Encouraging the Use of Electric Cars in Parana: Charging Stations in Urban Areas

Universidad Tecnológica Nacional
Facultad Regional Paraná

Electronics and Electromechanical
Engineering Departments
Inglés I - 2023

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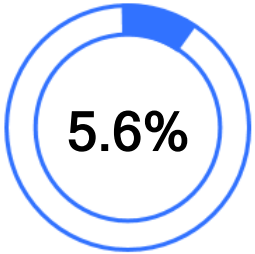
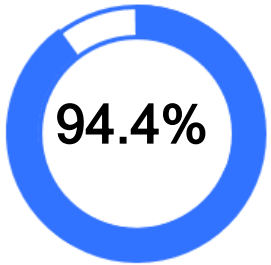
Introduction

Electric Cars vs Combustion Cars



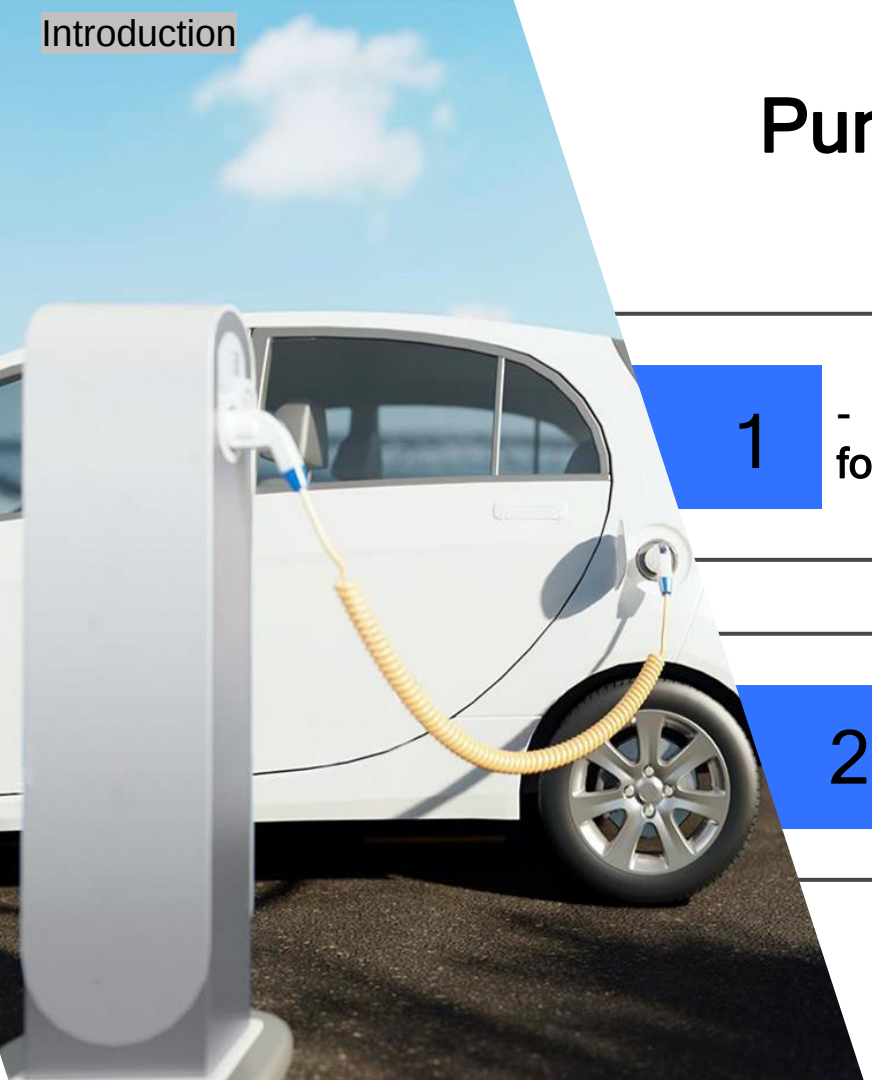
Electric Cars

- They do not release gas
- They do not generate noise
- They require little maintenance
- They do not generate many monetary expenses



Combustion Cars

- They release 140g of CO2.
- They cause noise pollution.
- They require a lot of maintenance
- They generate a lot of fuel costs

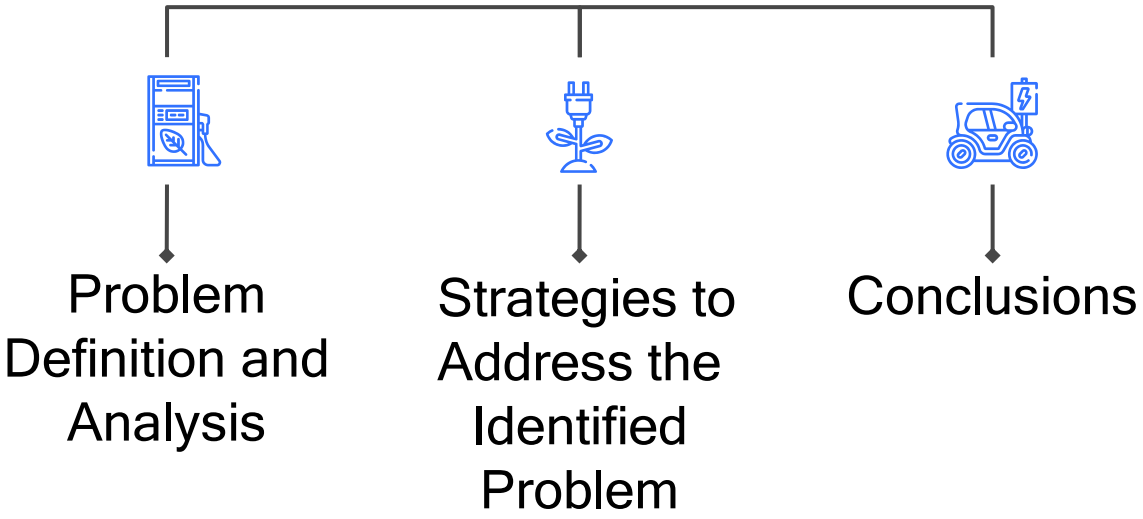


Purpose of this presentation

1 - Analyze the installation of charging stations for electric cars.

2 - Raise awareness about the use of electric cars.

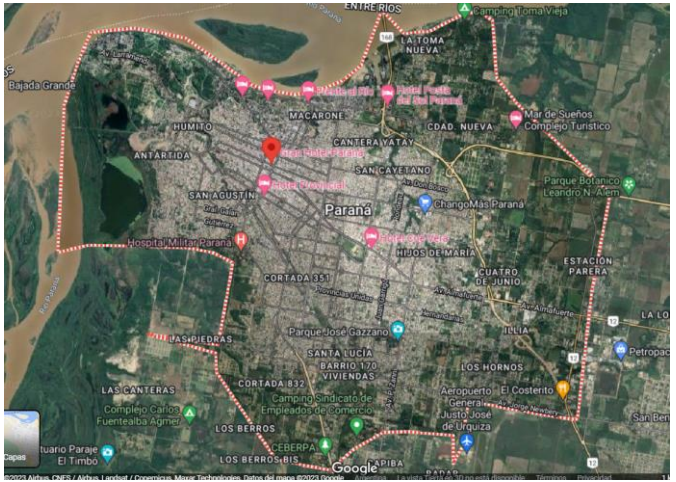
How are we going to address these issues?



Problem Definition and Analysis: Description of the Context

Description of the Context

- It is a city with an area of 137 km2
- It is in the province of Entre Ríos
- It is surrounded by agricultural and livestock land.



Map of the city of Parana

Parana

Over 390,000 inhabitants

One vehicle for every 3.5 inhabitants

100,000 vehicles

An emission of 140 grams of CO_2 per kilometer

Problem Definition and Analysis: Problem Statement

Problem Statement

What is the problem?

Scarcity of electric vehicles

How do we solve it?

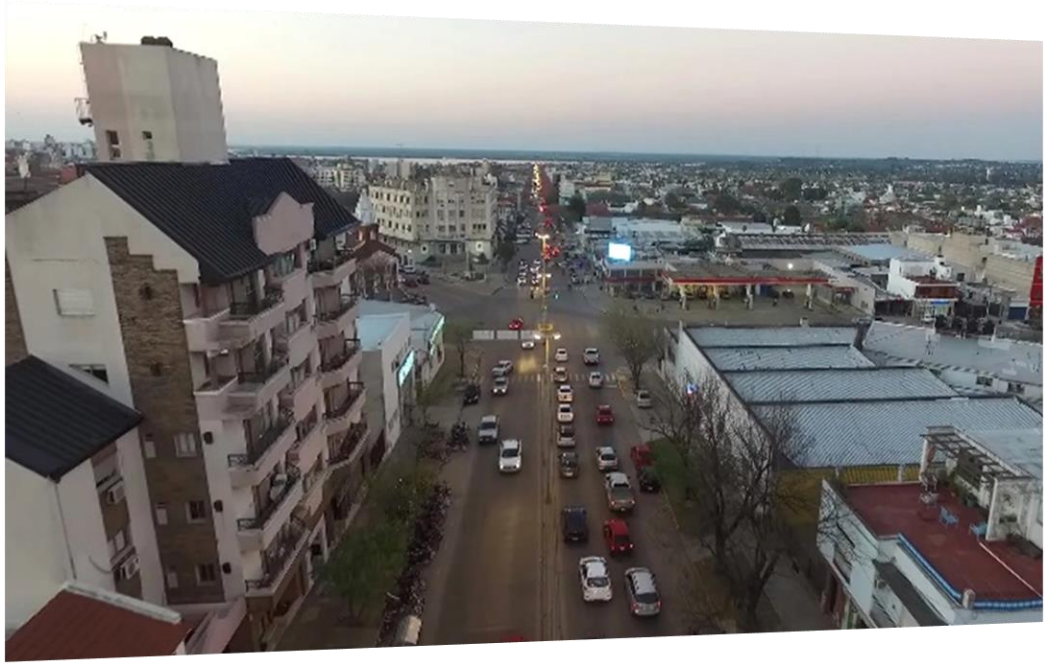
Charging points for electric vehicles

Problem Definition and Analysis:

Description of Scenes that Help Picture the Problematic Situation

Problem Definition and Analysis: Description of Scenes that Help Picture the Problematic Situation

Traffic in the city of Paraná



Problem Definition and Analysis: Description of Scenes that Help Picture the Problematic Situation

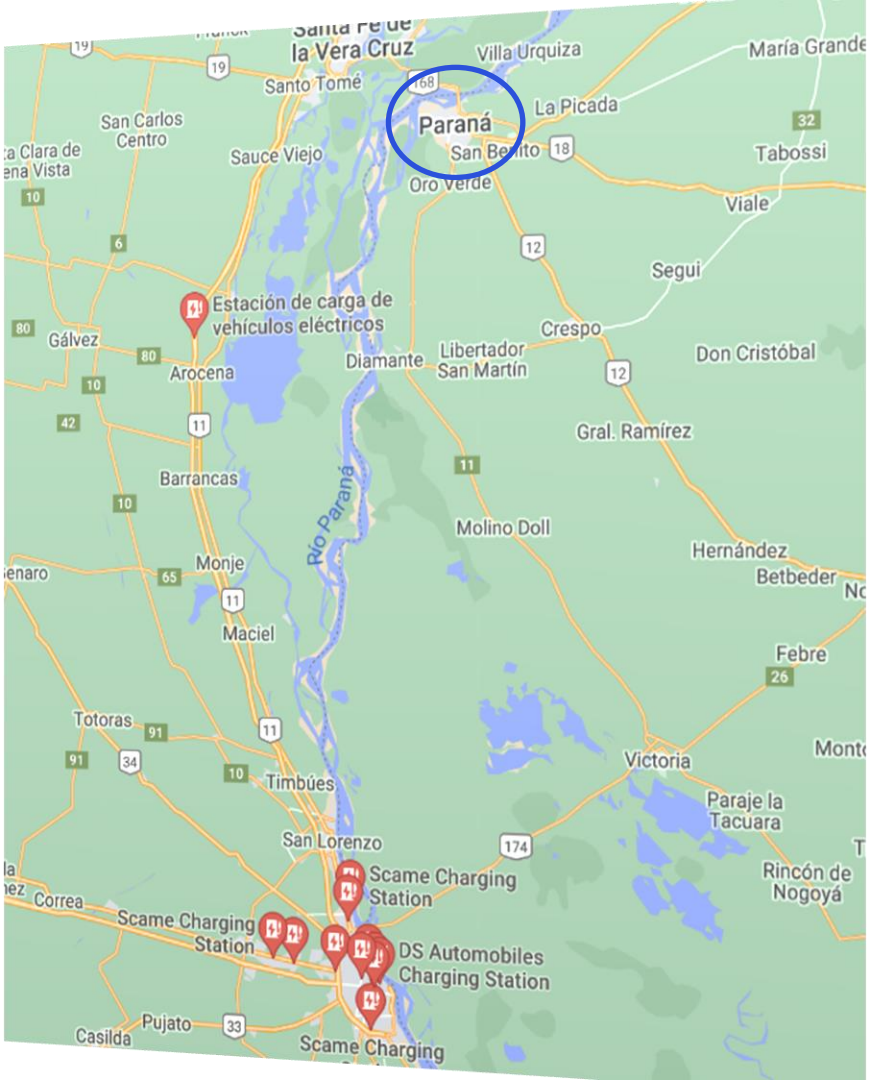
Gas station in the city of Paraná

Problem Definition and Analysis: Description of Scenes that Help Picture the Problematic Situation

Car dealer in the city of Paraná

Problem Definition and Analysis: Description of Scenes that Help Picture the Problematic Situation

Charging stations map



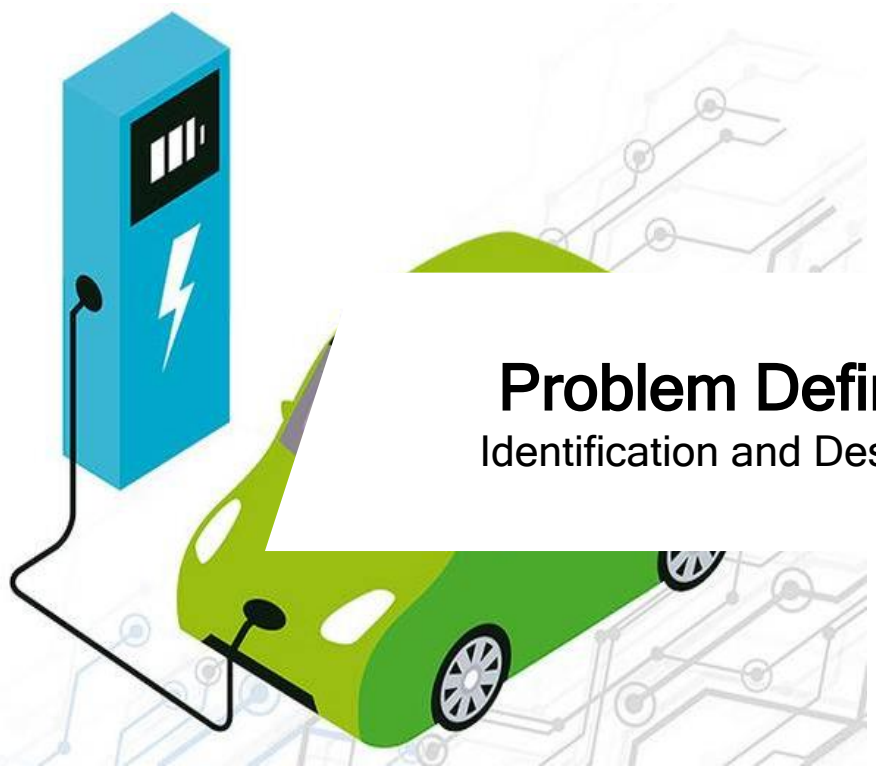
Problem Definition and Analysis:

Identification and analysis of causes or factors that give rise to the problem

Problem Definition and Analysis: Identification and analysis of causes or factors that give rise to the problem

Causes

- Lack of infrastructure
- Very high cost
- Lack of autonomy



Problem Definition and Analysis:

Identification and Description of the Consequences

Consequences

Problem definition and analysis: Identification and Description of the Consequences.

- Noise Pollution
- Dependency on Fossil Fuels
- Environmental Pollution

The way forward:
Problem approach

Problem approach

-Implementation of financial incentives

-Municipal subsidy programs for businesses

-Strategic placement of charging stations

-Establishment of safety and quality standards for charging stations

-Educational campaigns promoting the advantages of electric vehicles

The way forward:

Strengths and Weaknesses of the Proposal

Strengths and Weaknesses of the Proposal

Strengths

-Reduction of environmental pollution

-Acoustic reduction

-Decrease in people's monetary spending

-New job positions

-Increase in the number of tourist visitors to the city

Weaknesses

-A large investment of money

-A lot of space for installations.

-Their dependence on a reliable and efficient electrical grid.

Conclusion

Conclusion

Problem in Paraná: Lack of Electric Vehicles

-Shortage of charging infrastructure
-Environmental and acoustic pollution
-Economic burden and maintenance costs for combustion vehicles

Proposed Solution: Strategic Installation of Charging Stations

-Stations in different areas

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