

Electric Cars and the Environment

Research Project

Grace Yoder

POL 327

February 25, 2026

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Research Proposal

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In the United States, there seems to be a significant focus on electric cars as a partial solution to the disaster of internal combustion engine cars. My research will focus on whether or not this is an effective partial solution to climate change.

The focus will be on North America, Europe, and China. It will look at carbon production, resource extraction, and infrastructure impact. It will additionally look at the impact of legislation and tax credits on the adoption and overall impact of electric vehicles. The ideal time target to look at would be in the past 20 years. Key stakeholders include, governments, manufacturers, advertisers, resource providers, and consumers.

My research strategy going into this will be to search the Purdue databases for any studies relating to this information. Additionally, analysis of the policies by select nations may be helpful to understanding the patterns and trends. I may also look at cultural differences between nations as well. This research will not look at or determine if and how electric vehicles are functionally different and will focus on the climate impacts.

Rubric

Student name: Grace Yoder

Tentative title/subject: Electric Cars

Checklist Criteria

- ✓ Clearly identified problem/issue with clear and coherent reasoning for why it is relevant and/or has important implications for climate change politics/policy
- ✓ Scope and/or ambition of the identified climate politics research problem/issue and/or central research question(s) for this project are well-defined, manageable, and feasible within the guidelines and limits of the class
- ✓ Research strategy proposed is clearly and coherently defined/outlined and is appropriate for the defined climate politics problem/issue and scope/ambition of the project
- ✓ Potential resources and sources, challenges, and/or limits to the proposed research project and strategy are clearly and coherently identified and/or analyzed
- ✓ RP is well-written, well-organized and easy to read/follow, while following guidelines with little to no typos and/or errors

Additional Comments/Questions/Reflection:

None other than I am excited to do this project!

Research Journal

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2 Hours

Created documents and research proposal

Started the project! See version history and PDF at https://github.com/gyoder/pol327_research_project

Feb 25, 2026

2 Hours

Started Research

Started looking for papers that discuss the emissions of EVs and ICE vehicles. So far I have only read one paper and wrote the annotated bibliography entry for it.

The paper in question, written by Pawel Albrechtowicz¹, is a case study that is focused on cars in Poland made in 2022. It verifies the emissions from both types of cars and compares them. This study is useful as it demonstrates how an EV is not necessarily more environmentally friendly than an ICE vehicle. The specific results are not the most helpful as they could be due to their narrow results focusing on Poland. Poland seems to have a very high proportion of coal power production and the cars are likely smaller but I will need to do more research to confirm that.

¹Albrechtowicz, "Electric Vehicle Impact on the Environment in Terms of the Electric Energy Source — Case Study".

Bibliography

Albrechtowicz, Paweł. "Electric Vehicle Impact on the Environment in Terms of the Electric Energy Source — Case Study." *Energy Reports* 9 (2023): 3813–21

Albrechtowicz conducted a case study on the Green House Gas (GHG) emissions of both Electric Vehicles (EV) and Internal Combustion Engine Vehicles (ICE). It focused on Poland in 2022 for its scope and limited the analysis to cars of that year. Poland's energy is 80% produced by coal. This study showed that at high usage of GHG emitting energy sources can make EVs less efficient than ICE vehicles. It also argues that EVs still have less measurable benefits like lower pollution in cities since the emissions happen elsewhere. It also advocates for the improvement of infrastructure and residential solar panels in order to make the transmissions more efficient.