



10th INTERNATIONAL CONGRESS
ON TRANSPORTATION
RESEARCH



ICTR 2021

**September 1-3
Rhodes, Greece**

Action Plan for promoting electromobility in the Region of Attica

Foteini Orfanou

Transportation Engineer, PhD Candidate

Together with:

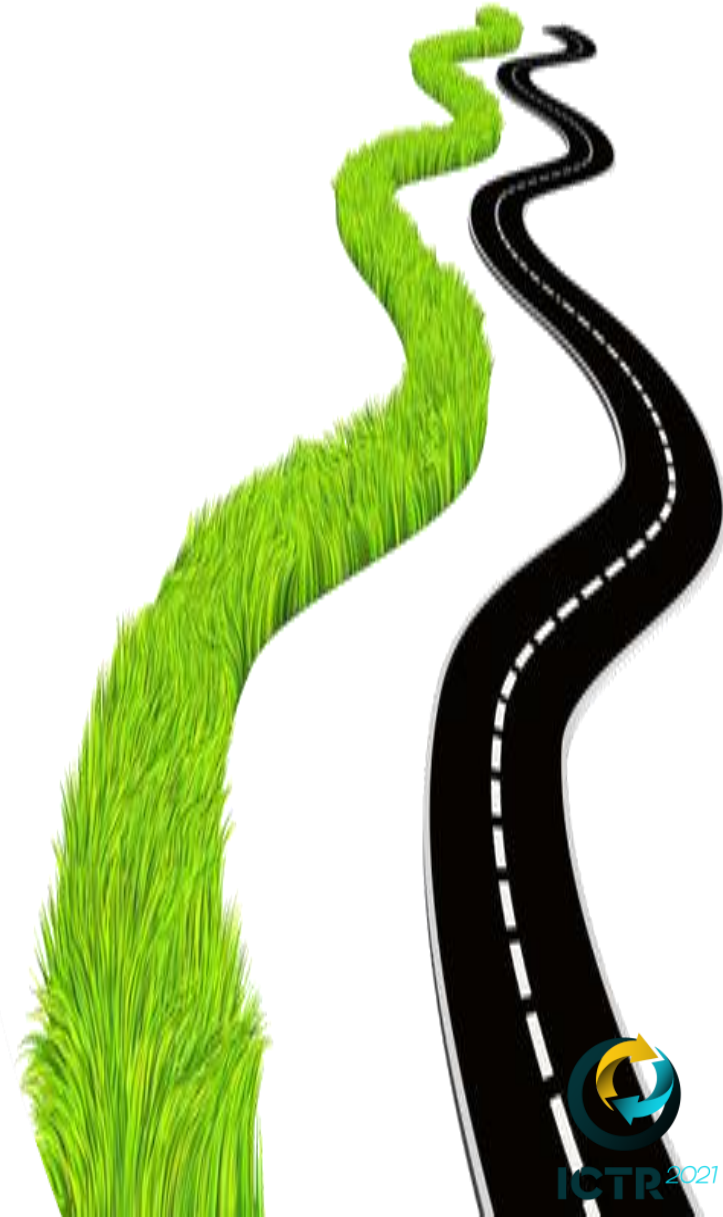
Panagiotis Papantoniou, Eleni Vlahogianni and George Yannis



National Technical University of Athens
Department of Transportation Planning and Engineering

Introduction

- Smart and sustainable cities are gaining more and more attention
- Electromobility and alternative fuels
 - Key solutions towards cleaner and greener transportation systems
 - Significant environmental benefits
- During the last year significant progress in Greece
 - But the penetration rate is still low
- Effective promotion of these technologies
 - Concrete actions need to be taken



Scope of Work

- Presentation of methodology for Action Plan formulation
- Presentation of an Action Plan template
- Presentation of the Action Plan of Region of Attica



The eMOPOLI project

- **Title of the project:**
Electro MObility as driver to support POLicy Instruments for sustainable mobility
- **Project partners**
 - 9 regions from 8 European countries
- **Duration of the project:**
54 months (June 2018 – November 2022)
- **Framework Program:**
Program Interreg Europe
- **Project Objectives:**
Diffusion of electro-mobility for a greener, safer and more efficient traffic in European Regions



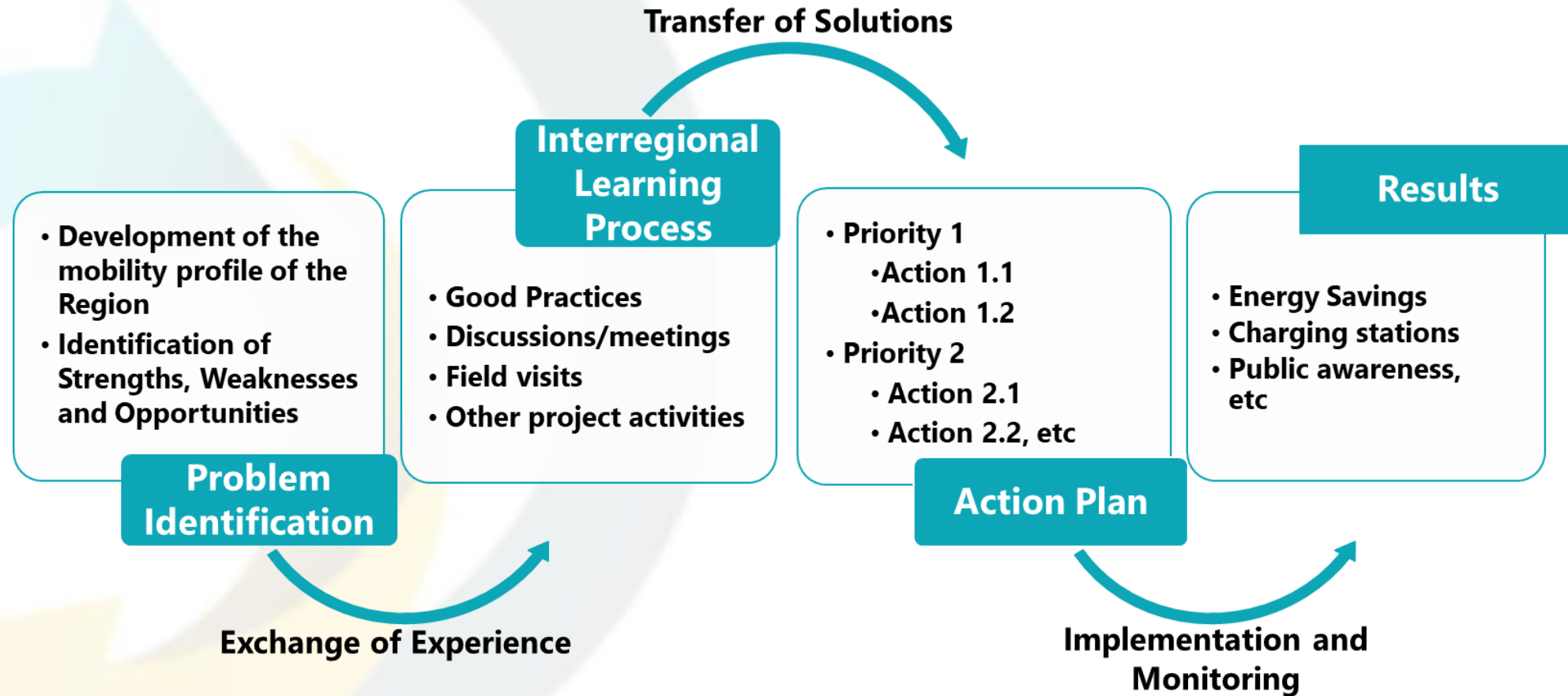
Kainuun liitto



Flanders
State of the Art



Methodology



Problem Identification



☐ Current situation

☐ GAP Analysis

☐ SWOT Analysis

☐ Industry

☐ Authorities

☐ Academia/Research

☐ Infrastructure

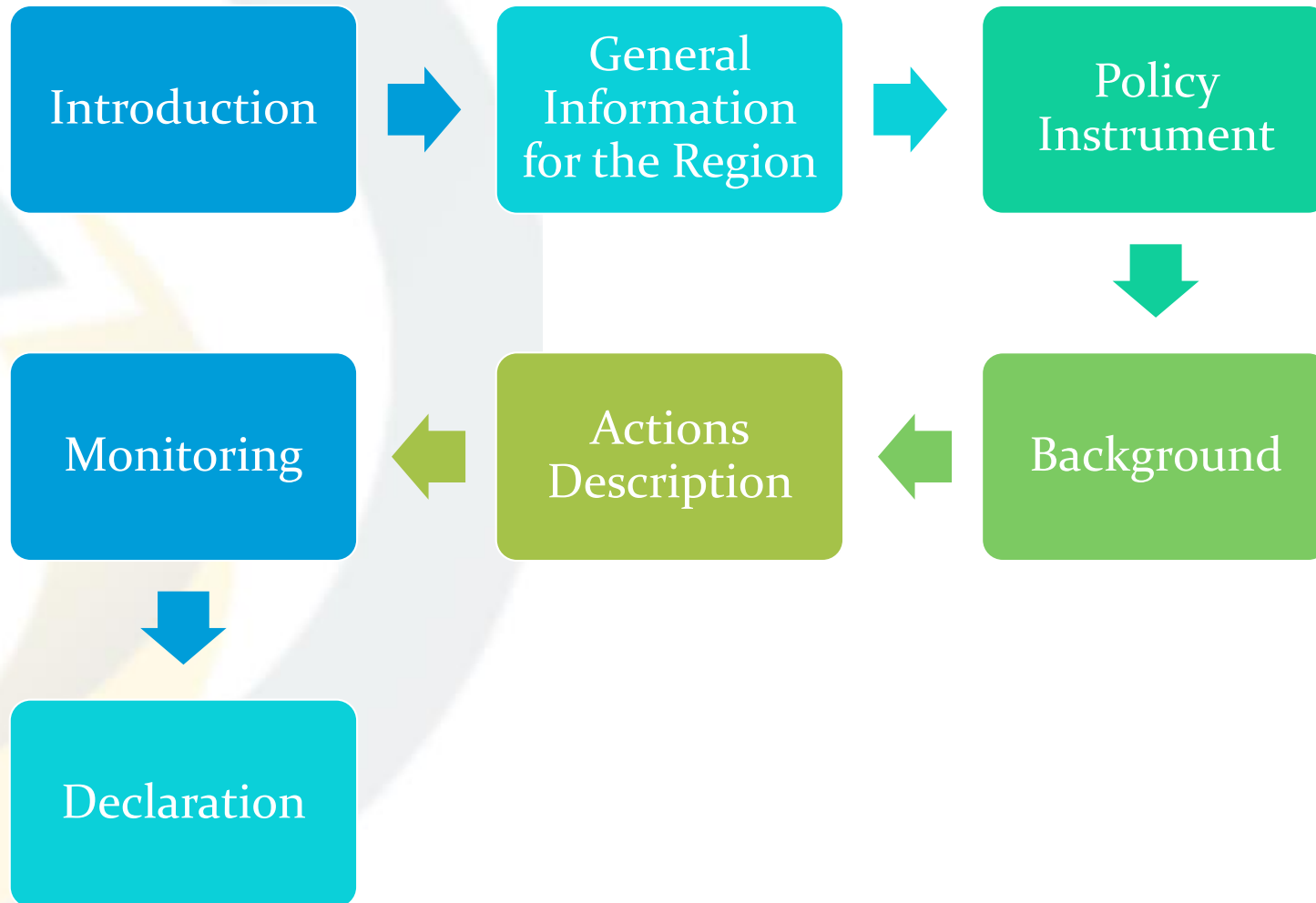
☐ Business Association

The Action Plan - Characteristics

- Provides details on how lessons learnt will be implemented
- Describes the policy instrument addressed
- Includes concrete, targeted, reasonable actions
- Specifies the defined actions
- Describes the inspiration source for the actions
- Indicates how the actions contribute to policy instrument improvement
- Shows the monitoring process of the actions



The Action Plan - Structure



The Action Plan for Attica Region

- Name of the policy instrument addressed:
 - Attica ROP 2014-2020, *Priority Axis 6: Improving Quality of Life in Urban Environment*
- Priorities of Axis 6:
 - Integration of e-mobility and AF infrastructure in spatial planning to facilitate penetration of private e-vehicles and smart mobility
 - E-mobility and AFV solutions for tourism to address the minimization of local noise and air pollution due to the highly periodic demand in touristic areas.
 - Integration of AFV solutions to existing infrastructure
 - Promoting multimodality with AFV technologies to enhance public health and quality of life



The Action Plan for Attica Region

➤ Strengths

- S1. Air pollution from vehicles is well acknowledged
- S2. Average per day trip for work is less than 50kms
- S3. Existing experience from the electromechanical industry
- S4. Participation in European funded programs concerning the development of EV charging stations and pilot actions for sustainable mobility and smart city.
- S5. More than 10 municipalities in the region conduct their own Sustainable Urban Mobility Plan.
- S6. Cooperation of several municipalities in Attica for Sustainable Mobility integration under the program of PEDDA.
- S7. Attica Region is in proximity to central government and decision-making centres
- S8. Attica Region can benefit from a great research force from the open market sector or from universities and research centres that have already been established in its territory.
- S9. The Municipality of Athens has already a strategy on electromobility promotion and a well-documented EV charging station network proposal.

➤ Weaknesses

- W1. Higher production and purchase cost
- W2. Lack of standards
- W3. Low sales lead to low revenue and profits
- W4. Low penetration in Greek market
- W5. Low consumer awareness
- W6. High price of batteries
- W7. Administrative issues and government overrides due to unclear, or non-existing in some cases, legal background
- W8. Lack of charging infrastructure.
- W9. RIS3 Smart Specialization Strategy in Attica Region has not included electromobility in its key sectors for development.
- W10. Lack cooperation between EV stakeholders

The Action Plan for Attica Region

➤ 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. IBM cooperation in the smart city sector.
- O9. The local strategies of several municipalities on Urban Resilience.
- O10. 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 increase (RES) penetration and storage system facilities.

➤ Threats

- T1. Different types of chargers and battery durability
- T2. Unknown timeline of the decline in price of technology
- T3. Lack of financial resources for investments in development & manufacturing
- T4. EU automotive e-mobility industry underdevelopment influencing EU economy, import of Asian vehicles.
- T5. Lack of legislation regarding EV charging stations development and ownership, market entities' role in the development and management of such infrastructure.
- T6. Legally, not all involved entities are specifically defined, both their roles and means of intercommunication are still to be determined
- T7. The economic crisis, makes it harder to attract new investors
- T8. 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
- T9. Lack of Banking support for new businesses and the uncertainty which prevent any small or medium scale investment
- T10. Large number of different stakeholders, at least for the main road network



The Action Plan for Attica Region

Priority Axis 1: Equipment/Vehicles

- ✓ Renewal of the vehicle fleet of the Region of Attica with electric vehicles
- ✓ Feasibility and Financial Studies for the scenario selected

Priority Axis 2: Infrastructure

- ✓ Installation of charging stations in 4 key locations
- ✓ Feasibility and Financial Studies for the scenario selected

Priority Axis 3: Promotion

- ✓ Organization of seminars/ exhibitions/ conferences for raising public awareness

The Action Plan for Attica Region

		2021										2022												2023			
		March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February		
Priority Axis 1: Vehicles/Equipment	Action 1: Feasibility and Financial study for the purchase of electric vehicles	Data Collection Market Research																									
		Scenarios Development																									
	Action 2: Renewal of the vehicle fleet of the Region of Attica with electric vehicles	Financial Analysis		Internal process for funding		Tender Preparation										Tender duration						Offers evaluation, selection of the optimal one and purchase/release of the electric vehicles					
Priority Axis 2: Infrastructure	Action 1: Feasibility and Financial study for the purchase of electric vehicles	Data Collection Market Research																									
		Scenarios Development																									
	Action 2: Renewal of the vehicle fleet of the Region of Attica with electric vehicles	Financial Analysis		Internal process for funding		Tender Preparation										Tender duration						Offers evaluation, selection of the optimal one and purchase/release of the electric vehicles					
Priority Axis 3: Promotion	Action 1: Organization of seminars/ exhibitions/ conferences for raising public awareness								Organization of seminars/ exhibitions/ conferences for raising public awareness																		

Conclusion

- Requirements for Action Plan Formulation
 - Current situation analysis
 - Identification of deficiencies and gaps
 - Detection of assets
- An Action Plan should:
 - Be clear, precise
 - Include concrete, reasonable and realistic actions
 - Be detailed concerning actions description
- A good and effective Action Plan can be the guide for other regions and stakeholders
- The actions can be an inspiration for policy makers





10th INTERNATIONAL CONGRESS
ON TRANSPORTATION
RESEARCH



ICTR 2021

**September 1-3
Rhodes, Greece**

Action Plan for promoting electromobility in the Region of Attica

Foteini Orfanou

Transportation Engineer, PhD Candidate

Together with:

Panagiotis Papantoniou, Eleni Vlahogianni and George Yannis



National Technical University of Athens
Department of Transportation Planning and Engineering