

ENVIRONMENTAL VALUATION OF THE BENEFITS OF ELECTRIC VEHICLES AND THEIR COST BENEFIT ANALYSIS IN DEVELOPING COUNTRIES IN THE CASE OF TURKEY

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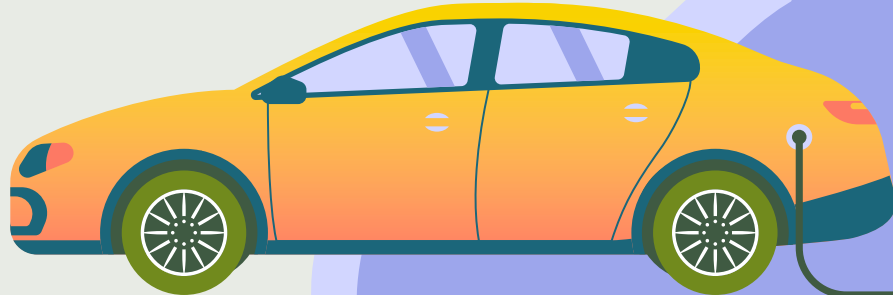


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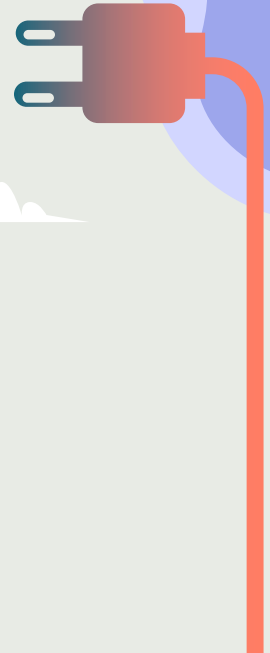
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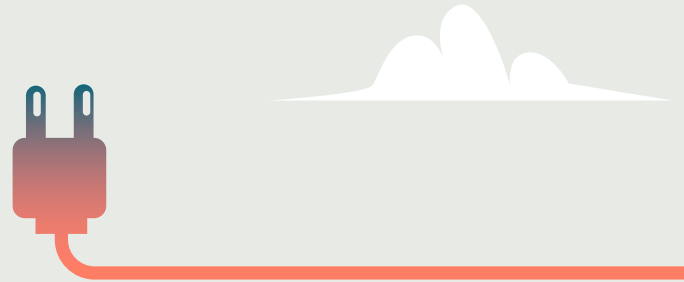
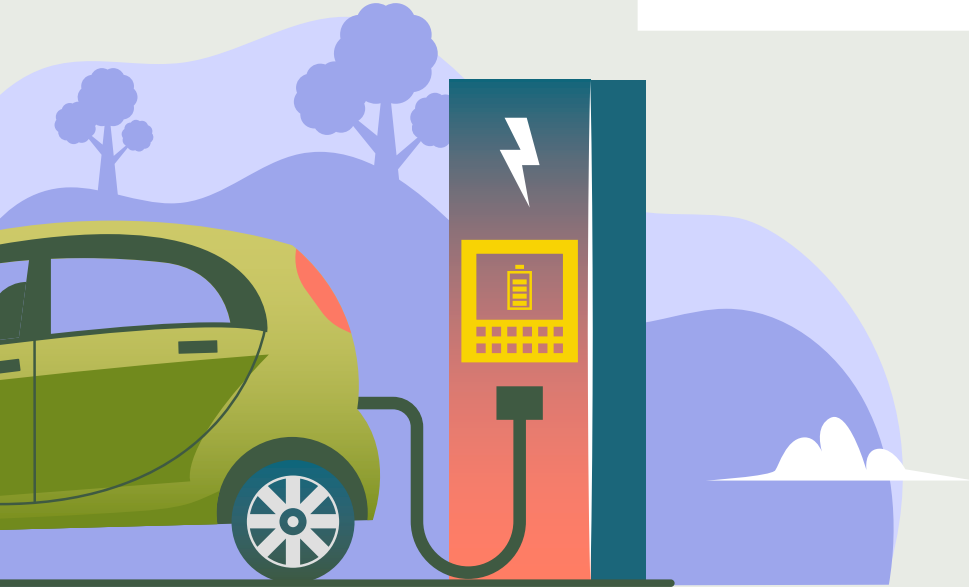
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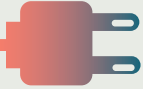


01

INTRODUCTION

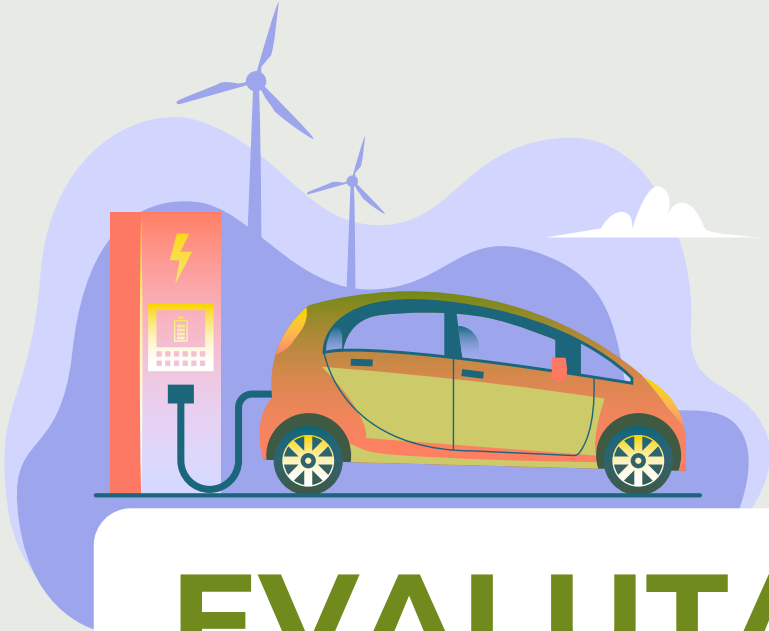


INTRODUCTION



- Transportation and Human Development have positive relation.
- 86% of World's population live in non-developed countries.
- Transportation is one of the reasons for GHG emission

Country Name	Population (in millions)	Number of Cars (in millions)	Motor Vehicles per 1000 people	GNI per capita (in dollars)
Argentina	45,8	18,5	402	9960
Brazil	214,3	83	386	7900
Mexico	126,7	50,4	391	9590
Poland	37,7	25,9	687	16850
Romania	19,1	8,5	441	14200
South Africa	59,4	10,34	176	6530
Turkey	84,8	21,76	254	9920



02



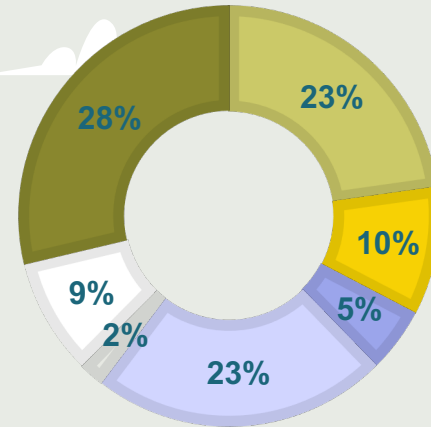
EVALUTATION OF EV

EVALUTATION OF EV

GLOBAL CO₂ EMISSION BY SECTOR, 2022

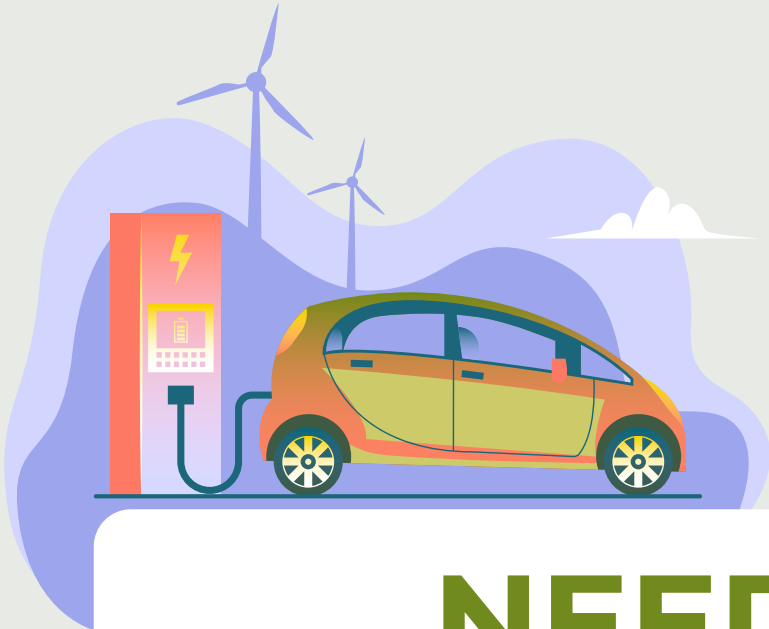

Road Transport **77%**

- Industry
- Buildings
- Other
- Transport
- Power oil
- Power gas
- Power coal




Fossil Fuels vs Battery





03

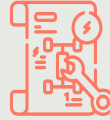


NEEDS OF EV

NEEDS OF EV



Battery



Infrastructure



**Vehicle Care
Services**



**Energy Supply
Sources**



**Economic
Conditions**

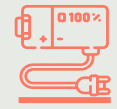
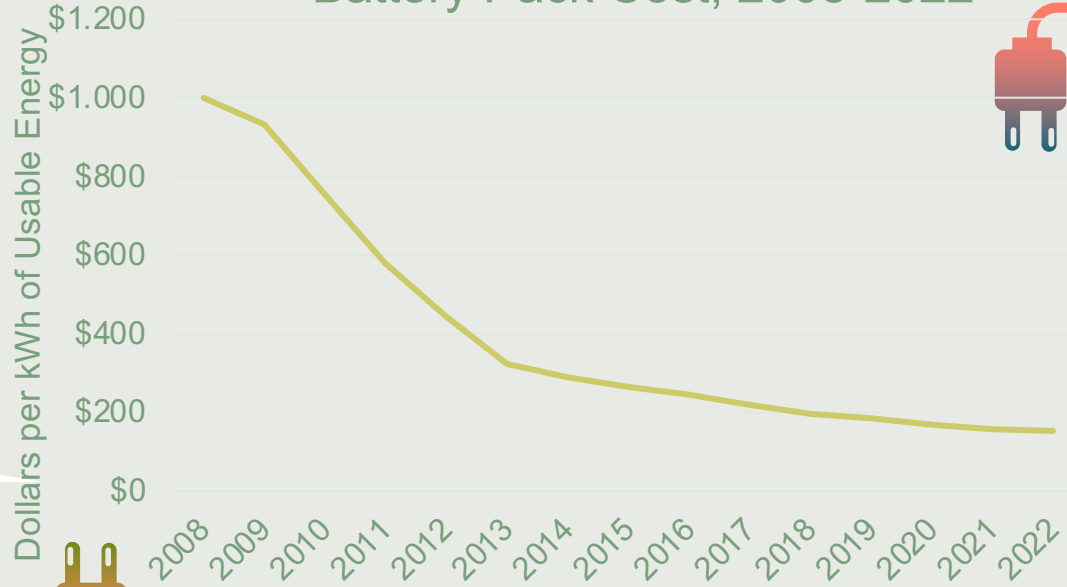


BATTERY

Estimated Electric Vehicle Lithium-Ion Battery Pack Cost, 2008-2022



- Lithium
- Nickel
- Manganese
- Cobalt
- Graphite

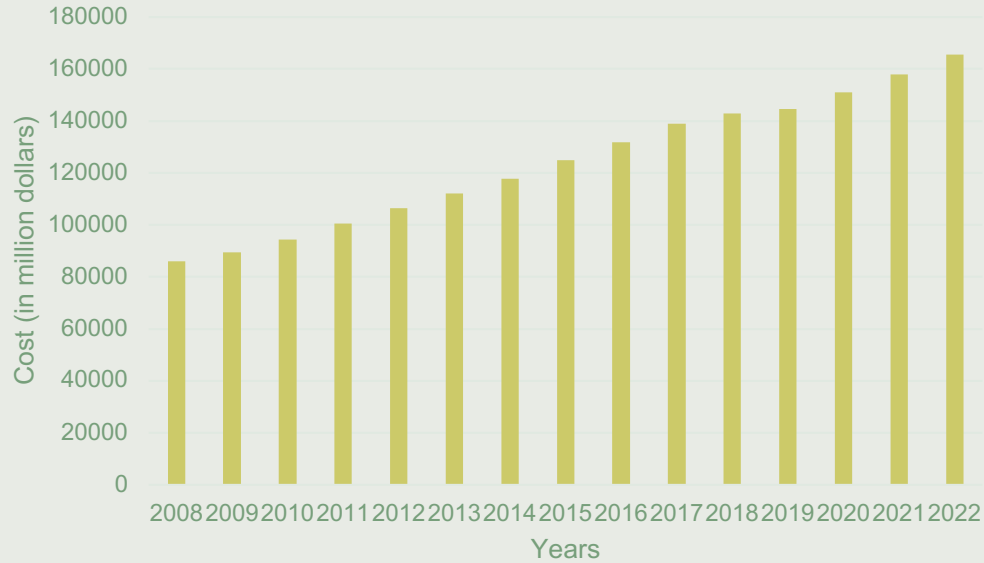


China



INFRASTRUCTURE

Cost of Charging Stations



- Charging station
- Btw. \$50,000 – \$250,000
- 16 EVs to 1 charging station



VEHICLE CARE SERVICES



**Old style
vehicles to
EV**



**Educational
support**



**25,000 repair
shops and
service centers
in Turkey**

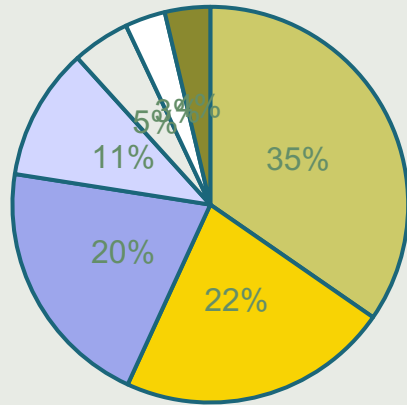


**Economical
support**



ENERGY SUPPLY SOURCES

Turkey's Electricity Production in 2022

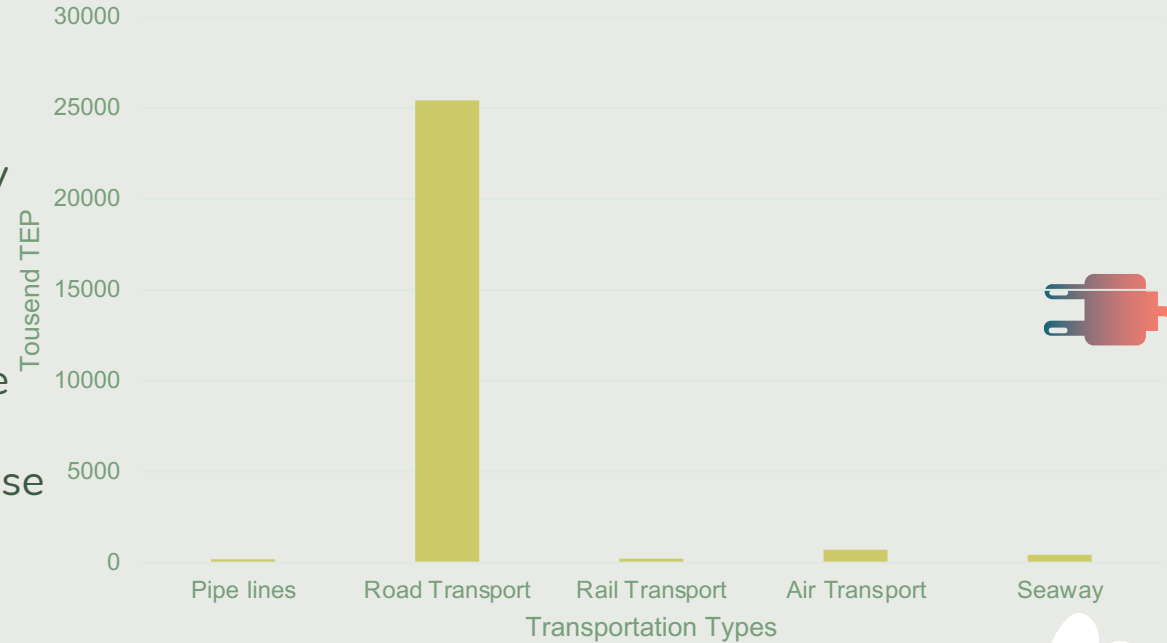


- Coal
- Natural Gas
- Hydroelectric Power Plants
- Wind Turbines
- Solar Panels
- Geothermal
- Others

- Reason for the electric vehicles is the fight against climate change and the reduction of environmental pollution
- Additional electricity demand
- Renewable energy sources

ENERGY SUPPLY SOURCES

Energy Consumption According To Transportation Types



- Extra 25000 TEP energy demand
- 290000 MWh of electricity



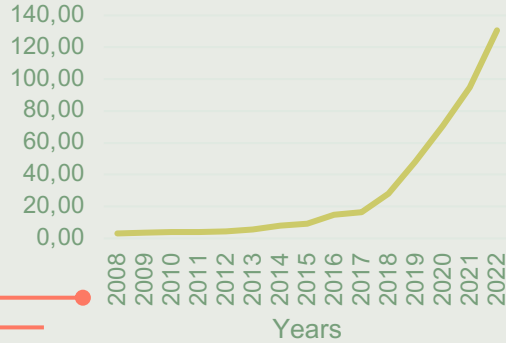
- 3 billion dollars to increase the installed wind power
- 5.5 billion dollars to increase the installed solar panel power



ECONOMIC CONDITIONS

Currency problems

USD/ARS



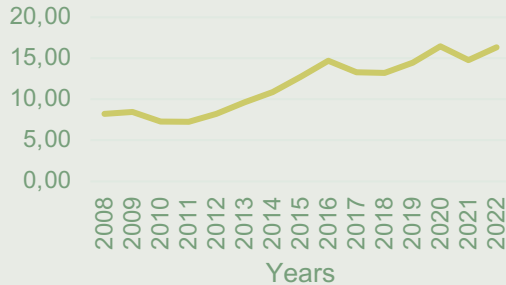
USD/BRL



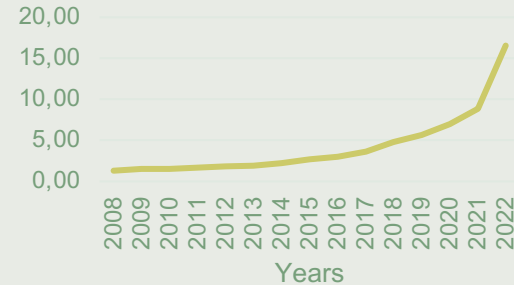
Economic stability

Inflation

USD/ZAR



USD/TRY



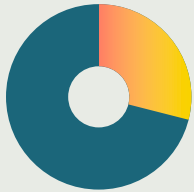


04



COST – BENEFIT ANALYSIS

COST – BENEFIT ANALYSIS



20%

Gross National Product



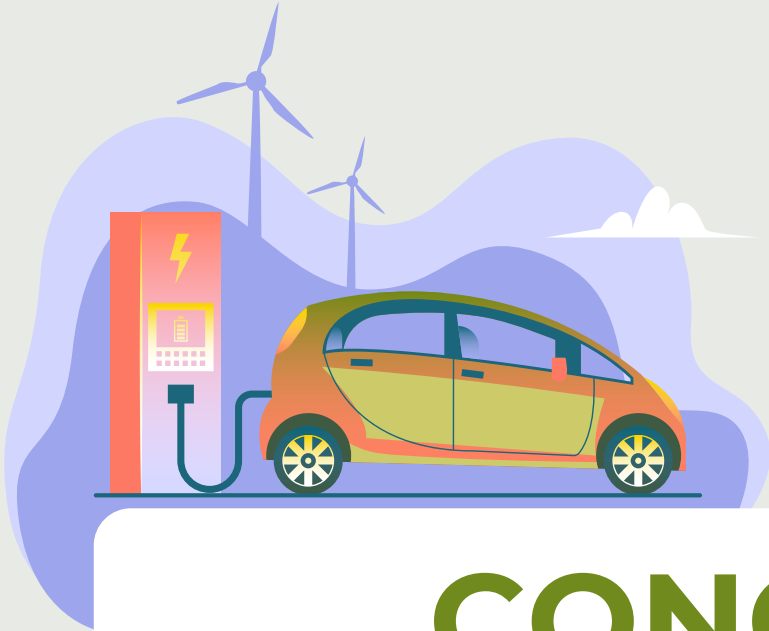
Environmental Pollution

An illustration of a landscape with several stylized trees of varying heights and colors (blue, purple, green) on a light blue ground. To the left, there is a brown electrical plug with a red cord extending upwards.



More stable investments?

An illustration of two sets of solar panels, one in the foreground and one slightly behind it, both in shades of blue and purple. To the right, there is a red electrical plug with a red cord extending downwards.



05



CONCLUSION

CONCLUSION

Calculating the cost

Environmental valuation

Appraise correctly

Not same for developed countries and non-developed countries

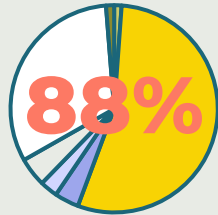
Focusing other options

Renewable energy sources



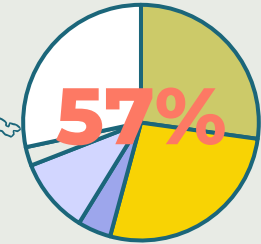
CONCLUSION

Total Energy Supply in Argentina



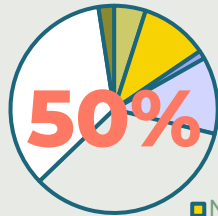
- Coal
- Natural gas
- Nuclear
- Hydro
- Biofuels and waste
- Oil
- Wind, solar, etc.

Total Energy Supply in Turkey



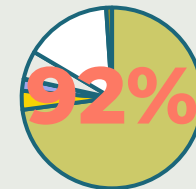
- Coal
- Natural gas
- Hydro
- Biofuels and waste
- Oil
- Wind, solar, etc.

Total Energy Supply in Brazil



- Coal
- Natural gas
- Nuclear
- Hydro
- Biofuels and waste
- Oil
- Wind, solar, etc.

Total Energy Supply in South Africa



- Coal
- Natural gas
- Nuclear
- Hydro
- Biofuels and waste
- Oil
- Wind, solar, etc.



THANKS!

Do you have any questions?

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