list of operational guidelines and best practices for public administrations; Metropolitan Chart of Electric mobility, 2017; Vademecum of e-mobility (technical info on infrastructure), 2018. [https://www.regione.lombardia.it/wps/portal/istituzionale/HP/servizi-e-informazioni/enti-e-operatori/trasporti-e-logistica/mobilita-elettrica - https://emob-italia.it/en/metropolitan-chart-of-electric-mobility/]. Lombardy Region, thanks to ROP ERDF 2014-2020's funds and ministerial funds, offers incentives and funds for the purchase of e-vehicles and installation of Charging stations (see e-MOPOLI Source Book). Concerning Province of Brescia, the main documents and tool are the following: Guidelines for planning the development of electric mobility in the Province [http://e-mobility.provincia.brescia.it/en_GB/scarica-documenti/regulations/];

	e-HUB, a model of virtual Help Desk for Public Administrations and stakeholders in the field of e-mobility and charging infrastructure across the Alpine Space [http://e-mobility.provincia.brescia.it/en_GB/e-hub/]. In this framework, for a capillary diffusion of e-mobility promoted by Public Administrations intervention, it is necessary and fundamental a continuous upgrade of these regional and local regulations on e-mobility because of quick technologies and market changes. **G3.** Even if Lombardy Region is one of the more experienced regions in Italy in relation to policies and strategies related to e-mobility (see Outputs e-MOPOLI regional Analysis), it is more and more needed an integrated approach for sustainable mobility planning and strategies. E-mobility is a clear example of the necessity to plan with an integrated approach, since it involves mobility, energy and environmental issues. Moreover, e-mobility should exploit opportunities offered by digitalization, ICT and smart city approach. Both Lombardy Region and Province of Brescia are experimenting these aspects also thanks to the participation to EU projects as partners and observers, such as e-MOTICON and e-SMART (Alpine Space 2014-2020). **G4.** Lack of concrete example of interoperability of charging infrastructure together with a lack of updated monitoring and mapping of existing charging infrastructure lead to an incomplete overview and framework for Public Administration (PA) on the current situation of charging infrastructure planning and possible trends. **G5.** Before 2017, procedures to obtain the permission to install for charging installation on regional and local level were uncomplete and unclear. Staring from 2017, Lombardy Region proceeded with the implementation of regional directive, in alignments with ministerial and local policies, to support public and private operators that are interested in charging infrastructure installation. **G6.** Even if the at Regional, and in some case Provincial level (I.e. Province of Brescia) the e-mobility strategies and policies are adequately addressed by Public Authorities, it is registered a lack of public sector awareness, knowledge and capacity, above all on local level (municipalities), on e-mobility issues and opportunities.

RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Concerning RIS3, Lombardy Region, and consequently its provinces including the Province of Brescia, in keeping with the policies implemented over the years, characterized by balanced top-down and bottom-up decisions, has identified, after a period of rationalization, **7 Specialization Areas (SA)**, that represent a new radically vision. The Specialization Areas include and well represent a consistent part of the economic and scientific actors situated in the territory and contribute to increase their leadership in the respective theme. The Specialization Areas identified so far are as follows: 1. Aerospace 2. Agri-food 3. Green industry 4. Creative and cultural industries 5. Health industries 6. Advanced manufacturing 7. Sustainable mobility e-MOPOLI is in line with **SA 3-Green Industry and SA 7–Sustainable mobility**. **SA 3 - Green Industry** **The production system** The green industry SA includes over **40,000 businesses** with approximately **190,000 employees**. The green industry is composed of a rich and varied system of skills, which include: **energy and cleantech** (power generation, renewable energy, water management and purification, smart grids, energy efficiency and sustainable building) and **green chemistry** (production of chemical products and energy from renewable sources from biomass and/or organic waste, production processes that reduce or eliminate the use of dangerous substances thus reducing the environment footprint). As far as energy is concerned, **50% of the Italian plant building industry** and approximately 40% of the Italian renewable enterprises, distributed on various levels, are situated in Lombardy. The energy production system has approximately **28,700 employees** and a turnover of **9 billion euro**. The green chemistry production system involves instead a completely new supply chain, based on the concept of **bio-refinery**, where locally produced vegetable raw material is exploited by extracting decreasing value-added substance, in a waterfall logic, converting final residues into energy. The sectors that can use the products of bio-refinery are, for instance, those of food, animal feed, chemicals and cosmetics in particular, rubber and plastic, pharmaceutical. **The research system** **The research system** of this varied area consists of approximately **3,000 units** counting professors, researchers and temporary staff and of **200** active research and technology transfer public/private bodies, including: the University of Milan, Bicocca University of Milan, the University of Insubria, the University of Pavia, Politecnico of Milan, the **University of** Bergamo and **Brescia**, Bocconi University, Carlo Cattaneo LIUC University, the CNR, the RSE. The **priority themes** of technological development are summarized as follows: energy efficiency also in buildings, **renewable energies (biomasses, solar, hydro, geothermal, wind), emission reduction, energy storage, smart grids, power system flexibility**, nuclear energy, material recycling, reduction of water consumption and recovery, internal environmental quality, air, water and soil quality. The most important **enabling technologies** for this SA are advanced materials, industrial biotechnology, photonics, **micro and nano-electronics and advanced manufacturing systems.**

SA 7 – Sustainable mobility

The production system

The Lombard mobility industry is a comprehensive field that encompasses rubber, rail and water mobility, and logistics. **The automotive manufacturing industry** (products and processes) and **the boat manufacturing industry** are particularly important in this area.

The Lombard automotive sector counts over **43,000 employees.** It consists of more than **100 Lombard enterprises** of medium-large dimensions that operate in different automotive sectors; these are complemented by a multitude of micro, small and medium enterprises working for them on a subcontracting basis providing components, moulds and equipments. The overall turnover is estimated at around **12 billion euro**, representing 30% of the total Italian turnover generated by components. The system includes manufacturers of motorcycles, agricultural vehicles, commercial vehicles and caravans, **manufacturers of machinery**, plants and equipment (moulds, assembly equipment, industrial automation systems), design, construction and marketing of vehicle components. **The automotive supply chain in Brescia alone is Italy's second largest automotive pole** after Turin, **in terms of employees and local production units**.
Lombardy boasts an extremely vigorous supply chain for the building of **pleasure boats**, which involves leading design firms, shipyards engaged in the building of sailboats and/or motorboats, businesses specialized in fit-outs and furniture, sail makers, businesses providing maintenance, repair and refit services and logistical assistance, mooring and storage. The production system counts approximately 19,000 employees, 2,889 of whom working in refitting–repair and storage, 9,630 working in shipbuilding, 5,804 working in accessories and components and 708 in engines.
Lombardy is the **first Italian region** as regards the **number of pleasure boating companies** situated in the territory and **second in terms of employees** working for them.

The research system

The research system is composed of the following universities and research centers: **University of Brescia**, Politecnico of Milan, Bicocca University of Milan, University of Milan, Bocconi University, Catholic University, University of Bergamo, University of Pavia, CNR. The private research system includes the Brembo Research Center housed in the Kilometro Rosso Science Park, active in mechatronics and sensortronics (a joint-venture with the DaimlerChrysler Laboratory, that involves ceramic composites and base materials) and Pirelli Labs, which represents the centre of technological excellence of the Pirelli Group.
The **priority themes** of technological development include: structural weight reduction; reduction of CO2 signature **through alternative transmissions and fuels;** development and dissemination of innovative and efficient urban goods logistical systems through sustainable means; **related vehicles (control systems); vehicle safety systems; advanced materials.**
The most strategic **enabling technologies** for this area are advanced materials, **micro and nano electronics, systems for advanced manufacturing and nanotechnologies.**

The Challenge of Lombardia Region

A system of dynamic, diversified and broad production and scientific skills, crossing the various SAs, such as the Lombardia Region system, has strong

	potential for convergence and cross- fertilization, which must be decoded and exploited to accelerate the **evolutionary process and establishment on the market of emerging industries and transformation of the mature industry**. The challenge that Lombardia Region faces is therefore to help the production system **seize and intercept new market opportunities** within the SAs through the evolution of their traditional industries into emerging industries, by addressing the needs of the new markets (strengthening the market-driven approach) and helping improve the quality of life of its community (society-driven approach). **The challenge will be addressed by:** 1. Tools (clusters, Open Innovation, ICT technology, cross-fertilization and new form of collaboration) supporting the creation of enabling environments for enterprises so they can grow and evolve into emerging industries. Particular attention will be given to **clusters and other enterprise aggregations** as tools to create enabling conditions for the birth and growth of emerging industries. Through the previously described path, a total of 9 Regional Technology Clusters have been created so far in the following areas: Agri-food; Aerospace; Green Chemistry; **Energy**, Construction and Environment; Smart Factory; **Land and Sea Mobility**; Life Sciences; **Smart Communities Technology; Living Environment Technology.** 2. Promotion of **specialization policy targets**, supporting manufacturing industry with direct effects on micro, small and medium-sized enterprises. 3. Active involvement of local, regional, national and EU stakeholders. 4. **Concrete Roadmap including Lines of action** 5. Regional **financial instruments**. ***** (Source: Executive Summary of research and innovation strategies for smart specialization in Lombardia Region) **R2.** Lack of coordination among different departments, strategies and policies at all levels of Public Administrations (i.e. air quality, energy, environment, mobility, RIS3, ...).

5.2 Calabria Region

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Lack of perception of environmental problems of end-users and of local authorities leads to a lack of diffusion of e-vehicles and related charging spots. **B2.** High cost of Electric vehicles and lack of charging infrastructure caused the lack of e-mobility diffusion. **B3.** "Traditional" mobility is still rooted in cultural beliefs with a consequent distrust of new technologies applied to mobility and transports (i.e. e-mobility). **B4.** Should be encouraged of the use of LNG (liquid natural gas) for long-distance private mobility to replace heavy haul diesel. **B5.** The regional and local enterprises should exploit the cooperation with local University and research centers that are investigating new opportunities for e-mobility with the experimentations of new vehicles (such as retrofit) and prototype. Some good opportunities are nowadays offered by Regional Universities (University of Calabria - UNICAL & Mediterranean University of Reggio Calabria) projects and experimentation on electric vehicles and infrastructure in cooperation with local SMEs and enterprises.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** At National level, it is valid what is was already described in the previous box of Province of Brescia. However, in Calabria Region e-mobility is at an early stage, this is due not only to the cost of vehicles and the lack of charging infrastructures, but also to the lack of specific strategies, policies, instruments and funds that promote this alternative fuel mobility option. Moreover, there are few example of policy instruments of the Region that include sustainable and e-mobility , such as Regional Operational Programme (ROP) 2014-2020 *priority axis IV - Energy efficiency and sustainable mobility, VII - Development of sustainable mobility networks, VI - Protection and enhancement of the environmental and cultural heritage*, and The Regional Plan of Transports, but there is a lack of concrete application of these instruments. **G2.** It is necessary to update regional and local regulations with policies and incentives in favour of Municipalities that promote sustainable mobility options (i.e. e-vehicles, …). An example is offered by the promotion of city centres "Limited Traffic Zones" (ZTL) with access restriction to endothermic vehicles during particular time slots (i.e. afternoon and evening). **G3.** It's necessary to set-up and promote electric car-sharing services connections from Airports to railway stations. An example could be the case of Lamezia airport (one of the biggest airports of the Region) to its railway station. The e-car-sharing, even if with a small fleet, it is strategical to increase sustainable mobility options and e-mobility end-user acceptance. **G4.** Lack of knowledge on the potential benefits, in term of energy, costs and environmental benefits, of sustainable mobility. **G5.** Few regional incentives and funds are destinated to sustainable mobility. Regional Operational Programme 2014-2020 improvement through e-MOPOLI project should be a good occasion to exploit new opportunities in term of policies and funds for new e-mobility options, both for private and public transport.

RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents.**	**R1.** University of Calabria (UNICAL), with the support of local SMEs, enterprises and regional and local institutions, is currently experimenting retrofit technology replacing the endothermic mini-cars engine with an electric one. Nowdays, they have already produced functional prototypes and the research is proceeding in order to diffuse this technology to a larger (market) scale. **R2.** Mediterranean University of Reggio Calabria is working on following projects: 1. Mitigation of EV drawbacks trough better transportation infrastructures and tires: *the design of road pavements (by acting on composition, texture, modulus, etc.), and tires (by acting on rubber resistance) suitable for EVs by mean of regulations or research projects.* 2. Managing EV noise-related drawbacks through better transportation infrastructures and spatial planning based on the CNOSSOS directive (2015/996): *guidelines for road/tire designers to face the acoustic problems related to the EVs, and for carrying out a proper spatial planning that includes the CNOSSOS directive.* 3. Managing EV weight-related drawbacks through better transportation infrastructures and spatial planning based on NDT monitoring systems: *researches (e.g., vouchers) to study generation of surface and concealed road pavement distresses, and production of particulate matters (PM) related to the use of EVs.* 4. Managing driverless EV drawbacks through better transportation infrastructures: *researches and developing methods to study and minimize the problems related to the use of driverless EVs (safety and security-related) through the use of sensor-based technologies.* The DIIES department of the University Mediterranea of Reggio Calabria is working in these directions by means of two projects: (a) Life E-Via, which aims at developing road pavements and tires that will be suitable for EVs; (b) PRIN “Urban safety, sustainability, and resilience: 3 paving solutions, 4 sets of modules, 2 platforms (USR342)”. **R3.** Metropolitan city of Reggio Calabria is promoting and experimenting a city Car-sharing service in cooperation with the Region, Municipality and Province of Reggio. **R3.** Calabria Region is partner of COHES3ION Interreg Europe project that aims to integrate a regional and sub-regional element into Smart Specialisation Strategies (S3), so developing greater consistency across each partner region. [https://www.interregeurope.eu/cohes3ion/]. The intended outcomes of the project are to: increase the overall impact of each partner's S3; improve the links between operational programmes in the RD&I environment and public and private sectors; promote a multi-level governance model. In this framework, Calabria region is improving the Regional Regional Operatinal Programme (ROP) 2014-2020 focusing on increasing the innovation activities of companies and the strengthening of the regional innovation system, by the funding of operations aligned with Calabria S3. This project could be a good occasion for the Region to find and create some synergies between e-MOPOLI and COHES3ION in the field of RIS3, e-mobility and cooperation among local and international SMES, research centres and public Authorities.

5.3 Regional Development Agency of Gorenjska

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Electric cars are available in the Slovenian market. Though there is still a lack of certain types and brands of cars (e.g. personal car models, vehicles for heavier transport and lack of e-buses models) **B2.** It is hard to get data on total registered or sold or newly sold BEV vehicles, statistical data combine electric hybrid and BEV and in 2018 the total of the sales counts 2123 (Source: AMZS, januar 2019; https://www.amzs.si/motorevija/v-zarometu/trg/2019-01-30-slovenski-avtomobilski-trg-v-letu-2018-72-835-prodanih-avtomobilov), which does not correspond to data on newly registered e-hybrid cars. The main share comes from Toyota cars with a conventional hybrid drive (C-HR, Yaris, RAV4, Auris) that were sold in 1307. For comparison, Toyota's Prius, which may also be a hybrid, found 32 customers. Renault Zoe has found 108 customers as the best-selling electric car. Also, the 108 BMW i3 has been sold, which has only an electric motor after the renovation. Nissan Leaf, which is also available as an electric car, found 106 customers. Hyundai ioniq in all three versions (hybrid, electric and hybrid and electric car) found 96 customers, while the hybrid of the BMW 2 Series got 50 owners. VW Golf has found 43 customers in an electric or hybrid version. There are also 30 sold electric kangoos, that is, deliverers. In other words, the sale of electric cars and connecting hybrids is still very boutique despite all the incentives, as it revolves around a percentage of all cars sold (Source: AMZS, januar 2019, https://www.amzs.si/motorevija/v-zarometu/trg/2019-01-30-slovenski-avtomobilski-trg-v-letu-2018-72-835-prodanih-avtomobilov). **B3.** In 2017 1502 electric hybrid cars were registered in 2018, 2161 electric hybrid cars were registered (Source: Slovenian Chamber of Commerce, Section for passenger motor vehicles, December 2018, “Full data_Poročilo o registracijah vozil Decemner 2018”, http://www.ads-slo.org/system/app/pages/search?scope=search-site&q=elektri%C4%8Dna+vozila), up to the end of March 2019, 542 electric hybrid cars were newly registered (Source: Slovenian Chamber of Commerce, Section for passenger motor vehicles, “Poročilo o registracijah vozil Marec 2019, http://www.ads-slo.org/system/app/pages/search?scope=search-site&q=elektri%C4%8Dna+vozila) **B4.** Three thirds more in Slovenia for the first time registered new electric cars powered by electric than in 2017: ○ 50% of registered passenger cars in 2018 are petrol vehicles and 49% for diesel. The number of "petrol cars" decreased by 1% compared to 2017 and the number of "diesels" increased by 5%. The number of passenger cars on liquefied petroleum gas (LPG or CNG) and on the combinations with the aforementioned fuel increased by 2%, the number of passenger cars on compressed natural gas (SZP or CNG) and the incineration with the mentioned fuel by 9%. The number of hybrid passenger cars rose by 52% in the year 2017 and exceeded 4,600. The number of electric passenger cars was up by 68% and exceeded the number of 1,300. The number of first registrations of new passenger cars by electric power increased by 75% (Source: SURS, maj 2019: Registrirana cestna motorna vozila in prikolice, Slovenija, 2018, končni podatki; https://www.stat.si/StatWebPDF/PrikaziPDF.aspx?id=8124&lang=sl). **B5.** The network of ECS is sufficient for passenger cars and lacking for heavy vehicles, this applies also to LPG or CNG. Hydrogen charging stations are almost nonexistent, if they are set up, they do not function.

	B6. Car-sharing system is developed in major cities and airports **B7.** E-taxies are nonexistent **B8.** E-biking are slowly increasing in their use, they are especially supported by tourism sector **B9.** E-scooters existing and the number is growing **B10.** E-hybrid passenger buses and fully electric buses are slowly getting into public passenger road transport. The biggest reason for this are national subventions for the purchase of such vehicles. **B11.** Slovenia has companies manufacturing and developing and selling electric vehicles for air and water traffic **B12.** https://ec.europa.eu/transport/facts-fundings/scoreboard/countries/slovenia/energy-union-innovation_en

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** The use of alternative fuels is important in order to achieve the environmental targets in the area of greenhouse gas and pollutant emissions. . Slovenia has a target, to keep greenhouse gas emissions by +18% up to 2030 regarding to 2005 levels. However, one has to take into account the fact that traffic on some sections has doubled since 2005. Freight transport is projected to grow by between 60% and 80%, and private transport by 30% by 2030 in comparison to the year 2011. (Source: Strategija na področju razvoja trga za vzpostavitev ustrezne infrastrukture v zvezi z alternativnimi gorivi v prometnem sektorju v Republiki Sloveniji). **G2.** The Slovenian Government introduced specific objectives in order to support the development of electric mobility in the country, linked with the ambition of the Government to achieve a secure, sustainable and competitive energy supply, the increase of the use of renewable sources of energy: the development of an E-CS infrastructure on the national highways that is foreseen by the Energy Act. In 2018 there were 50 ECS are already installed on the highways - on the TEN-T network (43 -50 kW), 155 stations (< 22 kW) and 92 station (3,7 kW) (source: MZI, 2019), which already grants a certain density of the E-CS network in regards to the size of the country. From 2055 onwards, private and public transport should be fully electric driven, as stated in the Slovenian Energetic concept. The most important national regulations concerning the development of electric mobility are the following: **G2.1** Energy Act (2014): it transposes a number of EU directives concerning electricity and gas markets, energy efficiency and renewable energy sources. The purpose of the act is to ensure a competitive, secure, reliable and accessible supply of energy and energy services, taking into account the principles of sustainable development. It lays down: ○ The principles of energy policy, energy market operation rules, manners and forms of providing public services in the energy sector. ○ The principles and measures for achieving a secure energy supply, for increasing energy efficiency and energy saving and principles for increasing the use of energy generated from renewable energy sources. ○ Conditions for the operation of energy installations, Regulates the responsibilities, organization and tasks of the Energy Agency and the competences of other authorities. The purpose of the act is to ensure a competitive, secure, reliable and accessible supply of energy and energy services, taking into account the principles of sustainable development. Energy policy is the implementation of measures in accordance with the principles of this Act, the aim of which is to achieve a reliable, sustainable and competitive national supply with energy by means of promoting the following: 5.1 Security and quality of energy supply. 6.1 Balanced long-term development of energy economy considering trends in energy consumption. Energy Act directly addresses electro mobility in two articles: ○ Article 78: (9) The distribution operator shall be responsible for the development of the basic public infrastructure of fast EV chargers on the motorway cross ○ Article 382: (2) The operators or owners of public parking lots accessible to the public and the parking lots of public sector buildings shall report to the ministry responsible for the energy, about the number of E-CSs and the amount of electricity consumed at charging points. **G2.2** European Regional Development Fund: Planned diversification of various

primary energy sources, taking into account their economics.

a. Competitive energy supply (off the grid).
b. Use of renewable and low-carbon energy sources.
c. Ensuring the priority of efficient energy use over energy supply.
d. Environmentally acceptable generation, production, transmission and consumption of all types of energy.
e. Competition in the energy market.
f. Flexibility of energy users.
g. Consumer protection.

The measures to achieve those objectives are/will be determined in the following long-term planning documents: the Energy Concept of Slovenia, the National Energy Development Plan and operational and action plans for individual fields of energy supply and management.

G2.3 Cohesion fund: Based on environmental policy and environmental action program the Fund also addresses areas related to sustainable development that are clearly beneficial to the environment, namely in the field of efficient use of energy and renewable energy and in the transport sector outside the pan-European networks in the area of, among other, river and sea transport and clean urban transport. (Source: COUNCIL REGULATION (EC) No 1084/2006of 11 July 2006establishing a Cohesion Fund and repealing Regulation (EC) No 1164/94).

G2.4 Slovenian Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014 – 2020: In the priority axis Priority axis 2.4.6 the measures are, among others, dedicated to facilitating the set-up of e-mobility infrastructure.

G2.5. Slovenian Decree on renewable energy sources (RES) (2016): in transportation this decree lays down the obligation to reduce greenhouse gas emissions in the life cycle of fuels used for transport; sustainability criteria for biofuels; verification of compliance with the sustainability criteria for biofuels; methodology of calculation of greenhouse gas emissions in the life cycle of biofuels used for transport. The Decree was published in the Official Gazette on 14.10.2016. It came into force on 1.7.2017. This is the deadline when some other measures should provide the conditions for achieving the set goals. This commitment was also given by the Government of the Republic of Slovenia in the RES Action Plan, which stipulates that in order to achieve the goals of renewable energy sources, an appropriate support environment will be provided for the introduction of biofuels and other renewable energy sources in transport, as well as the promotion of the introduction of electric vehicles. The Decree determines the modalities and measures for completing and verifying the fulfilment of the obligations of fuel distributors with regard to the placing of biofuels and other renewable energy sources on the market. Overall RES energy share in transport as foreseen by the Decree: at least 6,20% in 2017, at least 7,00% in 2018, at least 8,40% in 2019 and at least 10,00% in 2020. In 2014, the share of RES in transport in Slovenia amounted to 2.6%, which is a decrease compared to 2013 (3.5%) and also to 2012 (2.9%). Depending on the absolute value in 2014 and the trend (decrease in the share), it can be estimated that the achievement of the set intermediate targets and the final target share of 10% of RES in transport in 2020 will be a rather challenging task. In 2017 renewable resources in transport amounted to 2,75% total. Therefore, the legislator included in the new Energy Act also the obligation to report on the consumption of electric energy for EVs. In 2020, EVs are expected to not account for more than 10% of all vehicles; nevertheless, charging the EV can have a significant impact on the fulfilment of obligations under the Directive and the Decree. In order to calculate the energy share of

electric energy consumption from RES in road EVs, the regulation states that the energy value of the delivered electric energy from RES is multiplied by a factor of 5 (Source: Energy Agency, February 2017). The Slovenian Government has issued and adopted the following strategies which aim at fostering the development of electric mobility in the country thanks to the installation of new publicly accessible ECS.

G2.6. The Slovenian Transport Development Strategy (2015): this Strategy promotes the use of alternative energy sources and the introduction of hybrid and electric vehicles, as well as the construction of a network of charging stations (the related charging infrastructure). According to the environmental requirements at the national level, the encouragement for the purchase of EVs will have to be initiated and a network of charging stations will have to be build, so that by 2030 there will be at least 10% transport work done without greenhouse gas emissions on Slovenian roads. In the Strategy it is estimated that by 2030, in the structure of passenger cars, around 15% of passenger cars will be electrically or hybrid (plug-in hybrids) driven. The strategy also indicates that traffic growth would be between 60% and 80% in freight transport by 2030, and 30% in the segment of passenger transport. In the document it is stated that it is necessary to provide financial incentives that will encourage individuals to purchase vehicles with environmentally friendly motor fuels. The Strategy was adopted by the Government of the Republic of Slovenia on 29th July 2015, together with the Environmental Report for the Comprehensive Environmental Impact Assessment. The measures stipulated by the Strategy address the entire Slovenian transport system and clearly and unambiguously require an accelerated drawing up of individual projects. The Strategy also stipulates the method of project preparation which must be based on actual needs, attain the objectives of economy and sustainability and eliminate problems defined in measures. The vision of the transport policy is defined as the provision for the sustainable mobility and supply to the economy with the following general objectives:

- To improve the mobility and accessibility.
- To improve the supply of the economy.
- To improve the traffic safety and security.
- To reduce the consumption of energy.
- To reduce the costs of the users and operators.
- To reduce the environmental burden

G2.7. The Slovenian Resolution on transport policy: the Resolution clearly states that the Government is committed to promote the use of more sustainable vehicles and urges the Government to achieve a better coordination to ensure the “implementation of electric mobility systems within the infrastructure or supporting electric mobility is not explicitly stated; electric mobility should be integrated into the national policies more explicitly and in more details”.

G2.8. The Slovenian Spatial Development Strategy (2004): The key framework for spatial development of Slovenia is formed by a two-stage polycentric urban system, which is defined by the Spatial Development Strategy of Slovenia, published in the Official Gazette of the Republic of Slovenia, no. 76/2004. The system consists of centers of national and regional importance, as well as centres of inter-municipal importance that are centers of functional and / gravitational areas and provide supplies, services and jobs. The centers are interconnected with the transport infrastructure of the appropriate level. The report on spatial development (2015) notes the strengthening and enhancement of the functional areas of larger centers. The centres of national significance include Ljubljana, Kranj, Maribor, Celje,

Koper, Novo mesto, Nova Gorica, as well as strengthening of the lower level centres, especially in the vicinity of Ljubljana (e.g. Domžale and Kamnik) and settlements in the axis of the main traffic axes. The centres focus on day-today migrations, the volume of which is still increasing with personal motor traffic. The document doesn't mention implementation of EVs into the transportation systems but it addresses all the other means and systems: public traffic, air, motorway (land), sea; reduction of use of personal transport means, enhancement of public transport, bicycling and walking. Under the point 5 "Integrated and Harmonized Development of Transport and Settlement Networks and the Construction of Public Infrastructure Facilities", page 27: "When constructing new infrastructure and modernizing the existing one, support shall be given to the construction of those energy generation and distribution facilities which enable a high-quality and reliable energy supply for Slovenia. When determining the location of new energy generation or distribution facilities, their optimal inclusion in the Slovenian energy network shall be ensured and excessive environmental impacts prevented while respecting the principles of sustainable spatial development."

G2.9. Slovenian National Alternative Fuels Strategy (2017): According to the prescriptions contained in the Directive 2014/94/EU, the Slovenian Government has announced its quantitative objectives in terms of E-CS and EVs in its National Alternative Fuels Strategy. Optimistic scenario sketched by the Slovenian Government: - By 2020, the Government plans the installation of 1.200 E-CS throughout the country. - By the same year, 5.311 registered EVs are previewed by the Government. If Slovenia is to achieve its alternative fuels targets by 2030, in addition to measures for improving public transport, it has to ensure that at least 17% of the cars travelling on its roads are electric or plugin hybrids (200,000 vehicles), 12% of light commercial vehicles are electric (11,000 vehicles), a third of all buses run on compressed natural gas (1,150 buses) and almost 12% of heavy goods vehicles (just over 4,300 vehicles) run on liquefied natural gas. As the number of vehicles running on alternative fuels will increase, the number of charging and filling stations will have to be increased also, on motorways and elsewhere. Slovenia is one of the first countries in Europe to have installed high-powered e-chargers on its motorway network. This network will be significantly expanded over the next five years, enabling Slovenia to provide coverage of the Trans-European Transport Network (TEN-T) with chargers. With the projected growth in traffic, Slovenia will require 1,200 standard-power chargers for domestic transport by 2020, rising to 7,000 by 2025 and 22,300 by 2030.

Slovenia's main actions and measures are listed and described in the National Alternative Fuels Strategy. According to the Strategy, after 2025 Slovenia is going to limit the first registration of passenger cars and light-commercial vehicles of categories M1 and MG1 and N1, which, according to the manufacturer's declaration, have CO2 emissions above 100 g/km. Five years latter (after 2030) this limit will drop to 50 g/km. The Strategy supports an increase in the number of E-Vs, hybrid vehicles and vehicles using fossil fuels that have a lower adverse impact on the environment than the vehicles we use today.

The Strategy proposes sets of measures for each alternative fuel, on the basis of which a detailed Action plan for 2018–2020 is being drawn up (at the moment Action plan is in the proposal phase). Priority is given to measures that establish a charging infrastructure for electric vehicles and for vehicles using compressed and liquefied natural gas; this will enable the government to promote the increased popularity of vehicles that run on

alternative fuels. Measures are envisaged for all areas, from financial incentives, co-financing of the construction of alternative fuels infrastructure and amendments to legislation, to the promotion of innovative solutions, the acceleration of economic development, public information and the removal of administrative barriers. Measures relevant for e-mobility are described below. Action plan will be updated every two years.

The action plan sets out in detail the resources for the implementation of the individual measures, deadlines and development stakeholders. Financial incentives for the purchase of electric and plug-in hybrids, exemption from the payment of various fees for electric vehicles, free parking, etc. will certainly remain part of these measures.

Slovenia promotes the purchase of alternative-fuel vehicles through subsidies for electric vehicles, which are also exempt from payment of annual fees for use of vehicles on roads. There are also favorable loans available for purchasing EVs, E-motorcycles and electric or hybrid-drive bikes whose CO2 emissions are less than 110 g/km. Vehicles with CO2 emissions less than 110 g/km are charged a lower rate (0.5%) on their motor vehicle tax. Some municipalities and providers offer free parking and charging of EVs.

Measures to fulfil commitments according to the optimal scenario are divided into different areas that can together ensure that the objectives are achieved. The measures are interdependent and only as a whole guarantee that Slovenia will be able to fulfil various commitments in the field of transport. Measures are described below.

- Promoting the development of technologies and the economy
- Harmonization of the key features of EVs with ICE vehicles (range, price, use of batteries) is expected by 2025. This is regarding to alternative fuels targets relatively late. Measures are foreseen in the field of innovation, research and promotion of the economy.

G3. Slovenian National Alternative fuels Action plan (2019):Measures:

- financial and tax incentives,
- elimination of administrative barriers,
- green procurement,
- charging infrastructure co-financing,
- promotional and educational activities,
- recommendations to local communities,
- recommendations to employers,
- parking policy.

Value of measures altogether for 2018 amounts to € 13,7 MIO (€ 11,1 MIO is already guaranteed). For 2019 the estimated value of the measures amounts to € 35,1 MIO (out of which € 19,4 MIO is already guaranteed) and for 2020 to € 57,3 MIO (€ 30,6 MIO). (Source: Presentation of Mr. Bojan Žlender, of Ministry of Infrastructure. Ljubljana, 14.3.2018).

RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents.**	**R1.** SRIP GIZ ACS: development and innovation partnership on the area of mobility: Working group of state secretaries for implementation of Slovene Smart Specialization Strategy (DSDS S4) has fully supported and confirmed Action plan SRIP ACS+. Work is directed towards the development of new products, solutions and technologies in focus fields (with product lines), in accordance with the approved action plan. ○ Systems for e-mobility and energy storage (Systems and devices for the main electrical drives of vehicles, Systems and devices for the auxiliary electrical drives of vehicles, Systems and devices for energy storage and thermal management) ○ Niche components and systems for cleaner and more efficient internal combustion engines (Advanced systems and devices for data capture, Advanced drives and actuators for environmentally-friendly internal combustion engines, Advanced integrated components) ○ Systems and components for safety and comfort (Actuator systems, Electronic and sensor systems, Active-passive structural components) ○ Advanced transportation and logistics including business models (Data driven cooperative economy, Fleet management, optimization of logistics systems as well as business and technological solutions that will be integrated into the systems of mobility and logistics) ○ Advanced infrastructure (Digitalized and integrated infrastructure, Charging infrastructure) ○ Digitization, new technologies and new materials to achieve higher competitiveness **R2.** Slovenian smart specialization strategies (S4) ○ Area: Smart cities and communities: ○ Energy supply and other: Conversion, distribution and management of energy, Comprehensive support for the implementation of water services ○ Mobility, transport and logistics: Infrastructure, smart algorithms, integration with ICT, Building blocks of digitized mobility in a smart community, Business models, platforms, collaborative economy, shared transport ○ Area: Sustainable tourism: ○ Technological solutions for the sustainable use of resources in accommodation facilities: Technological solutions for e-mobility and other objectives. ○ Area: Mobility: ○ Systems for e-mobility and energy storage: Systems and devices for main electric drives of vehicles, Systems and devices for auxiliary electrical drives of vehicles, Systems and devices for energy storage and 'thermal management ○ Niche components and systems for cleaner and more efficient internal combustion engines: Advanced data acquisition and data acquisition systems, Advanced drives and actuators for environmentally-friendly internal combustion engines, Advanced integrated components ○ Systems and components for safety and comfort: Advanced integrated components, Electronic and sensor systems, Active-passive structural components ○ Advanced transport and logistics including business models: Sharing economy, Logistic optimization and transport management, Business models for providing flexible personalized green mobility services

	○ Advanced infrastructure: Digitized and integrated infrastructures, Charging infrastructure ○ Introduction of advanced materials and technologies through automation of production processes **R3.** Strategic Energy Technologies Information System (SETIS), EU level Energy Union Research, Innovation and Competitiveness Priority, Sustainable transport 1. Batteries for e-Mobility and Stationary Storage 2. Bioenergy and renewable Fuels for sustainable transport One of the core priorities of the Energy Union strategy is to speed up the energy efficiency and decarbonization of transport sector through research and innovation in e-mobility and in renewable fuels. Electric vehicles (EVs) will play a major role in meeting Europe's need for clean and efficient mobility. In addition, the goals towards low-emission mobility will also require significant volumes of advanced second-generation biofuels from sustainable sources. (Source: European Commission, SETIS, 2019: https://setis.ec.europa.eu/low-carbon-technologies/sustainable-transport)

5.4 Region of Attica

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Low integration of alternative fuel market in EVs (both car imports and equipment, batteries, chargers etc.). **B2.** Few companies related to supporting equipment, chargers etc. have managed to increase their turnover – most of them dealing directly with the private sector supplying parking facilities, hotels etc. – low integration to the supply of public authorities, municipalities, regional bodies and highway concessionaires. **B3.** There is also a gap in business models regarding the operational framework and key activities. **B4.** The economic recovery of the car industry in Attica, and hence the alternative fuel market, is still struggling to become the norm although performance indicators show improvement. A prominent reason for that is the high numbers of diesel cars and compatible car fleet that remain in stock, along with the secondhand market that has stocked enormous numbers of compatible vehicles due to the lack of incentives for replacement. **B5.** In the field of electric vehicles, sales are practically non-existent. The reason is initially the very high acquisition cost of the EV's and the lack of charging network infrastructure. **B6.** In the field of chargers, companies have been initially established in the prefecture for the purpose of pre-posting on the market (before widespread electrification). There are charger installations mainly in public off-road parking areas, but they are not in fact used. As a marketable item, chargers have also been sold and installed in public buildings, mainly without any maintenance. **B7.** Public Transport Fleet: Athens is home to Greece's largest mass transit system. The area's main operator of buses and trolleys is OSY, with a network of 300 bus and trolley lines and a fleet of some 2.022 buses (average age 13,9 years) and 354 trolley electric buses (average age 15,3 years). 610 of buses run on compressed natural gas (CNG) being one of Europe's largest fleets of CNG-powered buses. Diesel buses (1412) continue to represent the largest part of the bus fleet. Athens Urban Transport Organization (OASA) is in need of replacing ageing bus units in order to meet current standards, increase efficiency and passenger comfort and reduce transport related emissions. **B8.** Private Vehicles: Electric mobility is at an early stage of development in Greece .The commercial availability of EV models in Greece is limited in comparison to the biggest EV markets in the EU. In 2017 the EV market share in Greece jumped up from 0.06% to 0.19 % with the market almost tripling in volume, achieving a market growth of +243%. The most significant trend is the turn of consumers towards Plug-in Hybrid Electric Vehicles (PHEVs) which accounted for 80.1% of the total sales (+821%). The sales of Battery Electric Vehicles (BEVs) remained stable (-3%), indicating market stagnation, due to lack of fiscal incentives and supporting infrastructure, was significant for electric mobility in Greece. **B9.** Importers are reluctant to bring to market electric models due to the economic crisis (lack of Banking support, need to invest additional capital in personnel training, diagnostic equipment and spare parts stock under the existing condition of extra heavy taxation etc.) **B10.** Lack of adequate incentives to offset the higher price of an electric car in comparison to a conventional one **B11.** Lack of supporting infrastructure for electric car circulation both within the

	urban environment (High-rise buildings without provision of parking places, narrow streets that do not allow roadside charging stations, lack of adequate municipal open spaces etc.) and also along the national road network where there is a complete lack of fast charging stations. **B12.** Inadequate formation of public opinion and/or the administrative personnel regarding the urgent need to reduce atmospheric pollutants and carbon dioxide, in particular in urban environment and also for the relevant (but hidden) high costs of public health

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** The introduction of electromobility and alternative fuels is yet to be a matter of concern for the majority of government bodies and ministries. Most European Directives have been embodied in the Greek legislation -although not thoroughly in several cases, followed by a shortage of further legal actions and policies. These have mostly determined the lack of electromobility growth in Attica Region and Greece in general. The lack of economic and social incentives is another key factor of the current e-mobility integration failure. Sustainable mobility plans – SUMPs- were recently regulated, however failing to highlight the compliance and importance of SUMP measures concerning e-mobility, driving more and more municipalities and public entities to ignore e-mobility actions and policies while conducting the action plan of SUMPs. **G2.** There is a significant need to abolish the luxury tax on EV's. There is practically no reason to levy such tax on this type of vehicle, irrespective of their equipment. Instead, it is considered appropriate to provide financial incentives through the reduction of taxes (VAT, registration taxes etc.) and the reduction of tolls on motorways. At the same time, it is appropriate to mandatory force (through legislation) that every municipal vehicle to be replaced should be with an EV. **G3.** With the recent legislation (4-6-2019), an initial framework of regulations and instructions for the installation of chargers was created. It is necessary to have corresponding instructions through ministerial decisions for further specialization, e.g. firefighting devices etc., which will assist in the expansion of their installation. In addition, it is appropriate to immediately issue a decision on the operating conditions of chargers for EV chargers. **G4.** Public Transport Fleet: The potential of clean buses is far from being really utilized in the EU, owing also to still wide-spread concerns about technological reliability and high costs, particularly of battery-electric and fuel-cell electric buses. Diesel buses continue to represent the largest part of the urban bus fleet. Athens Urban Transport Organization (OASA) strongly supports the bus fleet renewal over the next years, through the deployment of clean and efficient vehicles that can offer considerable advantages such as reductions in emissions of greenhouse gases, air pollutants and noise. Moreover, moving on quietly and smoothly means greater passenger comfort and new opportunities for routes, making public transport more attractive. OASA is planning to use 30 million euros in funds from the Attica Regional Authority for the purchase of 92 state-of-the-art buses, of which 80 will meet EURO VI emission standards and 12 will be electric ones. To this end, OASA is reportedly planning to soon launch an open electronic international tender. Furthermore, OASA in cooperation with the Ministry of Infrastructure and Transport, is seeking for new funding from the 2014-2020 NSRF of € 302 million for the procurement of 100 diesel buses Euro VI, 330 buses CNG and 320 electric buses. **G5.** Private vehicles: Greece implemented for the first time a package for the support of EVs' penetration in the market in 2010, according to which, electric vehicles and low engine capacity hybrid and fuel cell cars registered before November 2010 were exempt from the annual circulation tax. Following November of 2010 the vehicle circulation tax was reformed to support green mobility and thus became CO2 emissions based. Accordingly, vehicles are now taxed based on CO2 g/km which ranks all EVs in the lowest category of 90 g/km which are exempt of circulation taxes. All-Electric Vehicles are also exempt from luxury and luxury commodity tax charge since 2013, while hybrids received a 50% discount respectively. **G6.** Need for further simplification, rationalization and avoidance of multi overlaps of responsibilities throughout the legislative framework which regulates the

	issues of proliferation of electric vehicles and the creation of supporting infrastructure. **G7.** Need for immediate reconsideration of urban building regulations aimed at e-mobility friendliness of all new constructions and to improvement of the existing buildings so that the electric vehicles to be recharged easily when parked and when traveling. **G8.** Need to adopt a specialized advisory body for the coordination of the involved Ministries and other departments about all necessary decisions that affects the rapid spread of e-mobility.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Examining the extensive manuscript of the RIS3 Smart Specialization Strategy of the Attica Region, there is no reference regarding specific measures about promotion and strategic planning concerning electromobility and extensive use of alternative fuels in the transport sector, although there appear to be general, but ill-defined indications pointing in this direction. References also miss to deal with the overall logistics sector in regard to the supply-demand chain and common public transportation alternatives, which would allow e-mobility to be indirectly supported through the RIS3. **R2.** In Greece there is an important research inventory that could deal with research into electrification. **R3.** One area is the research on the performance of EV chargers and the EV's themselves in Greece in varying conditions (Crete - Northern Greece have significant variations in the intensity of climatic data). **R4.** The Attica region through its RIS3 strategy aims to strengthen its capacities and develop infrastructure among local authorities, educational and research centers, private SMEs and to become a leading metropolitan center for innovation research, production and export in the wider region of Eastern Mediterranean. In this context, one of the RIS3 priorities is smart transport. So far the region's indicative actions towards smart transport are considered to be very poor. **R5.** Extensive programs of information/training of various social groups and age-targets about the benefits of the electrification of vehicles and popularization of relevant technology **R6.** Planning of Incentives packages for the transition to electric mobility of various professional fleet or corporate entities **R7.** Strategic planning and financial facilities for creation of a basic national fast and superfast charging station's network along the primary public roads of mainland.

5.5 Flemish Government Department Environment

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Electric cars are available in the Flemish market. Though there is still a lack of certain types of cars (e.g. for heavier transport) in an electric version **B2.** 4,0 % of newly bought cars in Flanders are considered environment friendly. Within this percentage 1,6 % cars are electric, 1,6 % is a plug-in hybrid and 0,8 % drives on CNG. **B3.** The car sector itself, i.e. mechanics and car sellers, is not so convinced yet about EV's as it implies big changes in their current business model (e.g. regarding reparations) and job opportunities. **B4.** Charging infrastructure is unfolding (today, more than 3000 public charging points are operational) **B5.** Electric car share concepts are developing, stimulated by our green deal 'shared mobility' (280 electric shared cars were introduced after one year) **B6.** Increased uptake in niche fleets, e.g. taxi's and company fleets (electric company cars had a market share of 7 % in March 2019).
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Clean power for transport action plan with concrete goals and measures for the period 2016-2020 **G2.** Fiscal measures to make electric cars more attractive for individuals and companies (e.g. no taxes for EV's) **G3.** Implementation of CP specific regulation, e.g. public service obligation for basic charging infrastructure **G4.** Measures to establish basic charging network, e.g. a project to finance various CP infrastructure projects, European project on interoperability of charging points **G5.** The organization of a group purchase of electric cars. **G6.** Subsidized projects regarding CPT (about 1 million euros a year), e.g. car sharing, company cars, niche fleets. **G7.** Yearly evaluation reports on the implementation of the action plan **G8.** Policy guide for local governments **G9.** 3 campaigning periods spread over 4 years to inform citizens about EV's and take away their worries regarding range anxiety, enough charging possibilities, and the number of available electric models. **G10.** Needs: regulation on price transparency, more economic stimuli to decrease the price gap, action plan with measures and targets for 2025 - 2030, framework and stimuli for smart grid applications.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** VUB Mobi (Mobility, Logistics and Automotive Technology Research Centre) **R2**. Creation of a CPT team for information exchange between stakeholders **R3.** Financing of CPT specific research studies, e.g. potential of electric mobility in Flanders or about possible fiscal measures. **R4.** Open access map visualizing the charging infrastructure network **R5.** Set-up of pilot and demonstration projects **R6.** Follow-up and communication of European financing opportunities for CPT research and innovation projects **R7.** European project on interoperability of charging stations (IDACS)

5.6 Regional Council of Kainuu

Project Thematic Areas	Current situation
Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** The sustainable (= economically feasible) uptake of 'alternative vehicles' solutions requires a market, both a supply and a demand market. The demand market is still weak in Kainuu (and Finland). The market uptake of alternative fuels cars is not yet self-evident especially as the cars are much more expensive and as their charging seems to be required at too short distances -for Finnish context- and Finland is a big country.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** There is no feasible pilot in the region being updated about what it works and what not in terms of uptaking alternative fuel vehicles. **G2.** Finland's new government announced on 4.6.2019 that the country will aim to cut its carbon emissions completely by 2035. It will obligate Finland to reduce its carbon emissions to below the amount that can be absorbed by forests, wetlands and new technologies. The new target will require an update of the existing Climate Act, which currently pegs climate neutrality in 2045. Lawmakers also want to change the law so that Finland becomes a carbon negative country by at least 2050. Norway wants to achieve the same goal by 2030 but Finland's differs in that it will not rely on buying international carbon credits and offsets like its Nordic neighbor (Finland pledges carbon neutrality on eve of EU presidency – EURACTIV.com). A full review of the plan is already scheduled for 2025. This commitment will impact also the innovation, business and educational policies and priorities, at national and regional levels. It will not cancel the innovation investments that have already been in process (example: Finnish good practices introduced in the kick off meeting, VTT, Vaasa and so on), however it will focus them more and emphasize quantifiable results, more effectiveness. Alternative fuels will be a strong priority -as they have been for a while now, in both Finland and Kainuu. Uptake of solutions valorizing alternative fuels will be part of the priorities.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Kainuu RIS3 is emphasizing on alternative fuels and circular economy. This will be reinforced. Electrical mobility is not part of the RIS3. Kainuu RIS3 is aligned with national priorities as well. The Kainuu RIS3 will be revised till the end of 2019.

5.7 Rogaland County Council

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** The use of zero emission vehicles and electric bikes is increasing in goods deliverances. **B2.** The two main bus lines in the city of Haugesund, Rogaland, were electrified in the summer of 2020. There are now 22 electric buses in Rogaland. The rest of the buses in Rogaland have Euro VI standard as a minimum. **B3.** In 2019, 11,24 % of the private cars in Rogaland were 100 % electric. (26 620 out of 236 835 private cars in total) (source: SSB.no). he share of 100 % electric private cars in Stavanger municipality was 13,39 % in 2019 (7899 out of 59 003 cars in total) (source: SSB.no). **B4.** Rogaland county council is the project leader in the Horizon 2020 project "TrAM", that will result in a battery electric passenger ferry that will be put in in commercial operation in Rogaland by 2022. **B5.** In 2020 the shared electric city bike system in Rogaland has been upgraded with 750 new and improved electric bikes. The number of charging stations for the electric city bikes has also been increased. **B6.** The first electric car ferry in Rogaland will be put in traffic from 2021.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** On national level: "The Government has established targets for new zero-emission vehicles. All new passenger cars and light vans sold in 2025 shall be zero-emission vehicles. All new urban buses sold in 2025 shall be zero emitters or use biogas." Source: From the English summary of the National Transport Plan 2018–2029. **G2.** The regional transport strategy is based on national guidelines. The regional transport strategy focuses on an attractive and environmentally friendly/sustainable city development. **G3.** The regional transport strategy describes that one of the main challenges in city areas is to make public transport, biking and walking more attractive to reduce emissions from passenger cars. There is also a need for an environmental strategy, to convert more and more of the public transport to low and zero emission vehicles. **G4.** Rogaland county council is the project owner and project leader of the building of a 50 km BRT-system. The first line is planned to open in 2023. There is a political decision that the buses will be zero emission buses. **G5.** A decision has been made to reduce the incentives for BEVs. The toll roads and ferries are no longer free for BEVs but charge 50 % of the fossil fuel car rate.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents.**	**R1.** Rogaland County Council does not have a RIS3 Smart Specialization Strategy document but is developing one.

5.8 Bucharest-Ilfov Regional Development Agency

Project Thematic Areas	Current situation

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Possibility of financing the projects regarding ○ the installation of the necessary charging infrastructure for electric and hybrid vehicles , under Priority Axis 3 - Supporting the transition to a low-carbon economy, investment priority 3.2 ○ Promoting CO2 reduction strategies in urban areas, Section B ○ Investments for electric and non-motorized transport, in particular the construction of charging stations. **B2.** Bucharest-Ilfov region has submitted for approval a number of 9 projects aiming to modernize the public transport infrastructure, by purchasing electric buses and, implicitly, installing the necessary charging infrastructure. Currently all projects are approved and are to be implemented. **B3.** National funds granted by the Ministry of Environment through the National Environmental Protection Agency Bucharest - Ilfov, funds destined to the development of electric vehicle charging infrastructure. The program was launched in 2016 and initially covered urban areas, currently focusing on infrastructure development on major roads to connect cities. This program aims to install 6000 power points by 2020. The program is intended for legal entities, namely city halls with more than 50,000 inhabitants, public institutions and economic agents in such cities, but also to economic agents whose social offices or work points have direct access to motorways, European roads and national roads, and will receive from the state a grant of maximum 80% representing a maximum of 200,000 euros per project. **B4.** There are 88 charging stations in the Bucharest-Ilfov region, 25 more than in July 2018, up 39.7%, including both public and private loading stations. **B5.** Regarding the fleet of electric cars, there is a strong trend in the growth of electric vehicle purchases, so in 2017 the sales of electric vehicles increased by 162% compared to the previous year. Also, in 2018, the trend was maintained, reaching about 700 electric vehicles at the end of 2018, compared with only 309 at the beginning of the same year.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** National Environmental Protection Agency is implementing a national program to stimulate the greening of transport in all regions of the country by encouraging the procurement of new full electrical cars by offering financial incentives, about 10.000 euro/ per car and 5.000 euro/ per car if it is plug-in hybrid. In 2018 the budget has covered about 2.000 new electrical cars and the main rule is that the amount of this bonus may not exceed 50% of the contract price of the vehicle. It is a program that is implemented and funded annually by the Romanian government. **G2.** Project of the Bucharest City Hall for granting 500 vouchers amounting to approximately 2100 euros/each for individuals or legal entities that own commercial premises and want to install charging stations in their car parks. **G3.** The “e-Mobility Week” campaign is the first one of its type in Romania and it’s dedicated entirely to informing, educating and acknowledging the benefits of ecological mobility. For the first time it was organized on October 2016. The campaign also focuses on two of the most pressing environmental issues – CO2 emissions and climate change.

RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** RIS3 in Bucharest Ilfov Region is in the elaboration phase, a team of experts both from ADRBI and external professionals working to define it. **R2.** There are research institutes in the field of electrical engineering, such as the National Institute for Research and Development in Electrical Engineering from Bucharest, which is, moreover, co-opted as a stakeholder in our project. Their involvement in the project activities shows their openness in terms of promoting electro-mobility in the region. **R3.** Private companies operating in this field have a total openness in terms of promoting electro-mobility and these are attracted too by the idea of the project. **R4.** At the level of Bucharest - Ilfov region, a strategic plan for the greening of transport, called the Urban Durable Mobility Plan, is designed. It regulates and contemplates the development of mobility with zero CO2 emissions.

5.9 Zemgale Planning Region

Project Thematic Areas	Current situation
Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Available charging stations already installed in Zemgale Region – 16 (including 11 fast charging stations on main roads). **B2.** Number of electric vehicles in Zemgale Region -16 (cars). **B3.** Number of vehicles using alternative fuels in Zemgale Region – 6 (CNG). **B4.** Car dealers provide 11 models of electric cars as well as service and maintenance for sold electric cars during the warranty period. **B5.** The State support scheme for the purchase of electric cars in 2014 was one of the first initiative to promote electric vehicle use in road transport. Municipalities had 85% subsidies, while establishments had 50% subsidies from full price of electric vehicles. **B6.** Electric car marathons in Latvia have been organized annually since 2015 in order to raise public awareness on electromobility.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** The Electromobility Development Plan for 2014-2016 includes the review of current state of the field, defines priorities, proposes financing volume and sources and most important defines concrete tasks with deadlines which should be implemented and this plan is still in charge. **G2.** The Alternative Fuels Development Plan 2017-2020 identifies the current situation in the field of alternative fuels and determines the measures to be taken in order to introduce alternative fuels in Latvia. **G3.** There is free of charge parking for electric vehicles in Latvia capital Riga. EV users have the right to use EV in the public transport lane. **G4.** BEV is exempted from passenger car and motorcycle tax, from vehicle operation tax, EV has a reduced payment for technical inspection. **G5.** Faculty of Engineering of Latvia University of Life Sciences and Technologies has the study courses covering the topics about electromobility.G2. Project of the Bucharest City Hall for granting 500 vouchers amounting to approximately 2100 euros/each for individuals or legal entities that own commercial premises and want to install charging stations in their car parks.

RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Research on electromobility and alternative fuels are performed by researchers from the Faculty of Engineering of Latvia University of Life Sciences and Technologies during the last 10 years. **R2.** Several experimental vehicles and solar charging point were created during the research project “Usage of electro energy in motor vehicles of physical persons”. **R3.** Both state owned companies and private companies have commissioned a small contract type research related to performance and environmental characteristics of different type of electric vehicles and alternative fuels applications in existing vehicle fleet during the last 10 years.

6. Gap Analysis

6.1 General Information

Gap Analysis is conducted in order to reveal the current situation and the deficiencies prevailing in a specific sector or field. It gives an overview about the progress that has been achieved and whether the goals defined have been fulfilled. Through the gap analysis the space between the current and the target status is defined and clarified enabling the formulation and set of the next steps and actions that should be planned and implemented in towards the goal satisfaction.

Within the e-MOPOLI project, each region conducted a gap analysis where the three thematic areas (business, governance and RIS3) were evaluated. Each of the three thematic fields was subdivided in various aspects and each one was evaluated on a scale from level 1 to 10. Level 10 indicates the highest level of performance or implementation and level 1 the lowest.

The chapter concerning Gap Analysis is organized as follows. Firstly, the thematic areas and the individual aspects are presented and further described. In the next section the results of the Gap Analysis for each region is presented while a comparative analysis between the regions is included in the last section of the chapter.

6.1.1 Business

The thematic area Business was divided in the following aspects (Fig. 4):

- Charging Infrastructure: Available charging stations already installed in the Region
- e-Vehicle fleet: Number of electric vehicles in the Region
- Alternative fuel vehicles fleet: Number of vehicles using alternative fuels in the Region
- Technology: Existence of the available technology to support the use of electric and alternative fuels vehicles.
- Incentives: Incentives given to the industry/companies in order to motivate and encourage them to be involved in these aspects of electromobility and alternative fuels and improve the technology they use.
- Campaigns: Campaigns organized by the industry and the private sector for raising public awareness about electromobility and alternative fuels.

Fig. 4: Aspects of the thematic area Business

6.1.2 Governance

The thematic area Governance was divided in the following aspects (Fig. 5):

- Legislation: The existing legal framework and policies established favoring the use and purchase of electric vehicles
- Enforcement: Enforcement of regulatory changes, laws, directives and standards for the promotion of electromobility and increase of the share of electric vehicles and alternative fuels in the fleet.
- Education: Inform students about the advantage of electromobility and alternative fuels. Incorporation of electromobility sessions and courses in the relevant universities.
- Incentives: Incentives given to the private and public sector by the state and the public authorities
- Campaigns: Campaigns organized by public authorities, regions and municipalities for raising public awareness about electromobility and alternative fuels.

Fig. 5: Aspects of the thematic area Governance

6.1.3 RIS3

The thematic area RIS3 was divided in the following aspects (Fig. 6):

- Research: Intensiveness of research activities on technologies related to electromobility and alternative fuels concepts. Participation of research departments and institutions in promoting electromobility through the research conducted.
- Innovation: Level of innovation and experimentation in projects related to electromobility and alternative fuels
- Synergies: Level of involvement of various stakeholders in projects related to electromobility and alternative fuels
- Strategic plan: Formulation of a regional strategic plan concerning the diffusion of electromobility and alternative fuels.
- Monitoring: Existence of a sound monitoring and evaluation system in projects related to electromobility and alternative fuels.

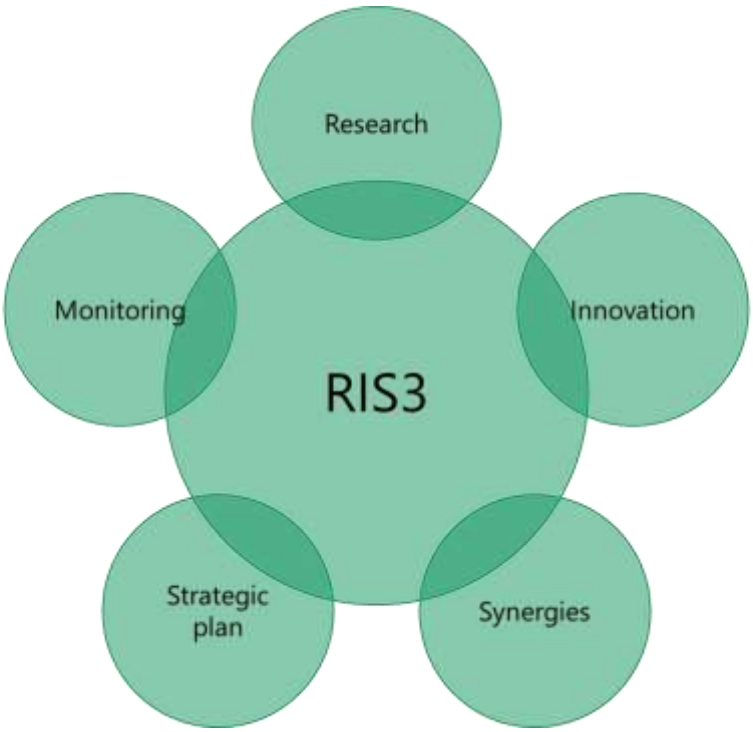


Fig. 6: Aspects of the thematic area RIS3

6.2 Gap Analysis for each project region

6.2.1 Province of Brescia

Province of Brescia has achieved significant progress in developing the required technology to support the use of electric vehicles as well as in the development of research and innovative activities and strategies for the diffusion of electromobility. Concerning governance, the existing legal framework in combination with the enforcement of regulatory changes, law and directives create a favorable environment towards the increase in purchase of electric vehicles. However, the electric vehicle is very low in the area while the concept of alternative fuel vehicles does not significantly attract the residents of the region. Campaigns for promoting the new technologies for a more sustainable and environmental friendly transportation system are not a strong asset in the province of Brescia and both the business sector and the government should elaborate more on organizing exhibitions and informative campaigns for increasing public awareness and acceptance of electric vehicles and alternative fuels.

In the area of Research and Innovation Strategies for Smart Specialization (RIS3), the province of Brescia, together with Lombardy Region, has made remarkable steps in the aspect of research activities and the intense participation of research institutions and universities in the development of technologies for making the use of electric vehicles and alternative fuels more convenient and beneficial for the users. Additionally, innovation and experimentation is also encouraged and highly progressing as it as was assessed with 8 out of 10. Finally, the level of involvement of various stakeholders is very low (Synergies were evaluated with 4/10) and its increase should be a priority for the region as one of the main goals of RIS3 is the involvement and strong cooperation among different sectors and is one of the key factors for the efficient promotion and development of electric vehicles. The results of gap analysis for the province of Brescia for the three thematic areas and their aspects are presented in Fig. 7.

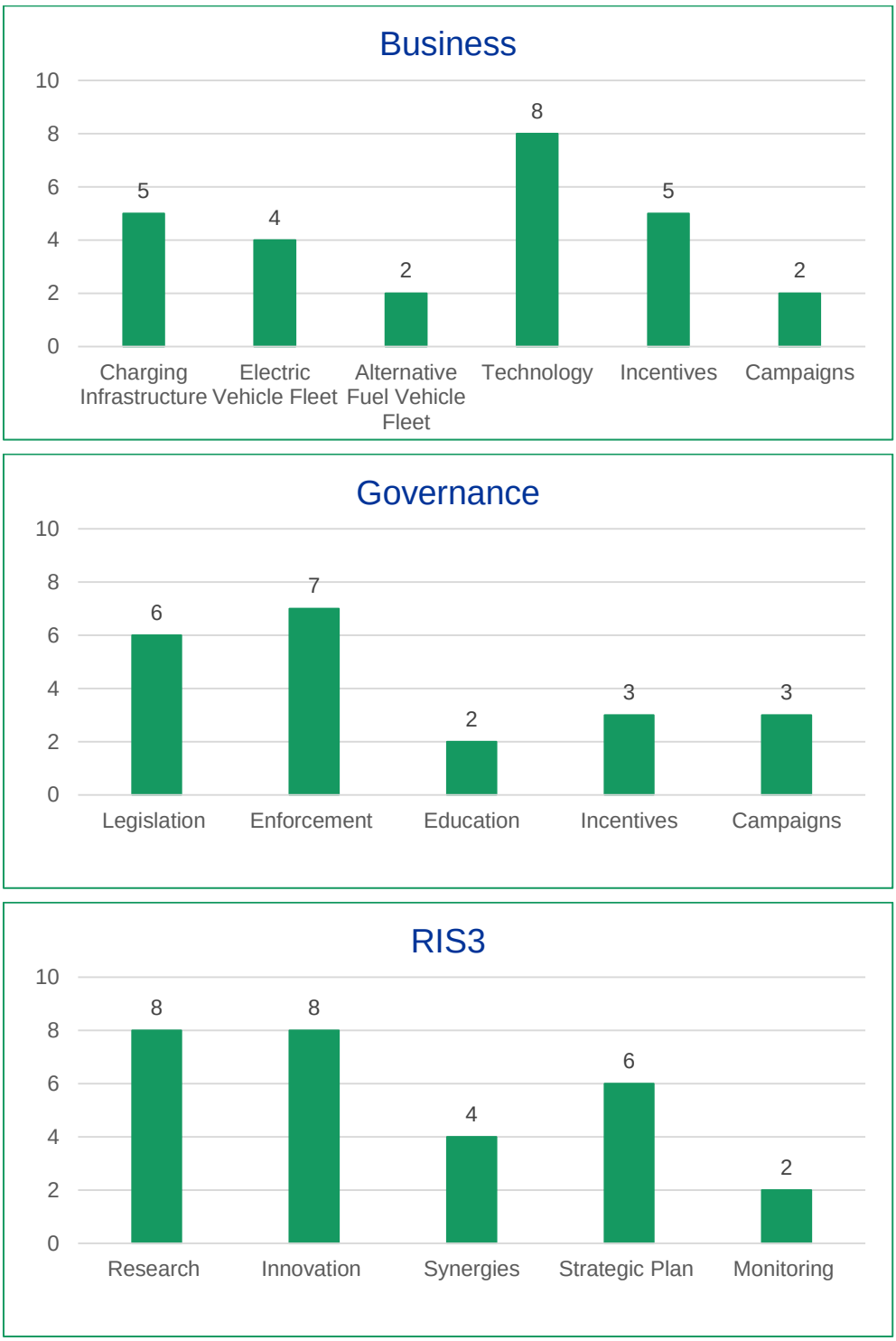


Fig. 7: Gap Analysis for Province of Brescia

6.2.2 Calabria Region

In the case of Calabria Region, average progress has been achieved in most of the aspects of the three project areas. Deficiency is observed in charging facilities indicating the need for installation of more charging stations in the region. Unfortunately, the penetration rate of electric vehicles is very low (it was evaluated with 3 out of 10) and therefore measures and actions from the government and the business sector should be formulated and taken for favoring the use and purchase of electric vehicles. Similarly to the province of Brescia, the government and industries should focus and elaborate more on the organization of campaigns for promoting the concept of electromobility and inform people about their advantages and characteristics.

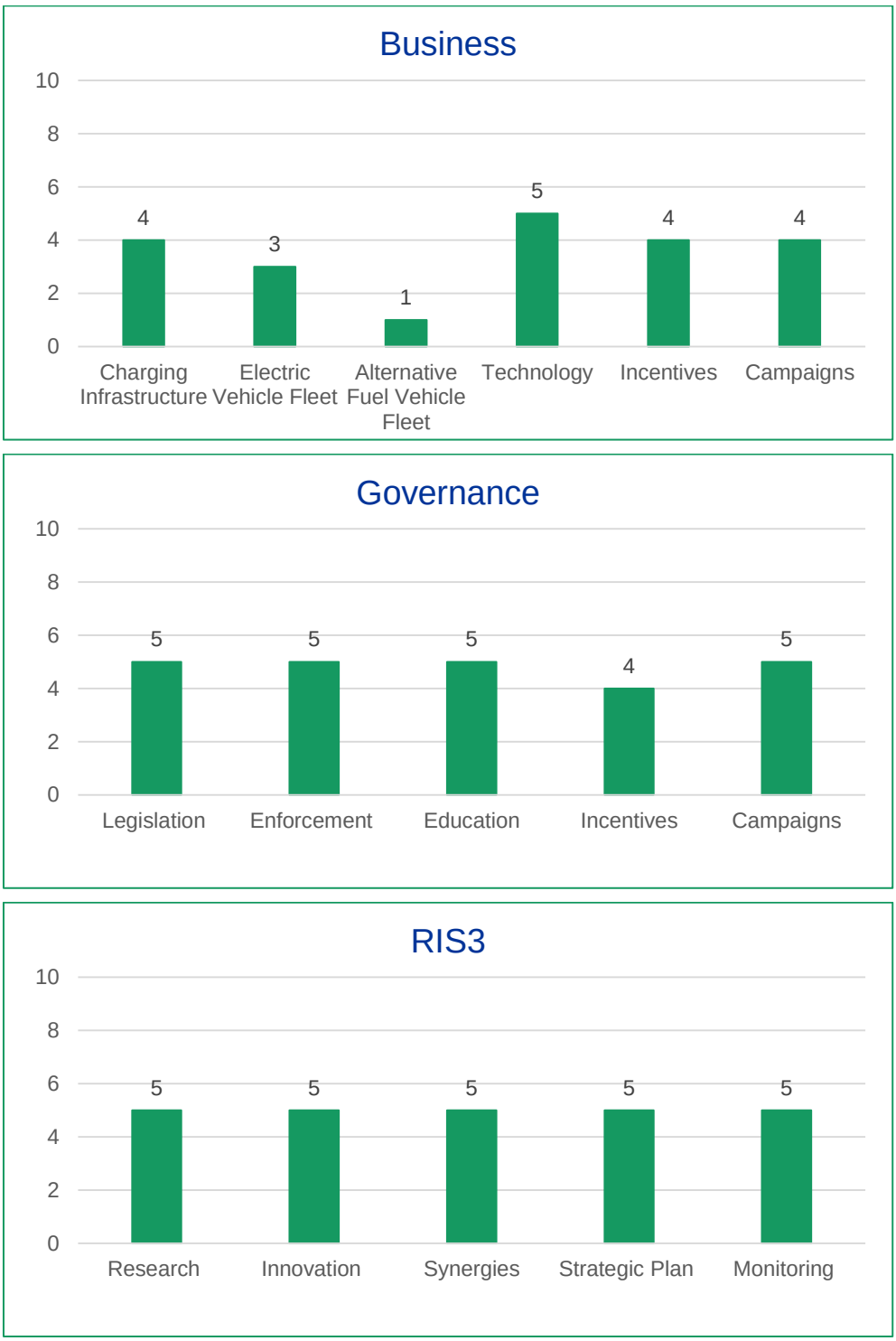
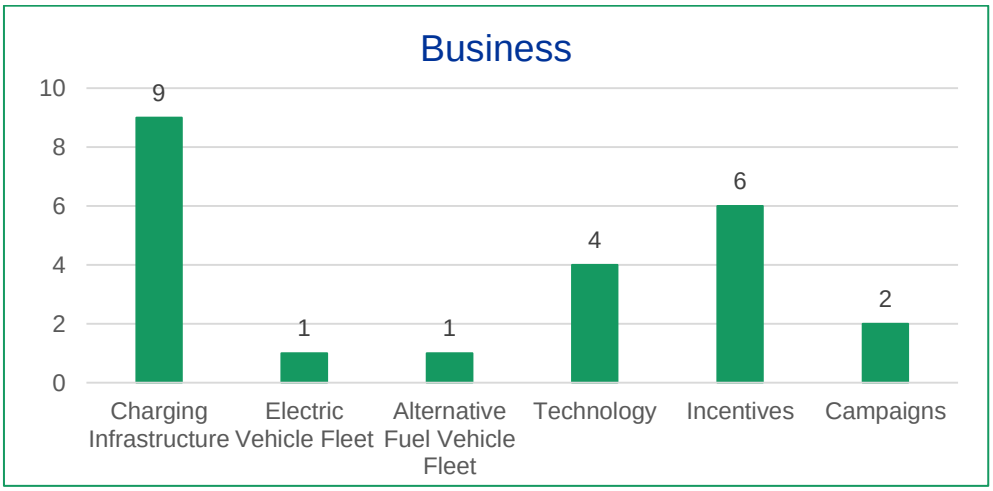


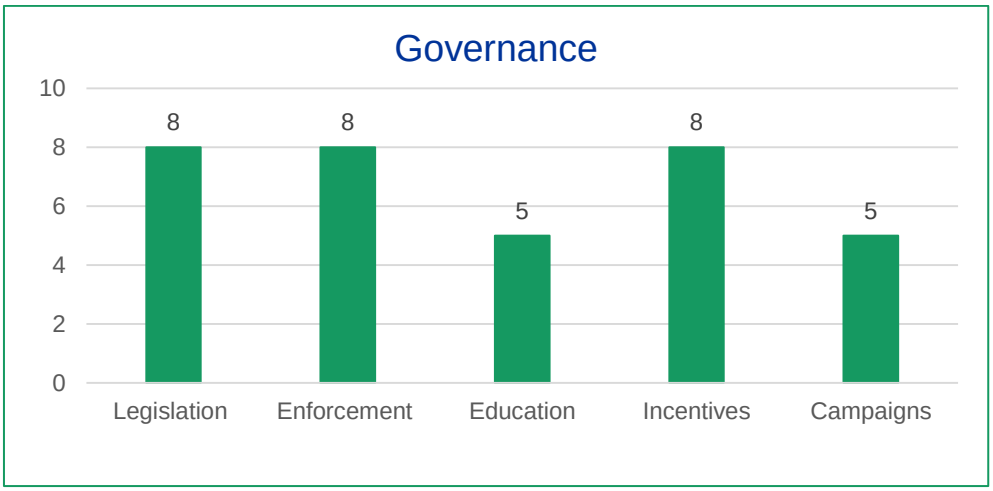
Fig. 8: Gap Analysis for Calabria Region

Gap analysis revealed also the big gap existing in the kind and type of incentives given to the public and private sector in order to evolve in the field of electromobility and alternative fuels. More and stronger incentives should be formulated encouraging both sectors to be more active in this field. Additionally, more effort should be put for the establishment of appropriate legislation favoring the purchase and use of EVs as well as the inclusion of electromobility informative actions in schools and universities. Finally, concerning RIS3 aspects there is still much space for further improvement and intensiveness of research and innovation strategies while broader network of stakeholders and stronger cooperation among them is also a necessity. The results of gap analysis for Calabria region for the three thematic areas and their aspects are presented in Fig. 8.

6.2.3 Regional Development Agency of Gorenjska

The area of Research and Innovation strategies for Smart Specialization is very developed and consists a strong asset for the city of Gorenjska aiming at promoting electromobility and alternative fuels. Research, innovation and synergies and mainly strategic plans formulation and their monitoring are in very high levels of progress and evolution.





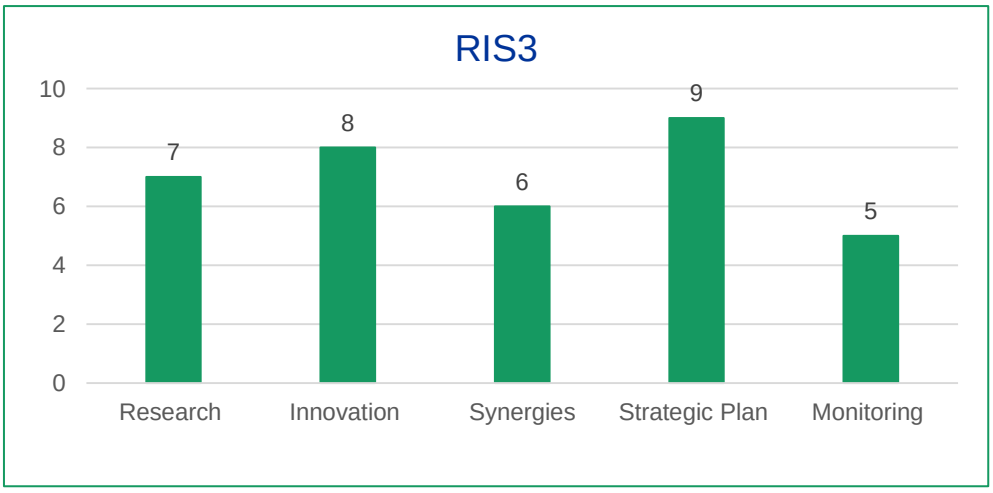


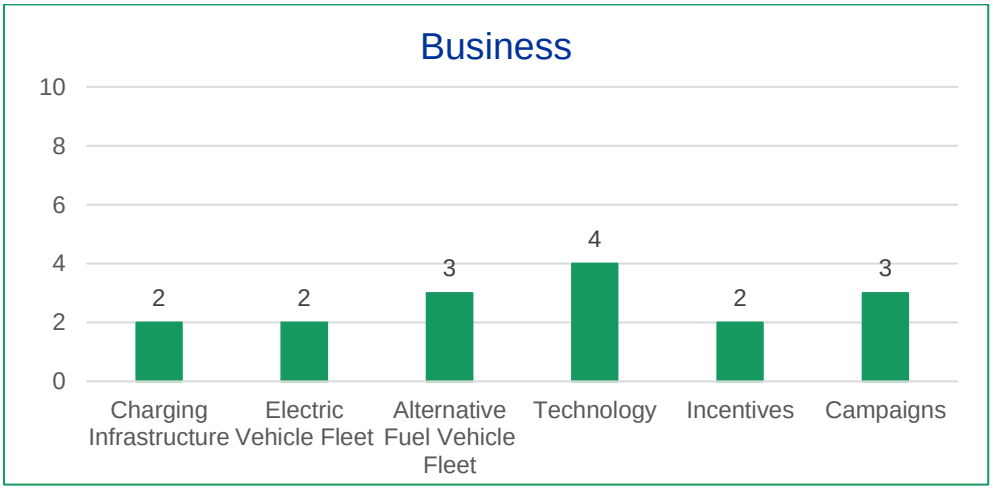
Fig. 9: Gap Analysis for Regional Development Agency of Gorenjska

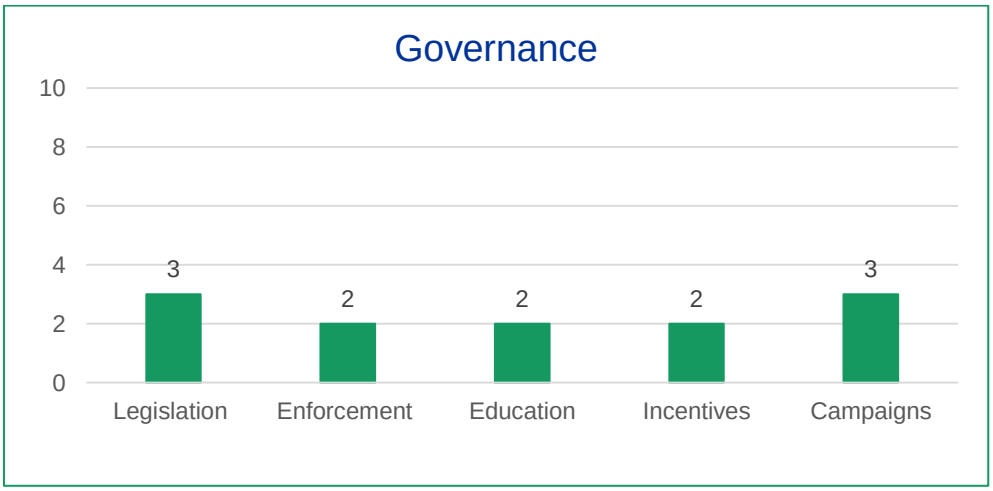
Significant progress has also been achieved in the formulation of legislation framework and the

enforcement of laws and directives encouraging the purchase and use of electric vehicles in the region. It is also remarkable that set of incentives are given to the public and private sector as this aspect was evaluated with 9 out of 10 both for governance and business sector. Similarly to the regions of Calabria and Brescia campaigns is a weakness also for the region of Gorenjska. Neither government nor industries are willing and motivated to organize informative campaigns for introducing and promoting the new environmental friendly technologies. Finally, it is controversial that despite the available charging infrastructure and facilities in the region, the number of electric vehicles is extremely low. The results of gap analysis for Calabria region for the three thematic areas and their aspects are presented in Fig. 9.

6.2.4 Region of Attica

For the region of Attica, the gap analysis showed strong deficiencies significant low progress in creating an environment favorable for the promotion of electric vehicles and the technology of alternative fuels.





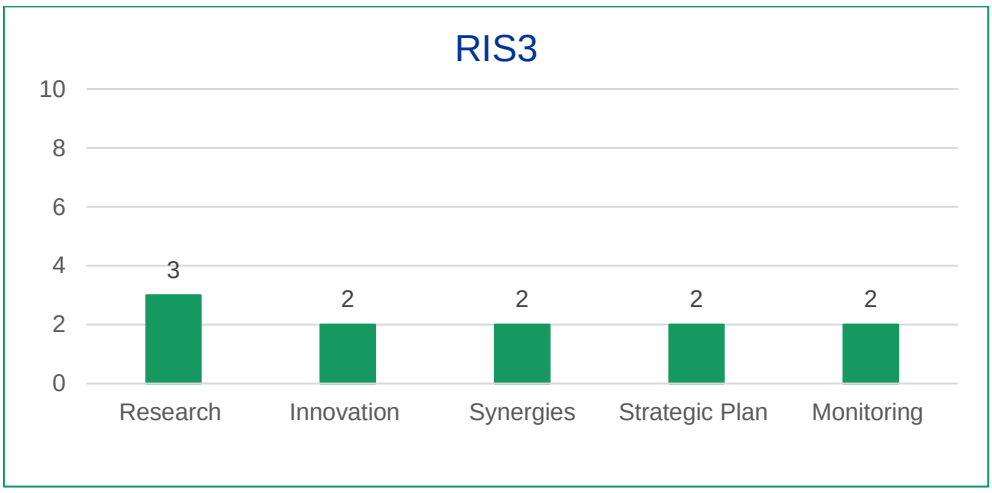


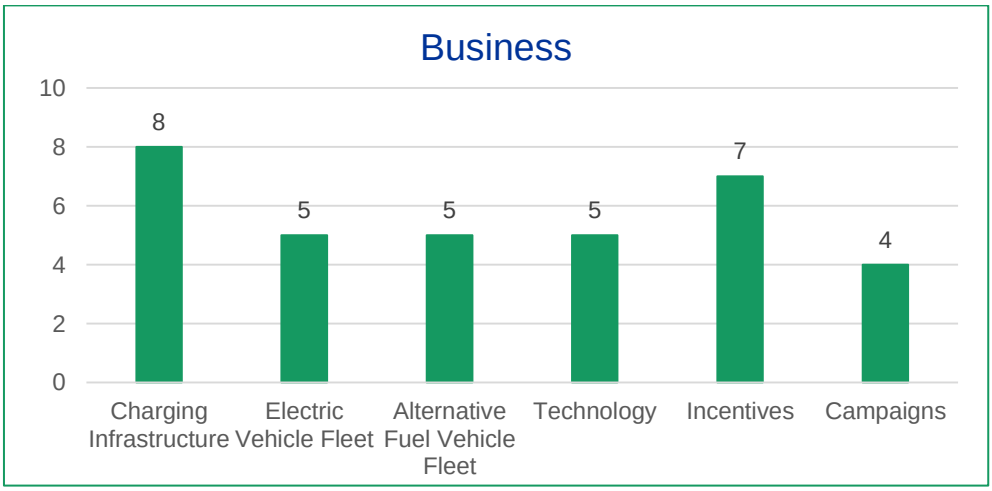
Fig. 10: Gap Analysis for Region of Attica

All aspects of all the three thematic areas were evaluated between 2 and 4 indicating that the introduction of electromobility is still in very preliminary stages and neither business nor the government and the research sector are really familiar with this technology and ready to adopt and promote it. Charging facilities and number of charging stations have to be increased and installed in various locations within the region to enable the use of an EV. It is interesting that the number of vehicles with alternative fuels is higher than the number of EVs but still both penetration rates over the total vehicles fleet is significantly low.

Lack of appropriate legislation framework and enforcement as well as incentives for encouraging public and private sector to get involved in the area of electromobility and alternative fuels is also illustrated by the low values in Fig. 10. Region of Attica does not differ from the previous analyzed regions concerning the campaigns aiming at raising public awareness about the new technologies. Industry and public authorities should be more active in this field as it consists a valuable tool for getting potential users familiar with electromobility and alternative fuels. Research institutes should be encouraged to perform experimentations and find innovative solutions and technologies related to e-mobility while the cooperation between various stakeholders is a prerequisite for the effective establishment and promotion of these technologies towards a more sustainable transportation system.

6.2.5 Flemish Government Department Environment

In the case of the Flemish region, despite the fact the penetration rate of electric and alternative fuels vehicles is not very high, the well-developed and still increasing amount of charging infrastructure is a very important step towards an increase of these rates. It is worth mentioning that a lot of incentives are given to the industry and the public sector in order to motivate and encourage their people to get involved in the electromobility concept and improve the technology they use.



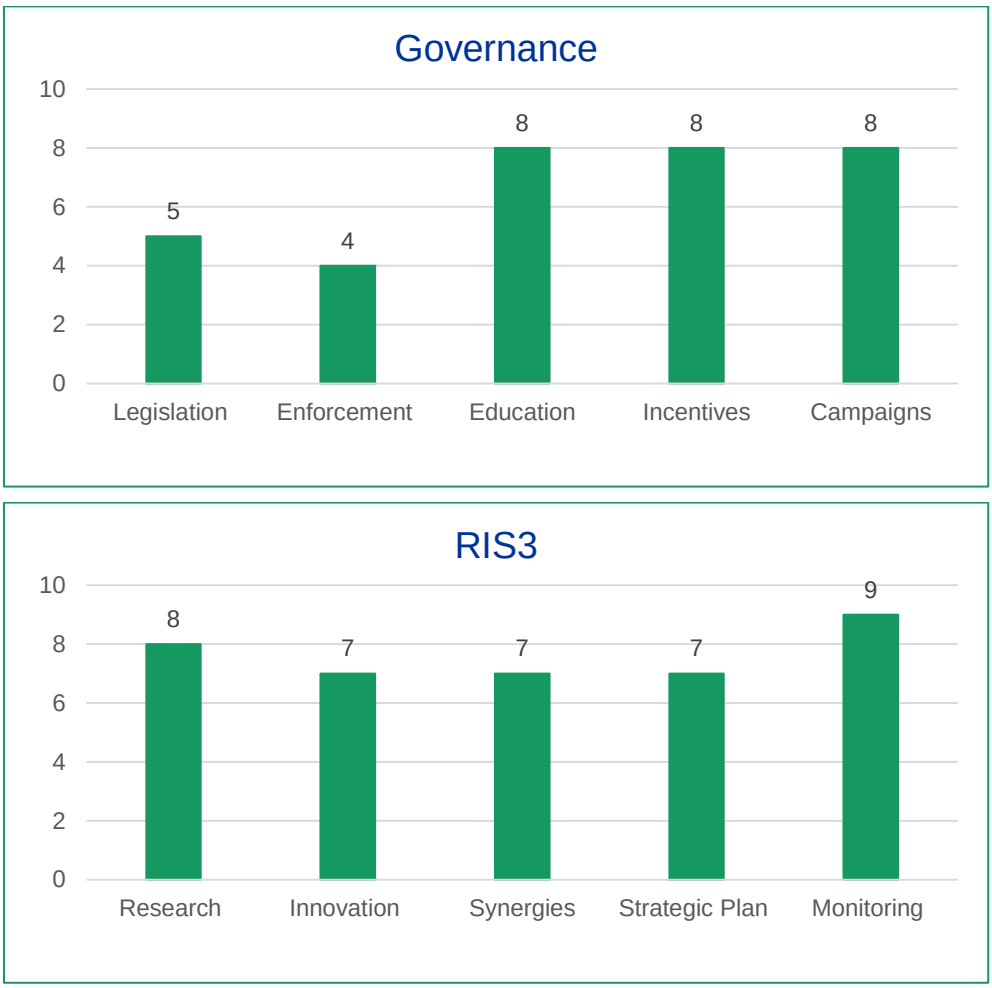


Fig. 11: Gap Analysis for Flemish Government Department Environment

Concerning the governmental sector, the existing legal framework should be modified as it does not support enough the purchase and use of electric vehicles in the region. On the other hand the public authorities are very active in organizing informative campaigns and compared to the above mentioned regions, this aspect has the highest value (8 out of 10).

The evaluation of the RIS3 aspects is quite satisfactory with research activities and the formulation of innovative strategies to be at very advanced levels. Similarly to the region of Gorenjska, synergies among the different stakeholders involved in the area of electromobility are evolving and can consist a very good basis for the promotion of electromobility in the Flemish region. Fig. 11 presents the results of the Gap Analysis performed.

6.2.6 Regional Council of Kainuu

The gap analysis performed for the region of Kainuu revealed deficiencies in the all aspects of the business sector. The number of charging stations should be increased in order to make the use of electric vehicles easier and more convenient and simultaneously to motivate people who support this new technology to use or buy such a vehicle without having concerns about where to charge it when needed. The number of alternative fuel vehicles is significant low (1 out of 10) indicating that people of the region of Kainuu are not supporting this technology or they are not aware of it. The low numbers of these type vehicles as well as the electric ones can be explained by the lack of campaigns that could inform people and getting them familiar with these new technologies by allowing them to use and drive test vehicles.

Increasing public awareness and acceptance can lead to increase in the number of more environmental friendly vehicles since the exiting legal framework seems to be appropriate and encourage their use. Additionally, state and public authorities should elaborate more on defining incentives that could motivate

the private and public sector to get involved in the fields of electromobility.

The overall picture is totally different for the aspects of the RIS3 thematic area as it is shown in Fig. 12. Research activities on technologies related to electromobility and alternative fuels are in very advanced level while innovation and experimentation are also encouraged. The existence of a regional strategic plan in combination with the good cooperation among the various stakeholders involved are key factors for the diffusion of the new technologies in the region.

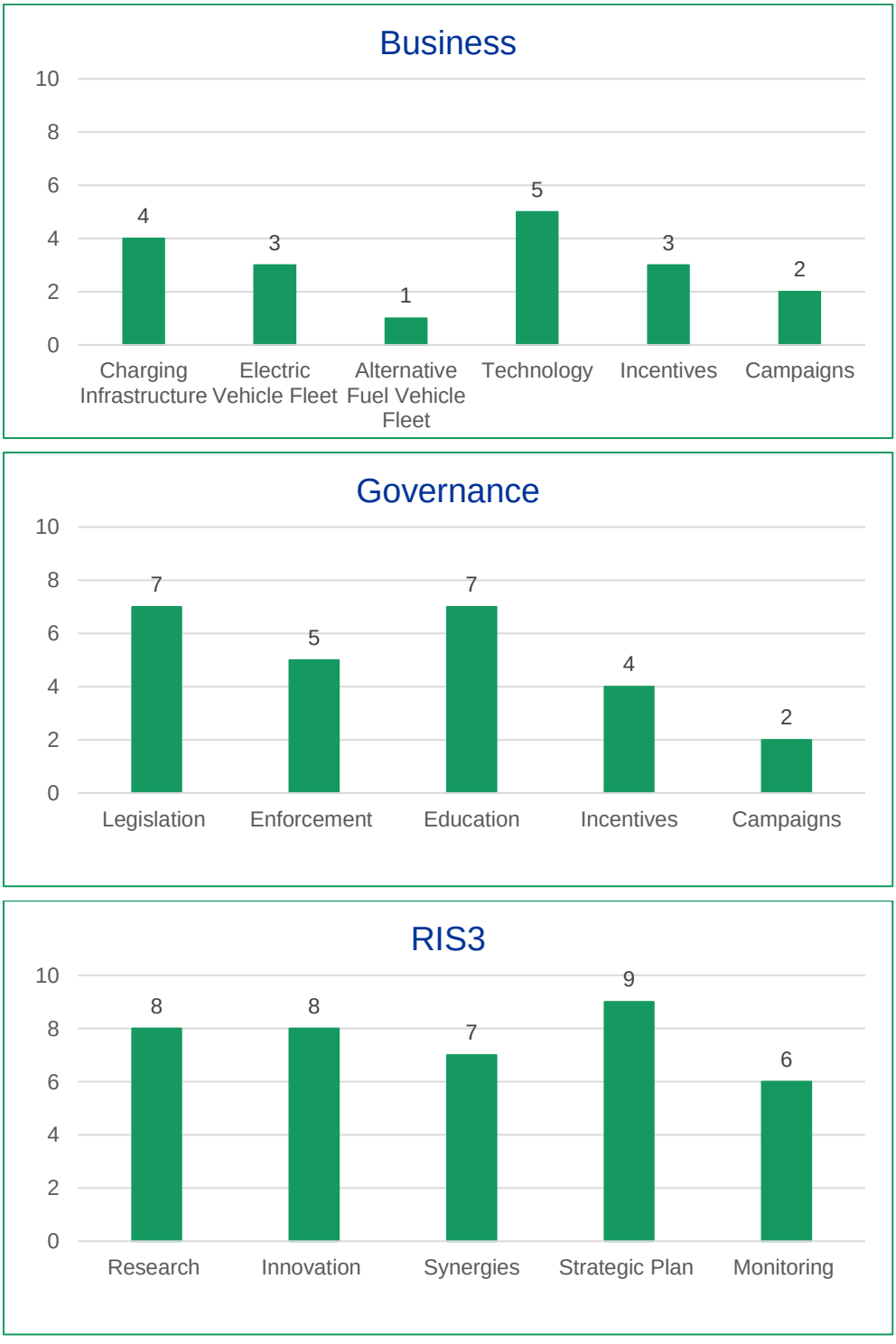


Fig. 12: Gap Analysis for Regional Council of Kainuu

6.2.7 Rogaland County Council

Concerning the gap analysis for the Rogaland Region, it is revealed that almost everything has already been achieved and implemented. Sufficient and effective infrastructure, high public awareness and

acceptance that can be explained by the campaigns organized mostly by the public and regional authorities as well as from the significant high penetration rates of both electric and alternative fuel vehicles. Compared to the above-mentioned regions, the Rogaland region has the highest share of these type of vehicles on the total regional vehicle fleet.

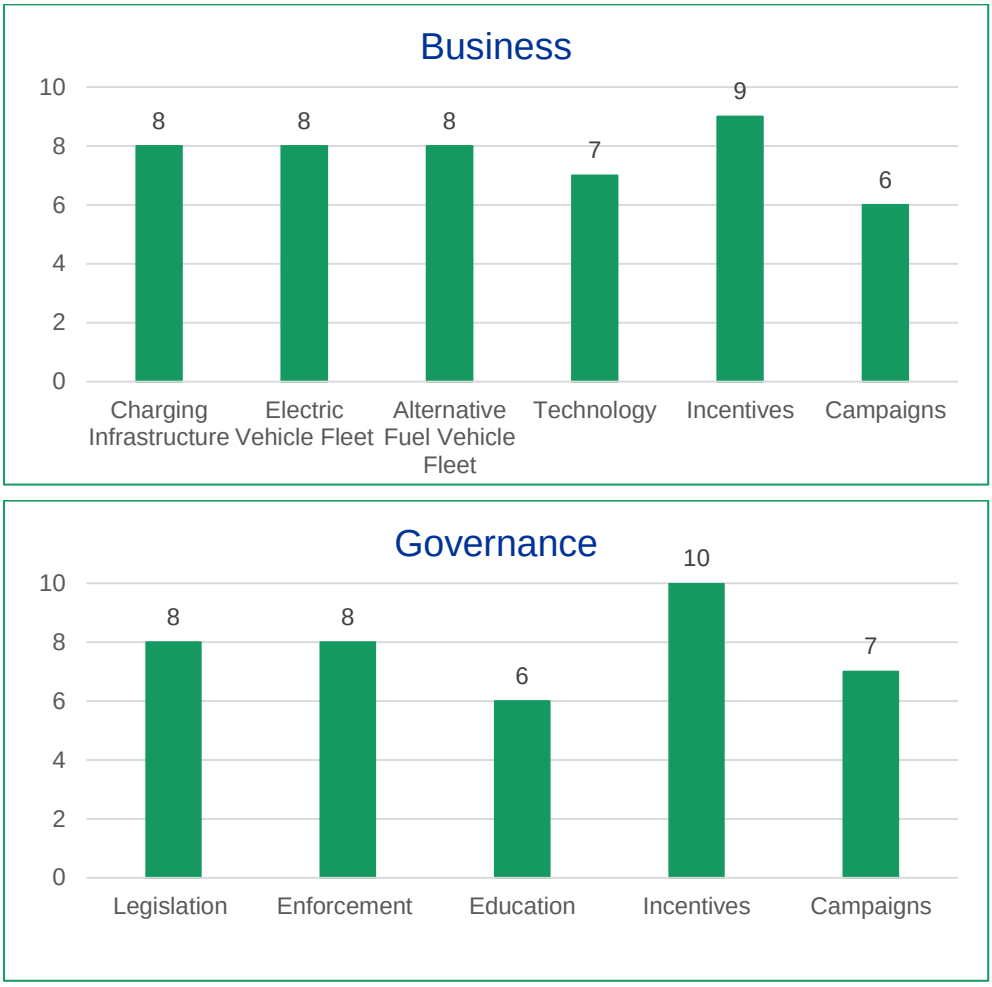


Fig. 13: Gap Analysis for Rogaland County Council

The high number of these vehicles can also be explained by the existence of appropriate legal framework and the enforcement of regulatory changes, laws, directives and standards favoring the more environmental friendly vehicles. The highest values among the above- mentioned regions are also observed for the set of incentives established and given to the public and private sector for motivating them to get involved in the electromobility field as shown in Fig. 13. Rogaland County Council does not have any RIS3 strategy and therefore the RIS3 indicators are evaluated with zero.

6.2.8 Bucharest-Ilfov Regional Development Agency

Average progress has been performed for most aspects in the case of Bucharest – Ilfov region. The sufficient charging infrastructure already installed in the region could not encourage people to use electric vehicles. Towards the increase of the penetration rate, the existing legal framework for electric vehicles should be modified and improved in order to support the purchase and use of such a vehicles. Additionally, the industries and the regional authorities should get more active in organizing campaigns where potential users can be more adequately informed about the advantages of such vehicles as well as get familiar with driving them and realize that they do not lack the driving performance compared to the conventional diesel vehicles.

As far as the RIS3 area is concerned, all aspects were evaluated above average but the analysis shows that still there is much space for further improvement and more research activities in combination with

formulation of innovative solutions and experiment conduction. The results of the gap analysis for the Bucharest – Ilfov Region are presented in Fig. 14.

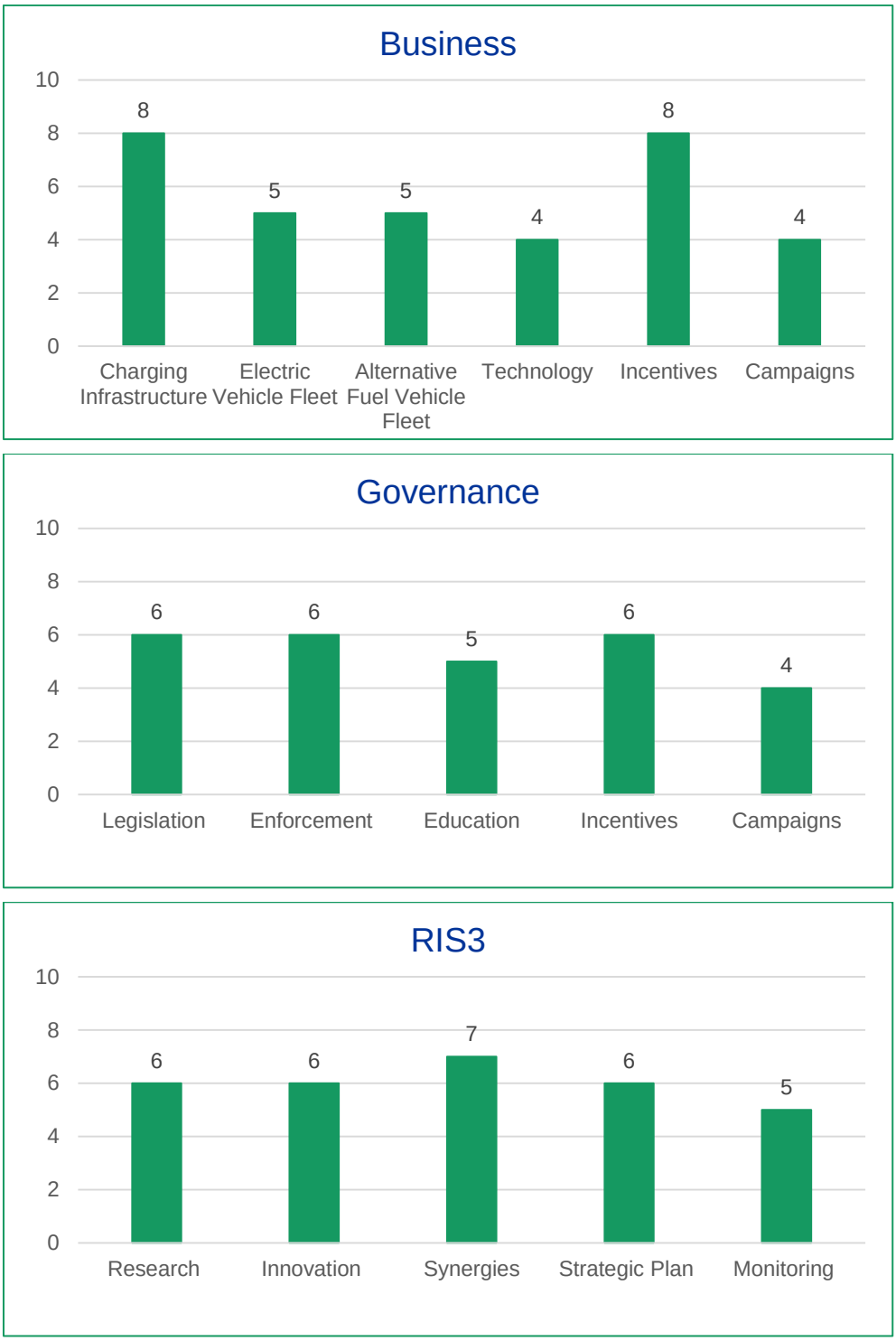


Fig. 14: Gap Analysis for Bucharest-Ilfov Regional Development Agency

6.2.9 Zemgale Planning Region

The gap analysis for the region of Zemgale (Fig. 15) revealed significant deficiencies in many aspects of the three main thematic areas. Lack of appropriate legislation and enforcement of directives and standards supporting the use of electric vehicles as well as of incentives enabling the public and private sector to get involved in the electromobility field and the alternative fuel technology reflects the low penetration rate of electric and alternative fuel vehicles. Similarly to most of the above mentioned

regions, the region of Zemgale is not very active in the various campaigns organization for increasing public awareness and acceptance.

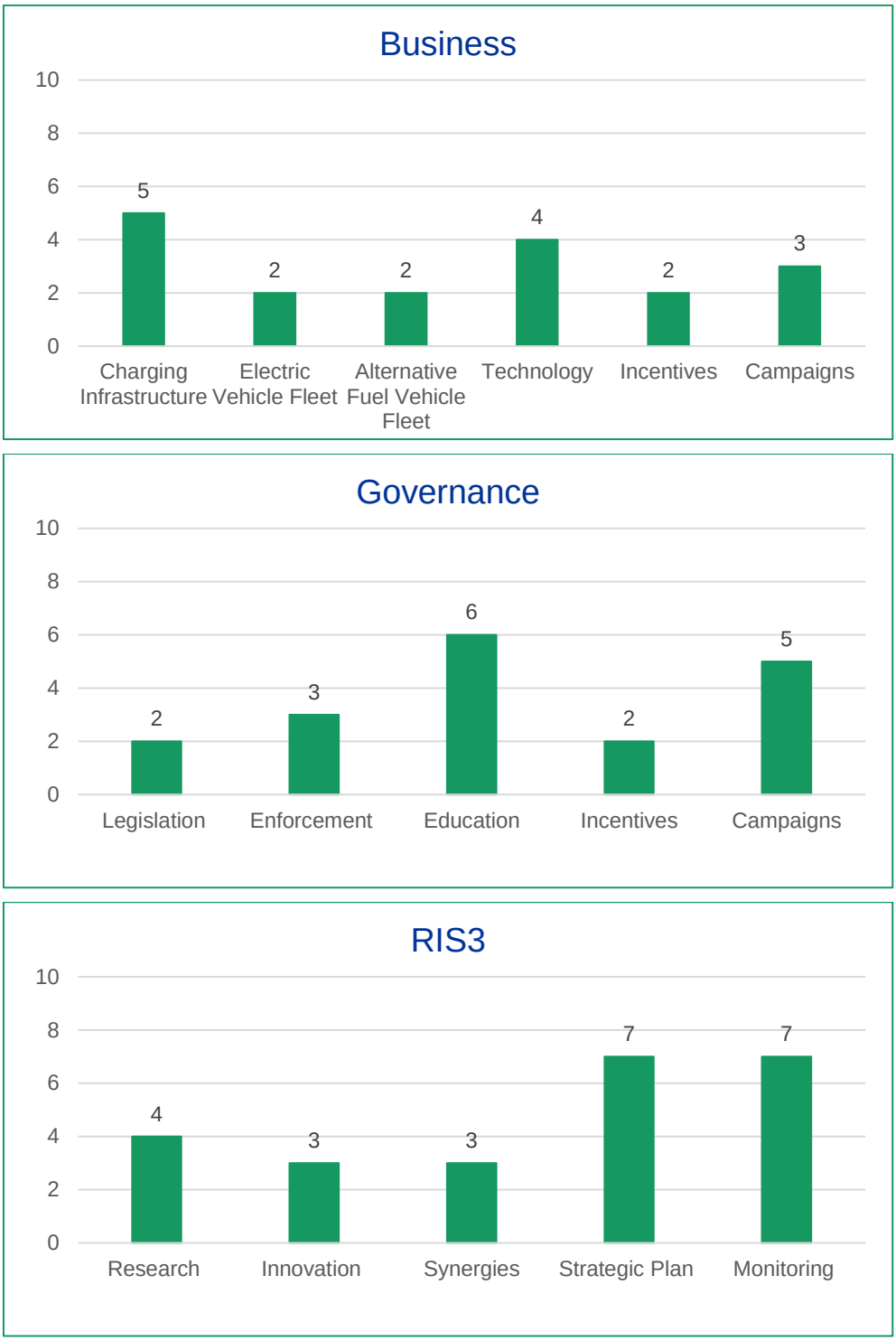


Fig. 15: Gap Analysis for Zemgale Planning Region

Low progress is also marked in the case of research activities, encouragement of innovation and experimentation as well as the cooperation of various stakeholders aiming at promoting electromobility in the region. Incentives and funding should be given so that research can be conducted and research institutions can cooperate with the industry and the state in finding innovative ideas that could enhance the electromobility technology and contributing in its diffusion. It is important to mention the existence of a regional strategic plan which consists an important step towards the promotion of electromobility and alternative fuels in the region.

6.3 Comparative Gap Analysis

In this section, the results of the gap analysis conducted for each project partners are combined for creating a better overview of the similarities and differences among the regions. The comparative gap analysis is conducted per thematic area (business, governanve and RIS3) as well as for each individual indicator.

6.3.1 Business

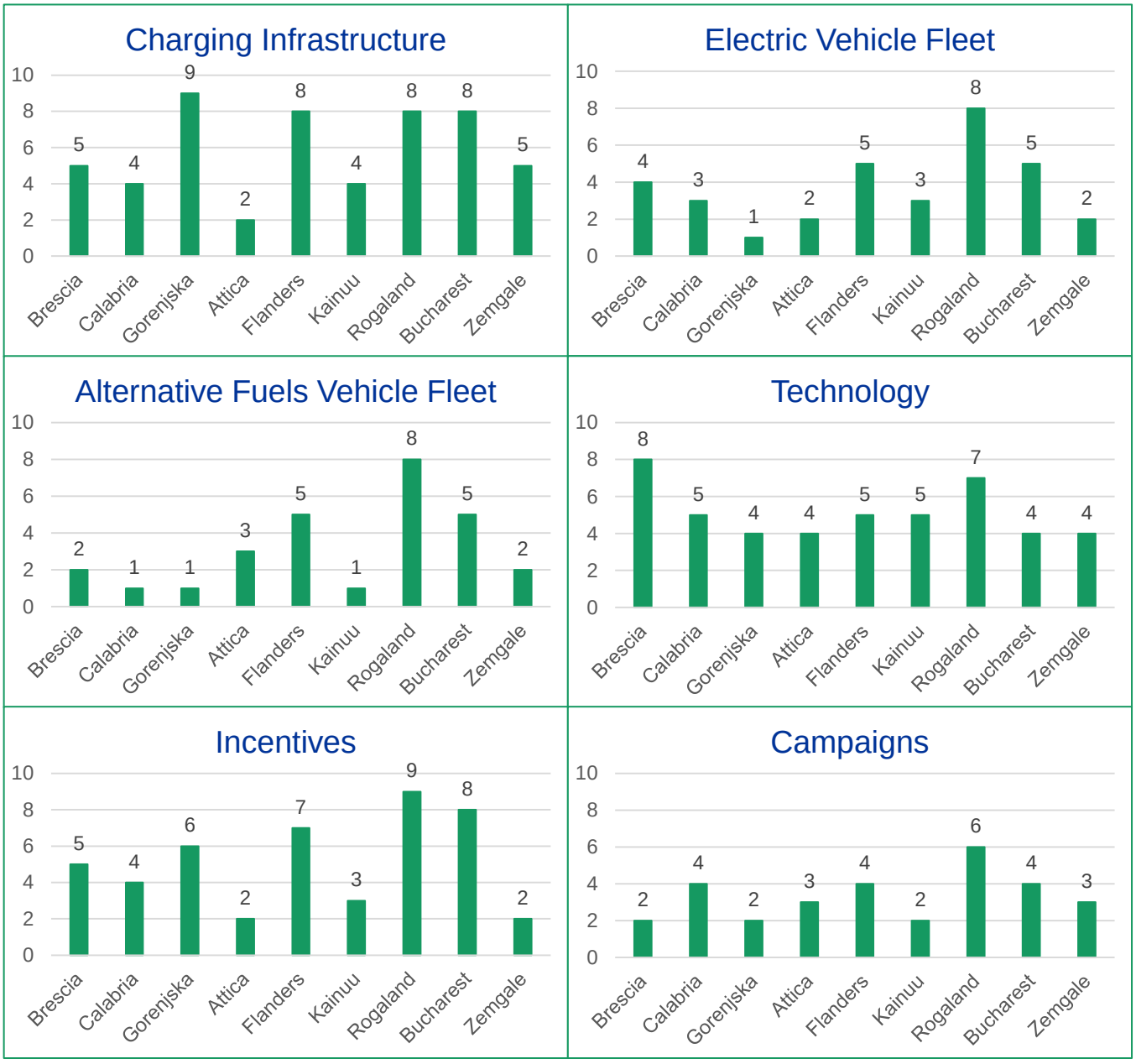


Fig. 16: Comparative Gap Analysis for the thematic area Business

Charging infrastructure is an aspect where 4 out of 9 regions have achieved significant progress (Fig. 16). The well-developed and sufficient charging infrastructure in Flanders, Bucharest – Iliov, Rogaland and Gorenjska is a very important step towards the increase of the number of electric and alternative vehicles. On the other hand, the regions of Calabria, Kainuu, Brescia and Zemgale need to elaborate more on the installation of charging stations and the creation of an appropriate network. Especially, for Gorenjska, it is controversial that despite the available charging infrastructure and facilities in the region, the number of electric vehicles is extremely low. Region of Attica evaluated the charging infrastructure with only 2 out of 10 indicating that charging facilities and have to be increased and installed in various

locations within the region to enable the use of an EV.

Despite the fact that some of the regions provide the necessary infrastructure the number of electric vehicles is still low in all of them except of the Rogaland where the EV fleet was evaluated with 8. It is interesting to investigate why the number of EVs is not higher in the regions where enough charging stations have been installed favoring the use of EVs. Exactly the same picture for the number of alternative fuels vehicle fleet, with the Rogaland Council achieving the highest score. Province of Brescia has achieved significant progress in developing the required technology to support the use of electric vehicles along with the Rogaland while for all the others regions this aspect got an average score. Concerning incentives, it is worth mentioning that in Flanders, Bucharest – Iliov and Rogaland, lot of incentives are given to the industry and the public sector in order to motivate and encourage their people to get involved in the electromobility concept and improve the technology they use. Attica, Kainuu and Zemgale are the regions with the lowest score (2 and 3) in this aspect.

Finally, the highest deficiency for all regions is identified in the aspect of the informative campaigns. Campaigns for promoting the new technologies for a more sustainable and environmental friendly transportation system are not a strong asset for any of the analyzed regions, a fact that indicates that industry should be more active in this field as it consists a valuable tool for getting potential users familiar with electromobility and alternative fuels. The lack of campaigns can explain the low penetration rates of electric and alternative fuels vehicles in some regions as people do not support or are not aware of the technology and they didn't have the opportunity of getting familiar with these new technologies by using or driving test vehicles.

6.3.2 Governance

In the Governance sector, the Rogaland has significantly high scores in almost all aspects while Flanders and Gorenjska have achieved significant progress in terms of education – incentives-campaigns and legislation – enforcement – incentives respectively (Fig.17). The appropriate legislation framework is a very important tool for encouraging the purchase and the shift towards more sustainable authorities. Additionally, enforcement of regulatory changes, laws, directives and standards for the promotion of electromobility and increase of the share of electric vehicles and alternative fuels in the fleet can also contribute towards more sustainable transportation system. Similarly to the business sector, incentives given to the public sector and campaigns organized by regional or local authorities are not a priority for most of the regions. It is important to understand the importance of informing public about the existence of alternative technologies as well as their advantages and therefore raise public awareness. Low evaluation scores are also observed in the aspect of education for most of the regions with Brescia and Attica having the lowest ones.

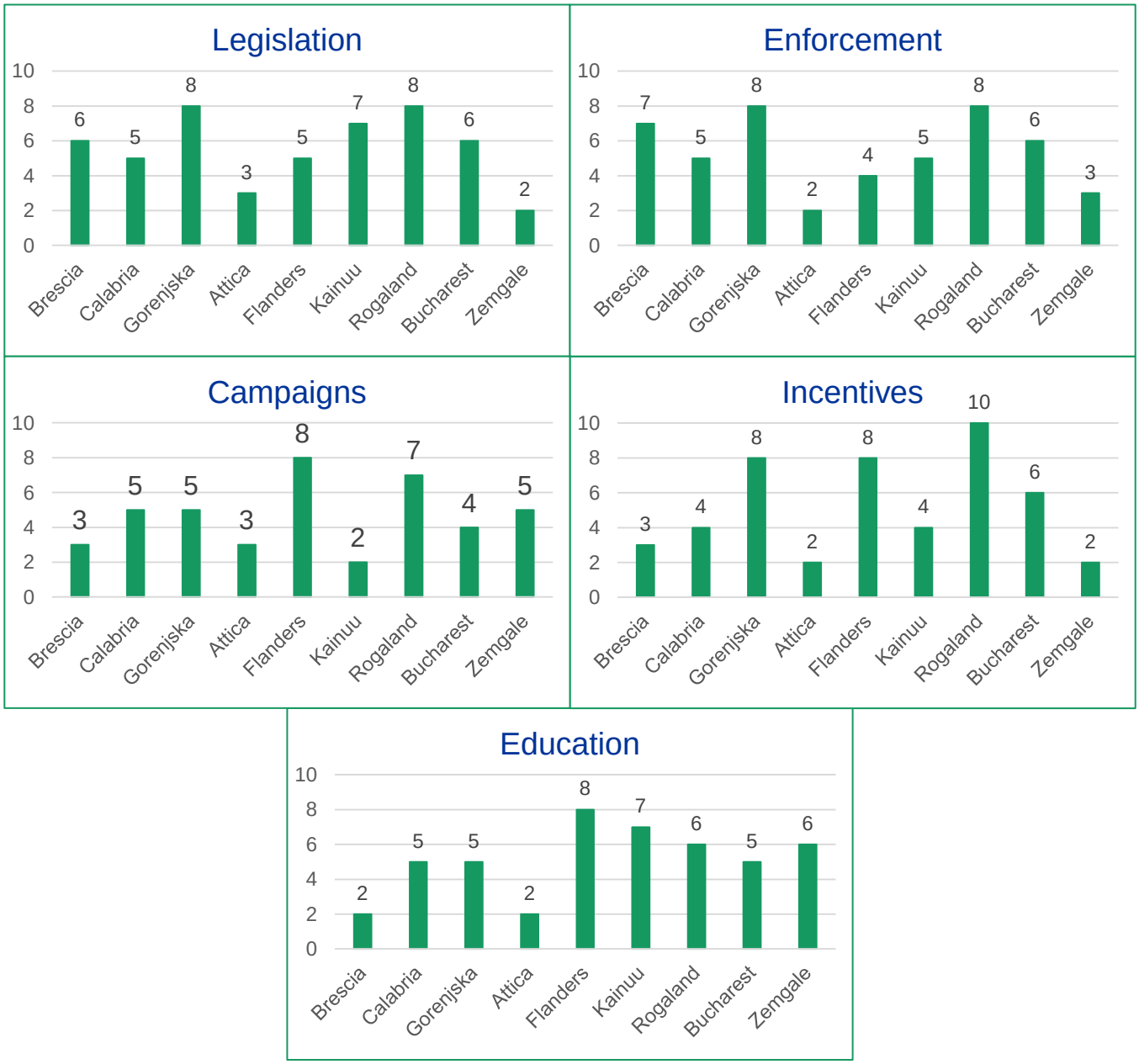
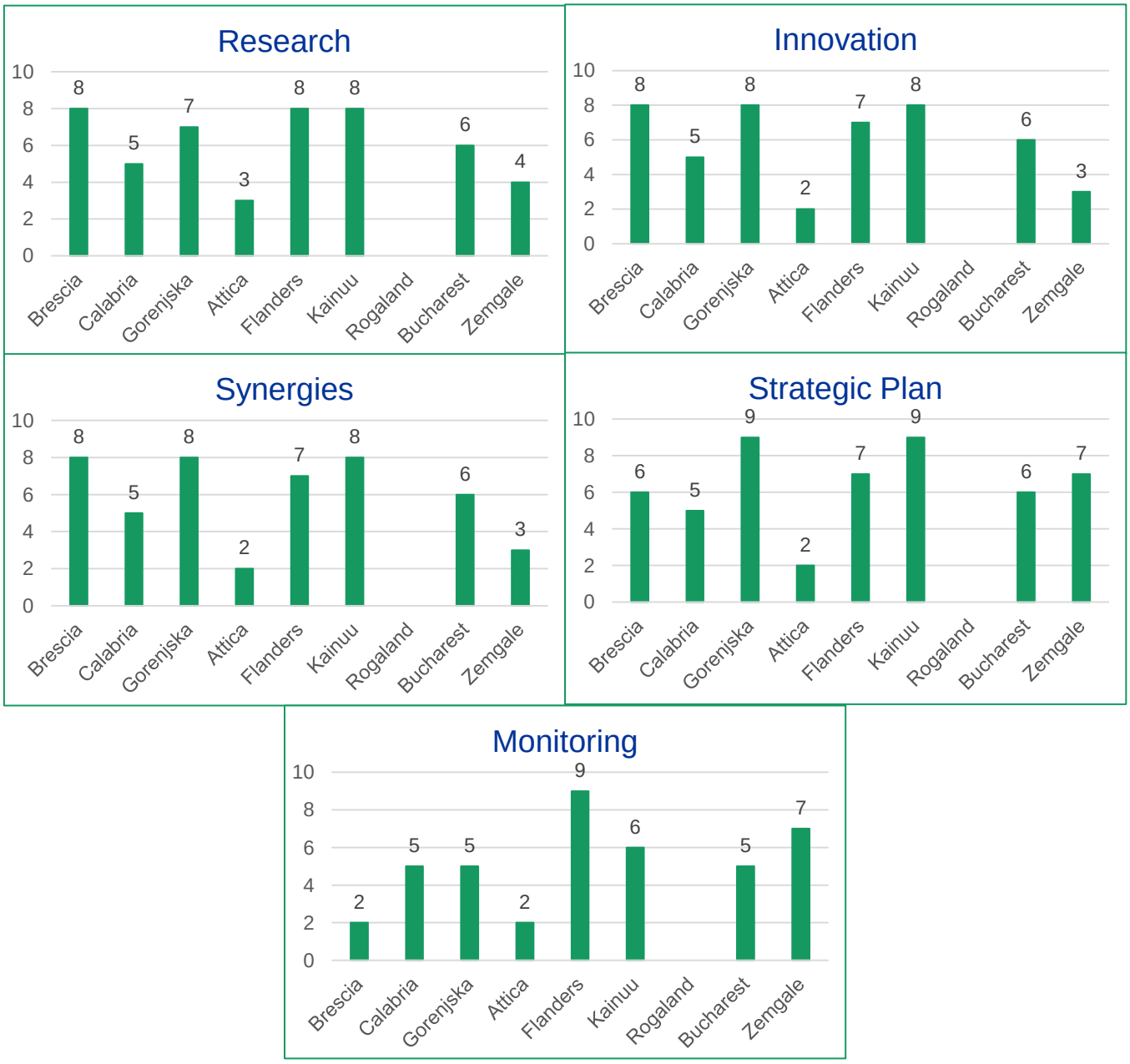


Fig. 17: Comparative Gap Analysis for the thematic area Governance

6.3.3 RIS3

The third thematic area is mainly focusing in research and technology advances as well as the strong cooperation of the various involved stakeholders (synergies). Fig. 18 shows that most of the regions achieve significant progress in almost all aspects apart from Attica as the overall score is around 2 out of ten. More specifically, the province of Brescia has made remarkable steps in the aspect of research activities and the intense participation of research institutions and universities in the development of technologies for making the use of electric vehicles and alternative fuels more convenient and beneficial for the users. Additionally, innovation and experimentation is also encouraged and highly progressing as it as was assessed with 8 out of 10. Almost the same scores are observed for Flanders, Kainuu and Gorenjska in the aspects of research and innovation. It is interesting to mention that the scores for the region of Kainuu were very low in the previous thematic areas. The level of involvement of various stakeholders is very low in the Province of Brescia (Synergies were evaluated with 4/10) and its increase should be a priority for the region as one of the main goals of RIS3 is the involvement and strong cooperation among different sectors and is one of the key factors for the efficient promotion and development of electric vehicles.

The same results concerning synergies between various stakeholders are also illustrated in Figure 3 for the regions of Calabria, Attica and Zemgale. For Calabria and Attica also the aspect of research and innovation are not a strong asset and a lot of effort should be put for improving the situation. Finally, Bucharest – Iliov region has an average evaluation score for all aspects of RIS 3 as the scores are fluctuating around 5. One of the basic and easy steps for further progress is the promotion of synergies among different sector and a broad network of experts and their strong cooperation is considered a necessity not only for promoting sustainable technologies but also in other various fields.



** Rogaland does not yet have Research and Innovation Strategies for Smart Specializations*

Fig. 18: Comparative Gap Analysis for the thematic area RIS3

7. SWOT Analysis

The SWOT analysis is conducted in order to reveal the strength and weaknesses in relation to electromobility in each region as well as opportunities and threats that will emerge from the promotion and use of electric and alternative fuel vehicles. According to Pickton and Wright (1998), SWOT analysis consists a simple and practical analytical tool used widely and for many purposes and it reveals key issues affecting business development and growth. SWOT Analysis has been extensively used for evaluating electromobility and electric vehicles (AUTOCLUSTERS project, 2009 and 2011, Knez et al., 2014, Raslavicius et al., 2015, Yu and Pettersson, 2014, ELMOS project, 2014, SAGE project, 2013, Dano and Rehak, 2018). The strengths can refer to advantages, capabilities or skills, the weaknesses include disadvantages or gaps, opportunities can be defined as overall impacts on mobility and the environment, quality of life, innovation and technology, human resources potential, urban and regional development and mobility policies while financial instruments, cost of development, cost of deployment and maintenance, legislation, complexity of communication between stakeholders, political impacts belong to the last category.

7.1 Province of Brescia

Strengths

S1. National rules and policies (i.e. incentives, pollutant emission reduction targets etc.): national infrastructure plans for charging of electric vehicles which defines the criteria for the construction of a national electric vehicle charging network (PNIRE), in line with e-MOPOLI issues.

S2. Local knowledge and academic research in e-mobility: there are several studies and researches, constantly updated, which analyses the electric mobility in its various forms (charging infrastructure, motor vehicles, etc.).

S3. Local enterprises and players of e-mobility in area: in Lombardy there are local energy operators who are investing in innovation and, in particular, in the field of electric mobility. Often these operators are municipal companies that are facing integrated projects of energy efficiency and electric mobility.

S4. Shared business, technical aspects and overall experience between operators for interoperability: Nowadays, there are no good practices on interoperability which would ensure universal access to charging infrastructure by every electric vehicle.

S5. Former experiences about e-mobility infrastructures (e.g. charging stations), implementations and coverage in the territory: approval of Regional Guidelines on charging infrastructure, Regional Strategy on electric mobility, the Regional Strategy implementation document and the approval of Guidelines for development and planning of e-mobility in Province of Brescia.

S6. Freight Transport: transport and logistic operators are very interested in new e-mobility opportunities.

S7. Planning Instruments:

1. In Province of Brescia there are two SUMPs, one for the Municipality of Brescia (approved) and one for Municipality of Chiari (under preparation). A greater diffusion of SUMPs in the majority of the municipalities of the Province represent good opportunity for sustainable mobility.
2. Increasing awareness of PA, operators and SMEs of Lombardy Region in relation to e-mobility issues and planning.
3. Constant discussion among PAs and relevant stakeholders.
4. Tourism sector to be included in the sustainable mobility strategies.

Weaknesses

W1. Lack of transnational coordination at EU level (i.e. different standards in etc.) : impossibility to guarantee transnational corridors for electric vehicles.

W2. National and local framework for development of e-mobility and charging infrastructure: Fragmentation of charging network planning and strategies.

W3. Financial aspects (i.e. different budget, difficult operation in the market, currency issues etc.):

1. Current non-profitability of the charging service for economic operators.
2. Strong operators who acquire income positions and strategic locations.

W4. Public charging infrastructure concentration and related reserved public parking: oversize the charging infrastructure offer in few locations.

W5. E-mobility in public transport:

1. Lack of charging infrastructure specifically dedicated to public transport.
2. Significantly higher acquisition costs for electric vehicles.
3. High charging infrastructure installation costs.

W6. Lack of knowledge at local level: lack of efficient and efficacy policies.

W7. Freight Transport:

1. Lack of involvement of logistic and freight transport sector in e-mobility issues.
2. Lack of awareness of all stakeholders on air quality problems and objective (Co2 reduction) to be reached in few years.
3. Lack of awareness/knowledge of stakeholders on new technical opportunities in relation of e-mobility.

W8. E-Vehicles:

1. Lack of e-vehicles in Public Administrations fleets also due to lack of homogeneous diffusion of charging spots.
2. High costs of e-vehicles.

W9. Planning instruments and role of PAs:

1. Lack of integrated planning instruments.
2. Differences and Disparities of policies/governance at the local level (in the same Region).
3. Lack of knowledge of PA in relation of every aspect of sustainable mobility (not only e-mobility).
4. Lack of a strong coordination from the Ministry of Infrastructure.
5. Long procedures and bureaucracy of PAs.
6. Lack of real involvement and sensitization of local authorities of rural areas and small villages.

Opportunities

O1. Legislative and technical harmonisation in interoperability :

1. Creation of a homogeneous network and common knowledge.
2. Open access to the charging services, both for occasional and daily users.

O2. Presence of local companies potentially involved (e.g. automotive industries, Distribution System Operator-DSOs, fuel distributors, prosumers etc.):

1. Private Partnerships that promote the cultural change in favour of the electric mobility.
2. Possibility to incentivize the installation of charging spots in service stations.
3. Common Objectives among Regional Policies and e-mobility operators' interest.

O3. E-mobility parking facilities (by companies and local authorities) and adequate public charging infrastructure number:

1. Create synergies with public administrations and public transport operators for the provision of charging services for commuter cars.
2. Development of integrated policies of electric car sharing close to the main railway stations or most important locations for Municipalities (i.e. city hall, hospital, …).

O4. E-mobility in public transport:

1. Gradual and total conversion of the fleet of buses and taxis.
2. Consistent reduction of fine dust emissions.

O5. Infrastructures installation in the most isolated and peripheral areas to guarantee a homogeneous territorial coverage of charging infrastructures.

O6. Circular economy concept applied to transport sector (freight).

O7. Commitment of Public Authorities to develop and approve SUMPs by 2020.

O8. Greater involvement of SMEs of the Region.

O9. More attention to Commuters and e-mobility (new services, intermodality, LPT).

O10. Tourism sector is strategic for the diffusion of e-mobility.

O11. Identification of electrical routes and "electric corridors" also to resolve the market failure areas (small villages).

O12. Creation of common virtual Cloud among stakeholders in order to have real–time information and to not duplicates information and products.

Threats

T1. Local and Regional automotive industry lobbies against e-mobility - "Aggressive" sales campaigns for traditional vehicles, also in the field of public transport, that disincentivize e-mobility.

T2. E-vehicles high cost:

1. Electric mobility is nowadays only for elite with very high economic resources.
2. Economic unsustainability for many Public Administrations to change fleets in the medium-term period.

T3. Lack of interest from operators towards interoperability: plurality of operators offering different recharge services with different contracts and protocols in specific urban areas that allow short-range mobility, discouraging long journeys.

T4. Charging infrastructure high cost: lack of interest of Public Administrations to invest in infrastructure with high costs in comparison to a near-zero revenues.

T5. Political turnover and administrative fragmentation:

1. Impossibility to pursue a specific project vision with coherency and in the medium-term period.
2. Long authorization procedures and project approval.

T6. Lacking attitudes about e-mobility & charging issues: electric mobility is not included with a crucial role in projects and long-term visions concerning the infrastructural development, cultural change and the opportunities of economic growth.

T7. Lack of standardization of charging networks.

T8. Difficulties in the definition of clear and simple Business models related to e-mobility.

T9. There is a serious risk that the reduction of CO2 emissions maintains (or increases) the actual traffic volume in urban areas.

T10. Italian automotive sector is not promoting e-vehicles and e-mobility.

T11. Lack of «real» interoperability of charging infrastructure.

T12. Lack of a Unique National Platform (PUN) for e-mobility.

T13. Lack of Cooperation among PA and stakeholders in planning and programming phases.

T14. Lack of involvement of end-user.

7.2 Calabria Region

Strengths

S1. Favorable climatic aspects (i.e. sun and wind) for the promotion and diffusion of renewable energy plants and related storage systems to be applied to sustainable mobility (i.e. e-mobility) in a smart city/territory logic.

S2. Cooperation of Public and Private sector with local universities and research centers for technological development in the framework of international projects and researches.

S3. Ex-ante risk assessment of negative effects of a larger diffusion of e-mobility (i.e. increased use of energy, maintenance of e-vehicles, road and charging infrastructures, e-vehicles battery recycles, ...).

S4. Elaboration and analysis of long-term scenarios in relation to industrial uses of e-vehicles end-of-life batteries.

S5. Regional Transport Plan and related measures for electric mobility that will be updated constantly with new opportunities, strategies, polices and targets offered by sustainable mobility, in particular electric and hybrid.

Weaknesses

W1. Lack of policies and governance on e-mobility.

W2. High cost for e-vehicles maintenance.

W3. Update of existing cartography with information on charging infrastructure network (charging spots and “electric” paths).

W4. Connect existing and new mobility infrastructures with info mobility applications (web, Apps) including accessibility of tourist services for children and disabled (promotion of inclusion of vulnerable groups).

W5. Lack of knowledge and capacities concerning electric mobility.

W6. Lack of charging infrastructure diffusion on the territory.

W7. Lack of education on sustainable and e-mobility issues in schools.

W8. Lack of knowledge and capacity of technicians and politicians of Public Administrations (PA).

W9. Local and regional regulations and governance that do not promote e-mobility.

W10. Technical problems to book e-car sharing vehicles. Services for young and digital-friendly end-users.

W11. Lack of awareness on environmental problems.

W12. Lack of collaboration between Universities / Research Centers and Public Administration.

W13. Lack of infrastructures for new mobility models in the Region and municipalities.

Opportunities

O1. Specific training for public bodies.

O2. Opportunity offered by hiring new technical staff (specialist in e-mobility alternative fuel mobility) in PAs.

O3. Promotion of campaigns on sustainable mobility.

O4. Adoption of SUMP on a larger scale.

O5. Promotion of Renewable Energy Sources (RES) (solar and wind) applied to sustainable mobility systems.

O6. Diffusion of Mobility Managers in private and public sectors.

O7. Moment of decisive choices in the Region.

O8. Promotion of Vehicle-to-Grid (V2G) technology to contribute to the development of GRID SHARES.

O9. Increase sustainable mobility options for tourism.

O10. Update of regional law which encourages the use of electric cars.

O11. Promotion of e-mobility in Home-work paths, such as carpooling and intermodal exchange (shuttle-cycling).

O12. Attraction of tourist flows.

O13. Improvement of the city road system and viability.

O14. Encouraging decarbonization.

O15. Limitation of traditional fuels vehicles circulation.

O16. Take the chance of next Programming Period 2021-27 to include more policies, strategies and funds on priority axis concerning sustainable mobility.

O17. Active involvement of professors / researchers and university students for the development of new strategies and policies for sustainable mobility.

O18. Encourage the use of collective transport by using alternative fuel vehicles (e.g. electric).

O19. Promote intermodality also through the development of cycle infrastructures (bicycle paths, intermodal hubs, cycle stations) and new mobility models promoted by electric mobility (e.g. use of electric shuttles for public transport).

Threats

T1. High costs of electric vehicles with the same performance compared to traditional ones.

T2. High costs of electric vehicle recharging services.

T3. Planning of Sustainable mobility services is not integrated in the overall planning of the territory (i.e. integration of existing mobility services with energy and environmental strategies, avoiding planning by “spot” initiatives).

7.3 Regional Development Agency of Gorenjska

Strengths

S1. Sufficient number of public ECS

S2. Low price of e-charging in comparison to fossil fuel cost

S3. Support and favorable attitude of PAs toward e-mobility

S4. Relatively high national financial subsidies for the purchase of e-vehicles and e-charging equipment and low rate loans

S5. Introduction of e-mobility and e – cycling by public authorities in the region

S6. Replacement of the fleet of vehicles to e-vehicles.

S7. There is a number of research, manufacturing and innovative companies and institutes with high quality services and products on the field of e-mobility (road, air and water). These companies are increasing their market and cooperation networks across Europe.

S8. Subsidized projects to stimulate uptake in niche fleets, increase knowledge and awareness and reduce barriers.

S9. Participation in European projects.

Weaknesses

W1. High dependency on road traffic due to scattered settlements and unfavored public transportation.

W2. Electric cars are still financially unavailable to the majority of people and subsidies are only given for new cars

W3. The cheap e-car like Zoe has the same price as an old higher class of a car on conventional fuel, but the size, quality, comfort, usability is in favor of the second choice.

W4. Considering the price and range of an e-car and the need to have a parking space at your house to charge it, which means additional investment, visual attractivity of an e-cars to the liking of specific group of people, and the long-term user experience turns buyers away. Except higher priced models, the e-car is more attractive as a second family car.

W5. Energy grid capacity in some areas does not allow setting up ECS and has to be upgraded.

W6. There are no solutions for multi-dwelling buildings.

W7. Different payment systems depending on ECS operator. When looking for a parking spot one will use the ECS that is at that parking lot (if possible).

W8. Exploitation of charging infrastructure currently not profitable. Uncertain how expansion of charging infrastructure will be organized in the future.

W9. Not enough models to convince independents.

Opportunities

O1. E-mobility presents a great opportunity for business and R&I

O2. E – mobility has a positive influence on the environment, air and noise pollution and therefore for the quality of life.

O3. Politically and economically it means less dependency on the countries with fossil fuel resources.

O4. For the environment long term it means preservation of wild life and their habitat.

O5. Economically from tourism aspect countries having ECS infrastructure and e-mobility are more attractive for the users of e-mobility.

O6. Subsidized projects to stimulate uptake in niche fleets, increase knowledge and awareness and reduce barriers.

O7. Participation in European projects.

O8. Reporting obligation for charging point operators would be an opportunity to improve user experience.

O9. Popularity of electric cars is increasing, especially electric company cars.

Threats

T1. Car sector not yet convinced, lobby against electric mobility.

T2. Perception that charging infrastructure is poor within EU- lack of unified and free access data. Fact that the e-charging has to be more frequent than fulling of conventional car.

T3. High prices of electric cars also in the future.

T4. Relativity of environmentally friendly e-vehicles and battery recycling. Scarce material resources for battery components. Research on new type of batteries not giving fast enough results.

T5. EU automotive e-mobility industry underdevelopment influencing EU economy, import of Asian vehicles.

7.4 Region of Attica

Strengths

S1. Practically no electromobility existence

S2. Air pollution from vehicles is well acknowledged

S3. There is a small number of TAXIS using Hybrid Vehicles. The majority is using diesel.

S4. Public buses are using diesel (~60-70%). The rest are using natural gas.

S5. Average per day trip for work is less than 50kms

S6. Existing experience from the electromechanical industry of the past

S7. Attica Region is one of the most engaged Regions in Greece regarding sustainable mobility enhancement policies, having already participated in European funded programs concerning the development of EV charging stations and pilot actions for sustainable mobility and smart city.

S8. More than 10 municipalities in the region conduct their own Sustainable Urban Mobility Plan.

S9. The recent cooperation of several municipalities in Attica for Sustainable Mobility integration under the program of PEDA.

S10. Attica Region is in proximity to central government and decision-making centers, making any new measurements and policies easier for development and management.

S11. Attica Region can benefit from a great research force either from the open market sector or from universities and research centers that have already been established in its territory.

Weaknesses

W1. Higher production cost (compared to conventional cars)

W2. Low recycling rate (battery)

W3. Lack of standards

W4. Long recharging time

W5. Too silent-danger for pedestrians/bicycles

W6. Limited travel range

W7. Low sales lead to low revenue and profits

W8. Low penetration in Greek market

W9. Low consumer awareness

W10. High price of batteries

W11. Administrative issues and government overrides. The unclear, or non-existing in some cases, legal background in reference to electromobility and alternative fuels development and market operation, is the main obstacle Greece needs to overcome to enhance sustainable mobility growth.

W12. Lack of charging infrastructure.

W13. High prices for purchasing EV

W14. RIS3 Smart Specialization Strategy in Attica Region has not included electromobility in its key sectors for development.

Opportunities

O1. Technology development

O2. Improve the governmental aim schemes for EVs and strengthen infrastructure

O3. Growing public awareness about environmental protection

O4. Growing demand of green technologies

O5. Further uncontrolled increase in the price of fossil fuels

O6. Improve of air quality

O7. Unemployment – new jobs will be created

O8. Traffic management could be easier

O9. IBM cooperation in the smart city sector.

O10. The local strategies of several municipalities on Urban Resilience.

O11. The Municipality of Athens has already a strategy on electromobility promotion and a well-documented EV charging station network proposal.

O12. Within the concept of Smart City evolution within Attica, strategic planning for developing a complete strategy to promote the deployment of a broad charging stations network for alternative fuels and EVs can be proven to be a great opportunity in order to increase Renewable Energy Resources (RES) penetration -as indicated in RIS3 Smart Specialization Strategy- and storage system facilities (e.g. batteries, supercapacitors).

Threats

T1. Lack of charging infrastructure
T2. Lack cooperation between EV stakeholders
T3. Different types of chargers
T4. Battery durability
T5. Unknown timeline of the decline in price of technology
T6. Lack of financial resources for investments in development & manufacturing
T7. EU automotive e-mobility industry underdevelopment influencing EU economy, import of Asian vehicles.
T8. The greatest drawback in Greece is the lack of legislation regarding EV charging stations development and ownership (private or public), market entities' role in the development and management of such infrastructure.
T9. As far as incentives are concerned, there are no subsidies granted for EV purchase, charging station deployment and energy prices, thus raising the cost for both owning an EV and developing-managing EV charging infrastructure.
T10. Legally, not all involved entities are specifically defined, both their roles and means of intercommunication are still to be determined, leading to a great deal of confusion to any party wanting to participate in this particular market.
T11. Greece is still a country enduring the impacts of a major economic crisis, making it harder to attract new investors, domestic or foreign.
T12. The coexistence of public and private charging infrastructure is not a viable approach for a healthy and competitive market as seen in several EU countries and regions where e-mobility thrives, yet according to legislation it remains a possible outcome with doubtful results.
T13. Lack of Banking support for new businesses and the uncertainty which prevent any small or medium scale investment
T14. Significant low in EU fund-use
T15. Large number of different stakeholders, at least for the main road network

7.5 Flemish government Department Environment

Strengths
S1. Clean power for transport action plan with concrete goals and measures
S2. Charging infrastructure is unfolding
S3. Subsidized projects to stimulate uptake in niche fleets, increase knowledge and awareness and reduce barriers. Participation in European projects (e-MOPOLI, BENEFIC, IDACS)
S4. Policy guide for local governments
S5. Financial incentives (green fiscality)
Weaknesses

W1. Exploitation of charging infrastructure currently not profitable. Uncertain how expansion of charging infrastructure will be organized in the future.
W2. Reporting obligation for charging point operators did not work.
W3. Fragmentation of competences (e.g. fiscality at the federal level, electric public transport at department of mobility).
W4. Not clear how price transparency on charging can be achieved
W5. Old electric grids in cities are not always sustaining charging infrastructure
W6. Price gap between electric and conventional cars is still too big
W7. Not enough models to convince independents (e.g. electric vans)
W8. Studies and articles in the media that take down electric vehicles
Opportunities
O1. Knowledge: strong research center on mobility (VUB Mobi), unfolding recycling industry (Umicore)
O2. Popularity of electric cars is increasing, especially electric company cars
O3. A growing environmental awareness
O4. Relatively good economic situation (high gross regional product and low unemployment rate).
Threats
T1. Car sector not yet convinced, lobby against electric mobility
T2. Perception that charging infrastructure is poor
T3. Perception that the range of an EV is not enough
T4. High prices of electric cars
T5. Citizens not always convinced that electric mobility is environmentally friendly

7.6 Regional Council of Kainuu

Strengths
S1. Interests for biogas cars and e-vehicles are growing
S2. Mining industry is starting to manufacture battery chemicals, it increases R&D in the region
S3. Strong EC policy push
S4. Possibility to sell alternative vehicles across the border
Weaknesses

W1. Low population density, low demand from the private sector

W2. Long distances in the region and quite less charging stations (e-vehicles, gas)

W3. Old cars in the region, an aging population – low commercial capacity

W4. Too few e-vehicles in the region; demand is not strong enough to increase the number of charging points at the moment

W5. Relating gas vehicles and electric cars: "chicken-egg phenomena". Which should be first, gas station or enough gas cars?

W6. "Middle-phase" from hybrids to full e-vehicles at the moment.

W7. Consumer don´t have enough experience about full e-vehicles.

W8. Electrical cars are much more expensive than usual ones + marginal utility for 'alternative cars' to consumers, not evident yet.

Opportunities

O1. Common/rent test cars

O2. Promote alternative vehicles through public sector initiatives and pilot a basic network of charging stations and solutions.

O3. Promote alternative vehicles to the taxi business. This means some kind of arrangements with funding / financing (banks, loans, more friendly financing solutions)

O4. National tax benefits

O5. Increase of the know-how of economic benefits (using gas cars in heavy traffic: like bus, municipalities garbage trucks)

O6. In the regional level should support investments for farms: in addition of heat, the biogas can be used in traffic. Especially if the bio-fuel can also be sold outside Kainuu, to other regions in Finland with more use of alternative vehicles.

O7. Increase e-mobility & biogas education in Kajaani University of Applied Sciences

O8. Change cars from fuel to biofuel are easy can be made step by step: the marginal utility of alternative – fuels vehicles must be clear. The cost of the alternative cars must become more competitive.

Threats

T1. Resistance to change

T2. Price of full electric cars is too high in the individuals point of view

T3. Technology reliability

T4. The development of a sparsely populated area is slower

T5. Recycling challenges of e-vehicles/battery chemicals

7.7 Rogaland County Council

Strengths

S1. Norway has come a long way compared to many other countries when it comes to introducing e-mobility and incentives.

S2. Governmental support for electromobility. Several effective incentives favoring e-vehicles.

S3. Clean and affordable electricity (mainly hydropower).

S4. BEV prices can compete with the prices of fossil fueled cars (because of incentives).

Weaknesses
W1. Loss of public income due to reduced taxes and tolls for electric cars.
W2. Increase of investment cost for public transport.
W3. Need for more charging stations for longer trips and rural areas.
W4. No hydrogen refueling stations in Rogaland at the moment.
W5. Limited range and long charging time compared to refueling fossil fuels.
W6. Home charging not always possible, i.e. for residents in apartment blocks.
Opportunities
O1. Reduction in emissions from transport (good for environment, public health etc.).
O2. Innovation opportunities (for example: Norway's first hydrogen ferry will be developed and put into traffic in Rogaland in the beginning of the 2020s, hydrogen production opportunities, development of new charging solutions and other technologies related to e-mobility and green transport solutions)
O3. Improvements in public health due to active travel.
O4. Increased e-mobility focus in education, i.e. studies for mechanics and electricians.
Threats
T1. Increased car use because of exemption/reduction from toll fares, ferry rates etc. may cause congestion on the roads.
T2. Increased investment costs for public transport when investing in zero emission technology.
T3. Is there too much focus on a single technology, one path of development?

7.8 Bucharest-Ilfov Regional Development Agency

Strengths
S1. Providing high incentives for the purchase of electric or hybrid vehicles.
S2. Providing high incentives for the installing of the charging infrastructure.
S3. The growth rate of the charging infrastructure network.
S4. The growth rate of the purchasing of electric vehicles.
S5. The possibility to charge electric vehicles free of charge to public charging stations (some located in the big chain supermarkets parking, others in public institutions car parks).
S6. Authorities have created the legislative framework for the diffusion of electro-mobility and alternative fuels mobility.
S7. Participation in European projects like e-MOPOLI.
Weaknesses

W1. It would be necessary an education among school children to make transport activities environmentally friendly in the region. To make them get used to e-mobility and alternative fuels.

W2. It would be constructive that public institutions to set an example in our region by performing actively in this sector of e-mobility (buying electrical cars, provision of infrastructure, etc.).

W3. The electrical car should be regulated in an legislative framework so that car owners can benefit of the electrical car advantages

W4. Lack of awareness campaigns of high level pollution.

W5. The development of the electricity network in close connection with the development of the charging infrastructure.

W6. Price gap between electric and internal combustion vehicles is still too big.

W7. The lack of measures to help the transition to sustainable mobility among niche fleets (e.g. Taxis, Courier Companies).

Opportunities

O1. Supporting the development of the electric vehicles charging network by accessing European funds.

O2. Raising awareness among the population of the region about poor air quality.

O3. The trend of purchasing electric vehicles in considerable increase.

O4. Learning about electro-mobility from other countries that are more specialized in this sector.

O5. Potential for the production of renewable energy from photovoltaic and geothermal sources.

O6. Preparing and introducing into the school curriculum a study program to track the development of electro-mobility in close connection with climate changing.

Threats

T1. Increased bureaucracy as regards the approvals needed to install the charging stations on public roads.

T2. Collapsing the national electricity grid when the number of electric vehicles grows a lot.

T3. Nearly nonexistent communication between regional and central public authorities and stakeholders.

T4. Perception that the range of EV is not enough and also that the charging infrastructure is poor.

7.9 Zemgale Planning Region

Strengths

S1. Zemgale Planning region has Energy Action Plan for 2018-2025 with Green transport section

S2. Available evenly dispersed basic charging point network in the region

S3. Zemgale Planning region administration positive attitude to green transport

S4. Collaboration with university's researchers in the field of green transport and sustainable mobility

S5 Good examples of electric vehicle use for municipality service

S6. Comparatively small region, close to capital Riga - comparatively small distances to drive daily.

Weaknesses

W1. Price gap between electric vehicles and conventional vehicles are still too big
W2. Lack of widespread charging point network
W3. wintertime EV autonomy drop substantially
W4. low average income level of population
Opportunities
O1. Collaboration with researchers of Latvia University of Life Sciences and Technologies working in field of electromobility and alternative fuels
O2. Increasing popularity of low-carbon lifestyles
O3. Economic growth in the region and Latvia
O4. Growth of fossil fuel prices
Threats
T1. Population decreasing and eldering within the region
T2. Technology development of electric vehicles slow down (Price/autonomy factor will remain high).

8. Recommendations

Recommendations for diffusing electromobility and alternative fuels in each project partner region were formulated during two different processes:

1. Stakeholder group meetings: within the framework of the e-MOPOLI project, each project partner region should formulate a group of stakeholders consisting of experts in the field of electromobility and alternative fuels. The members of the regional stakeholders' group belong to one of the following categories: national public authority, regional public authority, local public authority, sectoral agency, SEM, academia/research, general public, business association, national public authority, infrastructure and (public) service provider and industry. During the meetings, the stakeholders are informed about project issues, outputs and results and ask for their valuable contribution in specific aspects of the project based on their knowledge, expertise and experience. The current situation analysis and the results of the GAP and SWOT analysis have been derived through fruitful discussions and ideas exchange among the stakeholders.
2. Round Tables: During official project meetings and interregional learning processes, round tables were organized where representatives of all partner regions were discussing and sharing knowledge, experiences and measures implemented in their regions concerning electromobility and alternative fuels. Through the discussions, recommendation were formulated favoring the promotion of these sustainable technologies. All the recommendations derived from the round tables were collected and assigned to each partner. Due to the fact that some recommendations were expressed as general suggestions, they were assigned to every partner as possible ways for promoting electromobility in the regions. In case that the Round Tables in Province of Brescia and Region of Attica during the next year (they were cancelled to the COVID-19 situation), the recommendations form these two round tables will be integrated in the revised version of this document.

The following tables present the recommendation formulated by the stakeholder group meeting while the table at the end of this chapter the recommendations derived from the round tables.

8.1 Province of Brescia

Project Thematic Areas	Recommendations

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** An interactive map on the location of the charging stations, with information in real time according to the provisions of European and National regulations, it is strongly necessary for the diffusion of e-mobility among territories and citizens. **B2.** It is necessary to overcome the lack of information, in aggregate and single form, related to the charging networks and services (i.e. private owner/sector). For example, existing web-based platforms do not collect all information on installed charging stations on the territory and often it is not possible to query data in aggregate form. **B3.** Even with a focus on building a network of public charging stations, local companies who are not interested in building a public charging station should be included in the regional plans and information campaigns as they can provide valuable extensions to the network because they reduce the number of necessary public charging spots and are an important point of contact to reach commuters who are one main target group for first adoption of electric vehicles. They can also serve as examples and stimulate others to invest and start into an era of e-mobility. Although some of the aspects of interoperability do not apply/are not as important in that case, these companies also benefit from knowledge and consideration of interoperability especially concerning technical aspects but also in educating themselves for mobility beyond their own premises when they have to rely on additional public infrastructure. **B4.** Leverage on private/public touristic sector to increase end-user's acceptance of e-mobility and to facilitate the e-mobility market take-up. **B5.** To diffuse electric vehicles in Local Public Transport (LPT) it is necessary a detailed cost-benefit analysis. Here some criticalities. Less autonomy: Under normal conditions, without important infrastructures on the route, to make the same number of km, as per "traditional vehicles", it is needed about twice the number of electric vehicles compared to traditional buses. Sustainability of investment costs: Cost of electric vehicles (e-buses) on the market today is about 2.5 times compared to the traditional ones. Construction of an important charging plant with high-power levels is very expensive at the moment. Adequate energy availability in the area (distribution from regional to local level) is not always guaranteed. Management difficulties: Due to the bulk of the batteries, the number of places available on the buses may be lower, therefore it is necessary to use a greater number of buses and staff. This means higher costs for LPT services.

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** The public sector needs the public and private research sector contributions to promote and diffuse e-mobility. **G2.** The continuous coordination among different level of public authorities is strongly recommended. **G3.** To guarantee the diffusion of e-mobility initiatives and increase awareness of citizens and end-users it is useful to organize information campaigns on social media and the preparation of brochures to be distributed in the regional and local (Provinces and Municipalities) offices, as already happened for air pollution, separate waste collection etc. **G4.** It is fundamental to constantly updated regional and local regulations and legislations in the field of e-mobility and e-charging infrastructure to follow technologies improvement and market evolutions. **G5.** Municipalities should plan the infrastructure in cooperation with neighboring municipalities in order to homogeneously diffuse e-charging infrastructure. **G6.** Municipalities should discuss the interoperability and management of e-charging infrastructure to protect their interest and the interest of the user. **G7.** Conform on each level (from national to local) procurements, procedures and regulation for charging spots installation. **G8.** It is necessary to think of public transport also in relation to intermodality, for example with bicycles and not just thinking about LPT on the long distance but also in the "last mile" distance. With regard to "electric corridors" promoted by the regional Authority, it is fundamental to plan them also in relation to the electric and traditional cycling mobility. **G9.** Concerning LPT, it is recommended to investigate new opportunities and services in the field of inland water navigation together with tourism sector and private mobility. This could be a good chance to spread the e-mobility (new infrastructures, vehicles and services) and increase end-user acceptance exploiting the geomorphological peculiarities of the Regions (rivers, lakes, …). **G10.** Charging infrastructure must be planned in integration with the sustainable development of urban and extra-urban mobility. Municipalities, and in general the Public Administrations, have to promote favourable conditions for the diffusion of sustainable mobility, and e-mobility (policies, governance, availability of areas, ...) and not to finance the infrastructure and e-vehicles. **G11.** To spread the use of electric and sharing mobility (car-pooling, electric car sharing) it is necessary to have: cultural changes, constantly updated regulation, promotion of the real multi-modality mobility (TPL, bike, ...) and the establishment of incentives for the end user. The new technologies and Apps that facilitate the use of new mobility systems are more accessible to new generations. **G12.** It is necessary a constant dialogue with representative associations (i.e. Confindustria, etc.) **G13.** Extension of the SUMPs also to all Municipalities. **G14.** Integration of regulation and planning of charging infrastructure (from the regional to the local level) and reduction of bureaucracy (i.e. long procedures for authorization). **G15.** Starting from the current legislation (DL 257/2016), it is necessary to encourage the modernization of the PA fleets. **G16.** Policies for the diffusion of the charging spots by the PA towards the private actors, (eg. obligation for all Shopping Centers to install electric

	charging stations).
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Increase alignment among different strategies and governance of Public sector with private sectors (e-mobility operators, service providers, energy suppliers) and research centers (university, R&I) **R2.** Put into practice "theoretical" RIS3 strategies and actions.

8.2 Calabria Region

Project Thematic Areas	Recommendations
Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Impose common standard and interoperability in charging systems to encourage private sectors (i.e. shopping centers, hotels…) to install FAST charging stations in private areas with public access. **B2.** Reduce the use of private cars in urban areas. **B3.** Modernization of Local Public Transports (LPT) fleets (<CO2 emissions, alternative fuels vehicles) with vehicles powered by alternative fuels. **B4.** Encourage the purchase of electric cars and installation of charging stations with targeted marketing actions. **B5.** Promotion of purchase of electric vehicles in private and freight transport.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Policies to encourage (i.e. tax reduction, incentives, …) the purchase of electric vehicles. **G2.** Promote and increase awareness on environmental issues (air quality, CO2 and negative emissions reduction). **G3.** Support policies on sustainable mobility in the next programming period 2021-2027 of the Regional Operation Programme (ROP) with ERDF funds. **G4.** Promote coordination among different public actors (all contributing to same sustainable mobility objectives). **G5.** Promote public transport using alternative fuel vehicles (electric and hybrid).
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Promote and diffuse on-call public services (i.e. buses) and soft e-mobility options (e-bike, scooters). **R2.** Development of monitoring systems for roads and vehicles (with or without driver - see autonomous vehicles) to reduce emissions and increase road safety. **R3.** Development of researches and projects to improve road surfaces and tires (wear, performance ...) also in relation to new mobility models. **R4.** Promote studies and research to increase the battery autonomy (vs. range anxiety) of electric vehicles

8.3 Regional Development Agency of Gorenjska

Project Thematic Areas	Recommendations

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Investments in R&D need to be increased in order to gain faster results, increasing capacity, longevity and sustainability of the batteries. **B2.** Automotive industry needs to increase investment in the production of e-vehicles increase number of models **B3.** Buyers need to be offered calculated financial added value, benefits if purchasing an e-vehicle. **B4.** Decrease price gap: taxation stimuli (e.g. carbon taxation), prolonged premium system **B5.** Reduce waiting time for e-vehicles **B6.** Promote e-vehicles at the same rate as conventional vehicles and by driving and technical test evaluations **B7.** Increase quality of experience for driving an e-car – compensate for lack of gear shifting **B8.** Increase user-friendliness of charging network: reduce improve interoperability of charging points (e.g. develop standards for easy payment solution increasing privacy), improve access to information (price transparency, accessibility, availability), stimuli to increase work-related charging points and fast chargers. **B9.** Stimulate EV transition in public transportation, e.g. busses, taxis, company cars, fright transport. **B10.** Invest in hydrogen technology (efficiency 40–60% - energy losses, except if using warmth, it's 85%) **B11.** As the transition to EV impacts the whole supply chain - implying a serious job shift - education and retraining are required to meet new job opportunities.

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Unified national informational platform for e-charging infrastructure with unified information on type, operation status, locality, owner and then link to the operator for more information and with internal site gathering statistical data. **G2.** Enforcing ad-hoc payment options and enforcing stringent laws on GDPR for e-vehicle users, protecting their right for privacy. **G3.** Continuing with financial subsidies for AVF vehicles and equipment. **G4.** Reconsidering financial subsidies for CNG in LNG passenger public buses. **G5.** Developing policy guide for local governments and stimulate regional and local incentives - Enforcement? **G6.** Addressing grid capacity and upgrades and stimuli for smart grid application to tackle energy consumption peaks. **G7.** In the policy Operational program for the implementation of the European Cohesion Policy for the period 2014 – 2020 there are no measures addressing support for implementation and diffusion of AFV, just for the infrastructure, specifically electric. In the Operational program for the implementation of the European Cohesion Policy for the period 2021 -2027 we propose inclusion of measures to promote the mobility of alternative fuel. **G8.** Finding solutions to remove Euro standard 1, 2, 3 cars from traffic. **G9.** Simplifying administrative procedures for using financial or fiscal incentives. **G10.** There isn't a unique operator of infrastructure, the sources for financing need to be identified, law needs to be written.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Education and training measures for maintenance of AVF **R2.** Actions for technology transfer - European projects Incentives to upscale innovative projects targeted R&D funds, e.g. on heavy duty vehicles, battery resource efficiency, battery innovation, environmental impact of battery resources, smart grids, autonomous driving etc. **R3.** Enforce implementation of already set policies. **R4.** Synergies between different policies **R5.** Monitoring system for the implementation of measures should be established.

8.4 Region of Attica

Project Thematic Areas	Recommendations

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Very few independent improvements are possible. The successful implementation of the whole project may improve the existing situation **B2.** Extensive efforts needed for the cooperation of agents from many fields as Legislation, Taxation, Commerce etc. in order to reach feasible and efficient applications **B3.** Long term issue. A complete register of the problems should be the first step and then the recognition of the various responsible authorities. Step by step procedure for as many as possible obstacles removal. **B4.** Media will play the main role. Events, Social entities and school programs must support the total informative policy. **B5.** Investment in development of required infrastructure in the fields of electric power generation and distribution, charging positions etc. **B6.** Development and evolution of the available technology from the car manufacturers: new attractive models offering convenience and security, in reduced production and operational cost. **B7.** Private sector can give incentives to employees to use EVs and alternative fuels vehicles (i.e. cheaper charging prices, free parking, company cars, free parking in the workplace etc.) **B8.** Promotion of carpooling and car-sharing concepts to introduce these commuting attributes and technologies to everyday life **B9.** Incentives from energy providers' perspective regarding EV charging stations and EV owners in general (i.e. cheap pricing schemes) **B10.** Synergies between RES energy producers and EV charging stations operators to promote green energy policies **B11.** Incentives from companies active in pricing services sector and cooperation with EV car industries (i.e. free charging stations for domestic use) **B12.** Incentives from insurance companies for EV ownership (i.e. cheaper contracts, advantages against diesel and petrol vehicles etc.) **B13.**Tax reduction in buying/leasing EV **B14.** Carbon credits issuing from charging infrastructure

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** The latest European and National Legislation must be considered. Gaps and overlapped texts to be located and cured. Terminology applied in to Geek language to be unified and the maximum possible simplification of the procedures to be targeted. **G2.** This planning must be analyzed in various time phases in order to encourage the sales as the commercial situation is progressed. Incentives for specific types of Vehicles and/or for a certain quantity of sales are useful tools **G3.** This is one of the most effective tools for the National movement in to new era of e-mobility. A preliminary study is already available by HEL.I.E.V. **G4.** The standardization and validation of the available technology, introduction of common rules for quality and adaptation. EU must accept the role of the coordinator, setting the direction for all involved parties. **G5.** Financial incentives such as purchase rebates and subsidies, subsidization of scrapping of conventional ICE vehicles and their substitution with battery electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV), purchase penalties on emission intensive vehicles and purchase tax exemptions, annual circulation tax exemptions, road toll exemptions, free parking, bus lane access. **G6.**The familiarization of users with the characteristics and specification of the new vehicles and the potential of this vehicle technology to cover consumers' needs. The Government, together with industry, should even organize educational programs to increase consumer confidence and understanding of electric vehicles. Likewise, disseminating information about the operation of electric vehicles (including battery life, recharge times, location of charging points, type and cost of repairs, etc.) can help increase consumer trust in these vehicles. **G7.** Introduction of electric vehicles in the Government's own fleet of vehicles. **G8.** Revision and upgrade of the existing institutional framework. Introduction of a package of legislative actions that are directed towards the enforcement of the emerging market for EVs. **G9.** Development of R&D programs that promote the use of materials and innovative designs that can reduce the production costs of electric vehicles. **G10.** Promotion of electrification of public transport system. -Secure funding for electric buses and infrastructure and renew the fleet gradually through public procurement - Collaborate with the public transport operator(s) to define the fleet electrification targets - Involve electricity network operators and electricity suppliers to enable smart charging and ancillary services at bus depots. **G11.** Creation of an expert national group for development of e-mobility initiatives in Greece. **G12.** Establishment of cooperation with all relevant organization in EU with focus to support collaboration efforts. **G13.** Completion of legislation regarding all involved market entities, market operation, data exchange strategies **G14.** Incentives for EV owners (i.e. free parking in designated areas) **G15.** Subsidies for EV purchase **G16.** Promotion campaigns to raise environmental and social awareness (i.e. carpooling and car-sharing)

	G17. Correlation between sustainable mobility actions and e-mobility (compulsory development of Low Emission Zones in city centers and suburban neighborhoods) **G18.** Complete legal framework regarding the EV charging infrastructure **G19.** Building code to have charging infrastructure mandatory
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** During the design and implementation of Smart Specialization Strategy, all the relevant stakeholders (public sector, industry, education and research institutes, technological centers, other institutions, investors) should collaborate and agree on a comprehensive scenario for the development of e-mobility. **R2.** Establishment of monitoring and evaluation procedures that will assess the outputs of the strategy and examine whether specific objectives have been met. Regarding e-mobility, indicators should be measured such as reduction of CO2 emissions, change in the share of green vehicles etc. **R3.** Define action lines within the RIS3 strategy such as: a)Promoting interregional networks of stakeholders working in e-mobility. b) Supporting regional clusters that will promote R&I investments in this field. c) Services for innovative SMEs working in e-mobility. d) Funding infrastructure for testing and certification of important components and systems of e-mobility. e) Funding of large scale deployment actions and public procurement schemes. **R4.** Promotional and educational campaigns properly studied and prepared for various group targets. Support by printed material is necessary **R5.** Close collaboration with economic and administrative authorities. Formation of available budgets case by case. Monitoring of the response **R6.** Nomination of the responsible public authority, preferably from the electric energy production and/or distribution field. Complete and financially supported plan. Tight but realistic time schedule for the creation of whole network. **R7.** updated of the local RIS strategy to set realistic goals for EV and alternative fuels vehicles penetration **R8.** Set measurable goals for EV charging stations deployment combined with RES penetration levels **R9.** Promotion of EV and alternative fuels vehicles use in the Attica Region via incentives and subsidies policies especially for public transportation fleet and logistics **R10.** Promotion of EV and alternative fuels vehicles for small freight vehicles **R11.** Creation of a monitoring system to coordinate regional planning schemes **R12.** E-mobility to be supported by research innovation programs

8.5 Flemish Government Department Environment

Project Thematic Areas	**Recommendations**

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Measures to convince buyers: ○ Decrease price gap: taxation stimuli (e.g. carbon taxation), prolonged premium system ○ Increase EV knowledge, e.g. via communication campaign: clear information on TCO, car types, (semi-)public charging infrastructure, charging at home and environmental benefits of EV. ○ Increase quality and user friendliness of charging network: reduce administrative burden of charging point installation, improve interoperability of charging points (e.g. develop standards for unified identification system), improve access to information (price transparency, accessibility, availability), stimuli to increase work-related charging points and fast chargers. **B2.** Stimulate EV transition in niche fleets, to benefit from catalysator effect, e.g. busses, taxis, company cars, fleet Flemish government. **B3.** Introduce more stringent car standards to stimulate development and production of CP vehicles. **B4.** As the transition to EV impacts the whole supply chain - implying a serious job shift - education and retraining are required to meet new job opportunities.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Framework for public service obligation for basic charging infrastructure **G2.** Strategy and regulation for EV in niche fleets, e.g. working towards licenses only for electric taxis new licenses **G3.** Develop policy guide for local governments and stimulate regional and local incentives **G4**. Enforcement? **G5.** Framework and stimuli for smart grid applications of EV
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Education and training measures, Campaigns **R2.** Technology transfer **R3.** European projects **R4.** Incentives to upscale innovative projects **R5.** Targeted R&D funds, e.g. on heavy duty vehicles, battery resource efficiency, battery innovation, environmental impact of battery resources

8.6 Regional Council of Kainuu

Project Thematic Areas	Recommendations

Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Organize a pilot running for 4 years, based on uptake of latest technology of alternative vehicles, and organize include participants from: ○ car rental companies terms from promoting alternative vehicles ○ taxi businesses same as above ○ bus companies same issue. ○ bus & heavy traffic companies same issue. ○ municipalities & federation of municipalities same issue. **B2.** Create a pilot based on these three types of users to find out usefulness, operationality and attractiveness of the alternative vehicles, and based on the number of pilot-participants to set up a provisional (and first) charging network.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Ensure relevant enabling conditions of the pilot, for example. To offer the regional charging network, or better prices for charging; regular collection of data regarding evidence-based decision making; define education and research needs at national level and claim one part of the national level solution for KAMK. **G2.** Try to link, in complementary way with other regions in Finland that test alternative vehicles so that there will be more data, more evidence for making decisions regarding long term policy support.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Business + Governance = RIS3 programme. Needs action plan and costing. Needs probably lobbying and activation at national level as well even EU level.

8.7 Rogaland County Council

Project Thematic Areas	Recommendations
Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Support the increase of environmentally friendly transport through incentives for alternative fuels and electromobility.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** The current transport strategy describes the county council's strategy for 2018 to 2029. A new and updated strategy will cover the years 2022 to 2033 and will have more focus on environmentally friendly transport. The new strategy is also intended to be more detailed and describe possible measures. The results of e-MOPOLI will give valuable input for the new transport strategy. **G2.** There is a potential for reducing emission from transport. The county needs a strategy for environmentally friendly transport, public as well as private.

RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	No recommendations were formulated.

8.8 Bucharest-Ilfov Regional Development Agency

Project Thematic Areas	Recommendations
Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles. **B2.** Decrease price gap between conventional and electric vehicles. **B3.** Increase the range of the electric vehicles. **B4.**Training employees in the automotive industry to cope with changes in maintenance and service.
Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** As many campaigns as possible across all broadcast media as to the need to protect the environment but also at the benefits of electrical mobility. **G2.** Preparing and introducing into the school curriculum a study program to track the development of electro-mobility in close connection with climate changing. **G3.** Tax and duty surcharges for internal combustion vehicles. **G4.** Introducing the obligation among public authorities that half of the fleet of vehicles to be electric. **G5.** Introduction of zero emission zones in the crowded cities. **G6.** More measures (e.g. incentives) to help the transition to sustainable mobility among niche fleets (e.g. taxis, courier companies, public transport).
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Learning about electro-mobility from other countries that are more specialized in this sector **R2.** Supporting the development of the electric vehicles charging network by accessing European funds. **R3.** Technological transfer from other countries that are more developed in this area.

8.9 Zemgale Planning Region

Project Thematic Areas	Recommendations
Business **Market take-up of sustainable mobility from alternative fuels**	**B1.** Provide information campaigns on the progress and different new solutions in electromobility (vehicle types (incl. two wheelers), models, TCO, financing instruments, charging options, environmental benefits etc.) **B2.** Increase slow charging point network in urban areas **B3.** Increase of indirect financial support or incentives for EV users **B4.** Encourage introduction of EV in niche fleets (with appropriate daily mileage and schedule)

Governance **Needs, requirements and policies to enhance sustainability from e-mobility and alternative fuels**	**G1.** Municipalities shows the good practice by self by using or supporting electromobility **G2.** Introduce obligation to provide charging opportunities near new public service buildings and places **G3.** Continuing with financial subsidies for AVF vehicles and equipment.
RIS3 **e-mobility in relation to RIS3 Smart Specialization Strategy documents**	**R1.** Collaboration with Latvia University of Life Sciences and Technologies in targeted research on most efficient electromobility solutions for municipalities and public services **R2.** Increase participation in European projects encouraging electromobility and alternative fuels **R3.** Support or organize educational and informative events

8.10 Round Tables

Project Region	Partner	Recommendations

Province of Brescia	**RT1.** Setting up national and regional platforms combine all information and data related to e-mobility (infrastructure and e-vehicles) to overcome the lack of information, in aggregate and single form, is a priority. **RT2.** It is recommended a quadruple helix (Public Administrations, Industry, Accademia and citizens) approach and cooperation to overcome local and single disparities and interests for the diffusion of electric and alternative fuels mobility in all transport sectors (private mobility, Local Public Transports, Logistic, …). **RT3.** Increase alignment among different strategies and governance of Public sector with private sectors (e-mobility operators, service providers, energy suppliers) and research centers (university, R&I) **RT4.** Regional Operational Programme (ROP) funds related to sustainable mobility priorities should be more and more focused on structural infrastructure for the charging infrastructure not only for private vehicles (such as e-cars) but also for Local Public Transports and logistic sectors. **RT5.** It is fundamental to constantly updated regional and local regulations and legislations in the field of e-mobility and e-charging infrastructure to follow technologies improvement and market evolutions. **RT6.** It is important to invite relevant stakeholders and bring them together on regular basis for discussion and agreements. **RT7.** Tourism sector combined with sustainable mobility offer great opportunities for the diffusion of electric and alternative fuels mobility. National and Regional policies and funds should take into consideration these opportunities also for the next Programming periods (2021-27) also in relation to pandemic COVID-19 consequences. **RT8.** For a greater diffusion of e-mobility, it is important to include and promote e-mobility in a package of services (i.e. unique ticket for multiple services, intermodality) and across multiple sectors (mobility, tourism, energy…) **RT9.** Campaigns across all broadcast media about the benefits of electrical mobility to increase end-user's awareness on e-mobility opportunities should be implemented together with the sensitization of students at all levels. **RT10.** Digitalization and Smart City/Territories approaches offers a great opportunity for alternative fuel mobility in particular the e-mobility

Calabria Region	**RT1.** The e-MOPOLI project results and cooperation among different stakeholders is a good chance to consolidate a group of stakeholders (public, private, University and associations) that will help the Managing Authority of the Regional Operational Programme to put the basis for next programming period (2021-27). **RT2.** It is recommended to support policies on sustainable mobility (alternative fuels mobility) in the next programming period 2021-2027 of the Regional Operation Programme (ROP) with ERDF funds.1 **RT3.** It is recommended to update and integrate the policy instruments and plan, at all levels, with strategies and technical aspects related to e-mobility vehicles, infrastructures and services. **RT4.** It is recommended to Increase alignment among different strategies and governance of Public sector with private sectors (e-mobility operators, service providers, energy suppliers) and research centers (university, R&I). **RT5.** Regional and local policies should discourage the use of private private cars and vehicles in general, and particularly in urban areas, implementing sustainable local public transports services and promoting new measures for sustainable logistic. **RT6.** the renewal of Local Public Transport fleets offers a great opportunity to include low emissions vehicles and sustainable mobility services favoring e-mobility (i.e. e-busses and hybrid trains). These activities are also good/virtuous examples not only for citizen but also for private entities and businesses. **RT7.** Encourage the purchase of electric cars and installation of charging stations with targeted marketing actions. **RT8.** Promote electromobility as a package of services offer. **RT9.** Encourage the installation and integration of renewable energies (i.e. solar panels) in the charging system for all electric vehicles. **RT10.** Promote common standard and interoperability in charging systems to encourage private sectors (i.e. shopping centers, hotels…) to install charging stations in private areas with public access. **RT11.** Encourage the setting up of national and regional platforms to combine all information and data related to e-mobility (infrastructure and e-vehicles) to overcome the lack of information, in aggregate and single form, is a priority. **RT12.** Promotion of integrated research projects that approach not only mobility but also energy and environment issues favouring the local Universities, research centres, their competences and international projects. **RT13.** Encourage the promotion and sensitization on e-mobility opportunities for citizens, end-users and students.

Regional Development Agency of Gorenjska	**RT1.** Setting up a national platform to combine all information and data seems one of the most efficient ways. **RT2.** Call for projects is a good option. Subsidies can also form an interesting trigger. **RT3.** It is important to invite all the most important stakeholders and bring them together on regular basis for discussion and agreements. **RT4.** Incentives should be given for increasing EV purchase. **RT5.** Electromobility should be offered as a package of services. **RT6.** Public sector (decision makers) should start with e-mobility themselves and show good examples to private entities and businesses. **RT7.** Use of solar energy to charge electric cars **RT8.** Use of photo solar panels to recharge electric vehicles **RT9.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles **RT10.** Campaigns across all broadcast media about the benefits of electrical mobility
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Flemish Government Department Environment	**RT1.** SME's should get familiar with European funds **RT2.** European funds should be made known and the actors should be supported to apply **RT3.** A coordinator on the Flemish level could be a good solution. **RT4.** Smaller fleets changed for electric vehicles should also be supported. **RT5.** Setting up a national platform to combine all information and data seems one of the most efficient ways. **RT6.** Call for projects is a good option. Subsidies can also form an interesting trigger. **RT7.** It is important to invite all the most important stakeholders and bring them together on regular basis for discussion and agreements. **RT8.** Incentives should be given for increasing EV purchase. **RT9.** Electromobility should be offered as a package of services. **RT10.** Public sector (decision makers) should start with e-mobility themselves and show good examples to private entities and businesses. **RT11.** Use of solar energy to charge electric cars **RT12.** Use of photo solar panels to recharge electric vehicles **RT13.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles **RT14.** Campaigns across all broadcast media about the benefits of electrical mobility
Regional Council of Kainuu	**RT1.** Critical point is that the companies need partners and support to apply and use the funding. **RT2.** Certain part of the structural funds have to be related to the low-carbon economy. **RT3.** Horizon 2020 is a competitive program, so networking and lobbying are needed to receive funding. **RT4.** Setting up a national platform to combine all information and data seems one of the most efficient ways. **RT5.** Call for projects is a good option. Subsidies can also form an interesting trigger. **RT6.** It is important to invite all the most important stakeholders and bring them together on regular basis for discussion and agreements. **RT7.** Incentives should be given for increasing EV purchase. **RT8.** Electromobility should be offered as a package of services. **RT9.** Public sector (decision makers) should start with e-mobility themselves and show good examples to private entities and businesses. **RT10.** Use of solar energy to charge electric cars **RT11.** Use of photo solar panels to recharge electric vehicles **RT12.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles **RT13.** Campaigns across all broadcast media about the benefits of electrical mobility

Rogaland County Council	**RT1.** Setting up a national platform to combine all information and data seems one of the most efficient ways. **RT2.** Call for projects is a good option. Subsidies can also form an interesting trigger. **RT3.** It is important to invite all the most important stakeholders and bring them together on regular basis for discussion and agreements. **RT4.** Incentives should be given for increasing EV purchase. **RT5.** Electromobility should be offered as a package of services. **RT6.** Public sector (decision makers) should start with e-mobility themselves and show good examples to private entities and businesses. **RT7.** Use of solar energy to charge electric cars **RT8.** Use of photo solar panels to recharge electric vehicles **RT9.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles **RT10.** Campaigns across all broadcast media about the benefits of electrical mobility
Bucharest-Ilfov Regional Development Agency	**RT1.** National environmental agency programme to encourage purchasing electric cars. **RT2.** Critical questions concerning the existing structures in Romania should be solved **RT3.** Setting up a national platform to combine all information and data seems one of the most efficient ways. **RT4.** Call for projects is a good option. Subsidies can also form an interesting trigger. **RT5.** It is important to invite all the most important stakeholders and bring them together on regular basis for discussion and agreements. **RT6.** Incentives should be given for increasing EV purchase. **RT7.** Electromobility should be offered as a package of services. **RT8.** Public sector (decision makers) should start with e-mobility themselves and show good examples to private entities and businesses. **RT9.** Use of solar energy to charge electric cars **RT10.** Use of photo solar panels to recharge electric vehicles **RT11.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles **RT12.** Campaigns across all broadcast media about the benefits of electrical mobility

Zemgale Planning Region	**RT1.** If you have support schemes, it's easier to innovate and to join the e-mobility sector. **RT2.** More official plans and defined support instruments are needed. **RT3.** Stakeholder networking is seen as a good idea, because regional e-mobility planning is needed. **RT4.** Setting up a national platform to combine all information and data seems one of the most efficient ways. **RT5.** Call for projects is a good option. Subsidies can also form an interesting trigger. **RT6.** It is important to invite all the most important stakeholders and bring them together on regular basis for discussion and agreements. **RT7.** Incentives should be given for increasing EV purchase. **RT8.** Electromobility should be offered as a package of services. **RT9.** Public sector (decision makers) should start with e-mobility themselves and show good examples to private entities and businesses. **RT10.** Use of solar energy to charge electric cars **RT11.** Use of photo solar panels to recharge electric vehicles **RT12.** Raising awareness among prospective buyers about the benefits of purchasing electric vehicles **RT13.** Campaigns across all broadcast media about the benefits of electrical mobility

e-MOPOLI: Electro MObility as driver to support POLicy Instruments for sustainable mobility

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