

9th INTERNATIONAL CONGRESS
ON TRANSPORTATION
RESEARCH



ICTR 2019

**October 24-25
Athens, Greece**

Embracing Electromobility in Greece: Review of Good Practices in the Region of Attica

Foteini Orfanou

Transportation Engineer, Research Assistant

Together with:

Panagiotis Papantoniou, Eleni Vlahogianni, George Yannis



National Technical University of Athens
Department of Transportation Planning and Engineering



Background and Objectives

➤ Background:

- Energy consumption and emissions production is being **increased worldwide**
- Major Contributors: **transportation sector** and especially **road transportation** field (EU data)
- New features to monitor and analyze driver behavior through
 - **Electromobility**
 - **Alternative fuels**
- Adopting measures named as **Good Practices**

➤ Objectives:

- **Identification** and **analysis** of Good Practices in the Region of Attica
- **Classification** of GPs
- **Evaluation** of GPs
- **Ranking** of GPs



Review and Classification of GPs

Category 1: Development of charging infrastructure

- GP3: **Installation of 7 charging stations** and **demo pilot** project in Athens
- GP5: **Action Plan** for the development of electric vehicles charging stations
- GP6: Development of the **first network of EV charging stations**
- GP8: Plan for infrastructure design for **EV charging station installation**
- GP9: **Installation of 4 Vehicle-2-Grid EV charging stations**

Category 2: Promotion and Awareness

- GP1: **Exhibition of electric scooters** and creation of a GIS web platform
- GP7: Hi-Tech **Eco Mobility Rally**

Category 3: Charging and tolling policies favoring e- vehicles

- GP2: **Composition of a Committee** responsible for the investigation of the ways that the introduction and penetration of electric vehicles in the Greek market.

Category 4: Research, education and training

- GP4: Development, construction and operation of the **first standalone Solar Electric-Vehicle (EV) Charging Station** in the country, "CARPORT"
- GP10: The **Ecocar**

Evaluation of Good Practices

- Evaluation Criteria
 - Relative advantage
 - Ease of Use
 - Vehicle Performance
 - Awareness
 - Environmental benefit
 - Energy system storage operation and management enhancement

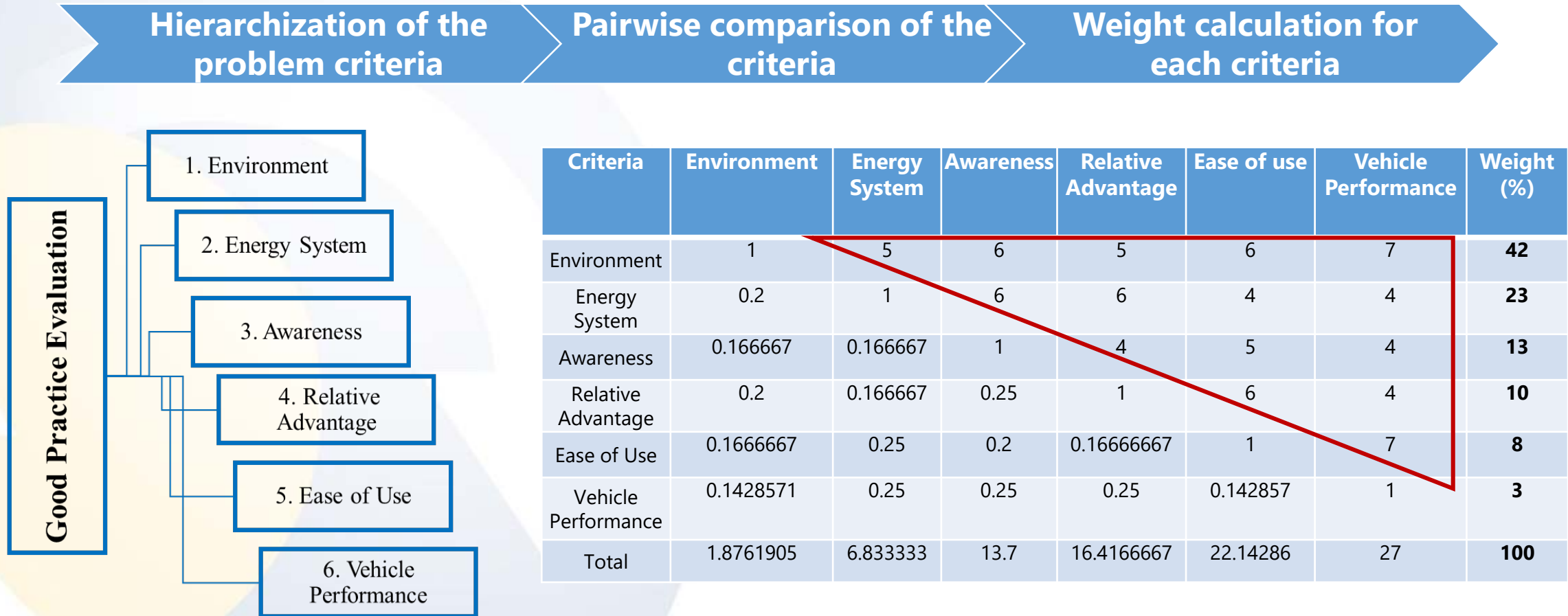
Good Practices	Relative Advantage	Ease of Use	Vehicle Performance	Awareness	Environmental	Energy System
Good Practice 1	3.5	3.5	4*	4	0	0
Good Practice 2	4	1	0	3	0	0
Good Practice 3	1	3	0	3.5	3	1
Good Practice 4	1	3	0	3.5	4	4
Good Practice 5*	3.5	4	0	4	3	3
Good Practice 6	2	4	0	1	0	0
Good Practice 7	3	4	3.5	4	0	0
Good Practice 8*	3.5	4	0	4	3	3
Good Practice 9	1	3	0	3.5	4	4
Good Practice 10	3.5	4	4	4	3.5	2

- Group of 15 experts
- Evaluation scale 0 – 5



Ranking of Good Practices

➤ Analytic Hierarchical Process (AHP)



Results and Conclusions

- GPs with **high evaluation score**:
 - GP9: Installation of 4 Vehicle-2-Grid EV charging stations
 - GP4: "CARPORT" charging station
 - GP10: The Ecocar
- Most Important Evaluation Criteria:
 - **Energy system**
 - **Environmental Impact**
- **Share** and **exchange** of experience
- Knowledge **transferability**
- **Policy making process** improvement and policy effectiveness increase
- Useful **guide** for policy makers and stakeholders



9th INTERNATIONAL CONGRESS
ON TRANSPORTATION
RESEARCH



ICTR 2019

**October 24-25
Athens, Greece**

Embracing Electromobility in Greece: Review of good practices in the Region of Attica

Foteini Orfanou

Transportation Engineer, Research Assistant

Together with:

Panagiotis Papantoniou, Eleni Vlahogianni, George Yannis



National Technical University of Athens
Department of Transportation Planning and Engineering

