

## JOHANNES BENEDIKT GESSNER

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### Contact Information

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### Undergraduate Studies

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Master of Science, Economics, University of Mannheim	2021
Bachelor of Science, Economics, University of Mannheim	2019

### Graduate Studies

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<b>University of Mannheim</b>	2019 to present
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Ph.D. Candidate in Economics

Thesis Title: Essays in Environmental Economics

Expected Completion Date: July 2025

#### References

Professor Ulrich J. Wagner, PhD

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### Research and Teaching Fields

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**Microeconomics, Empirical Environmental Economics, Innovation Economics**

### Relevant Professional Experience

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#### Teaching Experience

E600 Mathematics (Propädeutikum Master), Uni Mannheim, Instructor	Fall 2024
E600 Mathematics (Propädeutikum Master), Uni Mannheim, Instructor	Fall 2023
E603 Advanced Econometrics (Master), Uni Mannheim, teaching assistant for Prof. Frölich	Fall 2022
Principles in Economics (Bachelor), Uni Mannheim, teaching assistant for Dr. Habermalz	Fall 2021
Linear Algebra 1 (Bachelor), Uni Mannheim, teaching assistant for Prof. Boecherer	Fall 2017

#### Research Experience

RWI - Leibniz-Institute for Economic Research e.V., RA	07/22 - 08/23
Institute of Energy Economics gGmbH, University of Cologne , Research Intern	07/20 - 08/20
ZEW - Leibniz-Centre for European Economic Research GmbH, RA	Spring 2019, Spring 2020

### Scholarships

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Research Grant for Doctoral Students, German Academic Exchange Service (DAAD)	09/23 - 11/23
Scholarship, Graduate School of Economic and Social Sciences, Uni Mannheim	09/20 - 08/21

## Publications

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**Can Social Comparisons and Moral Appeals Encourage Low-Emission Transport Use?** (with Ulrich Wagner and Wolfgang Habla) *Transportation Research Part D: Transport and Environment*, Volume 133, 2024

## Research Papers

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### **Regulatory Stringency, Supply Chains and Innovation in the Car Industry**

(Job Market Paper)

*Abstract:* Decarbonizing industries to mitigate climate change requires technological change. Can environmental regulation stimulate innovation for “clean” technologies beyond the regulated industry? In this paper, I study how the European CO<sub>2</sub> emission performance standard for passenger cars affects innovation by upstream automotive suppliers. To identify causal effects of the regulation, I leverage the heterogeneous exposure of automotive suppliers to changes in the composition of the European car market in the aftermath of the 2015 Volkswagen diesel scandal. The empirical approach is enabled by a novel data set that combines administrative data on manufacturer compliance with the standard, data on supply chain links between car manufacturers and their Tier 1 suppliers, and patent data for both manufacturers and suppliers. I find that exposure to an increase in manufacturer-level emissions by one percentage point relative to the standard’s target level increases the number of patent applications for zero- or low-emission technologies by 11 % in the following year. This is driven by suppliers with pre-existing knowledge stocks for these technologies. In addition to the innovation response of existing suppliers, the increase in regulatory stringency at the manufacturer level also increases the likelihood of forming new supply chain links with suppliers having expertise in technologies to reduce CO<sub>2</sub> emissions of fossil fuel-based cars.

### **No Place Like Home: Charging Infrastructure and the Environmental Advantage of Plug-in Hybrid Electric Vehicles** (with Benjamin Rübenacker, Wolfgang Habla and Ulrich Wagner)

*Abstract:* The environmental impact of many energy-saving technologies depends on user behavior. For Plug-in Hybrid Electric Vehicles, consumer choices regarding how much to drive and which source of energy to use impact CO<sub>2</sub> emissions. This paper leverages quasi-experimental variation in the availability of home charging stations to quantify the impact of this technology on energy use and CO<sub>2</sub> emissions of 836 PHEV company cars. Fuel and charging expenditures for these cars are covered by the employer so that, to the employee, home charging changes only the non-monetary costs of charging the car. We find that access to home charging increases electricity consumption by 298.88 ( $\pm 25.9$ ) kWh per quarter and decreases fuel consumption by 102.34 ( $\pm 38.0$ ) liters, reducing CO<sub>2</sub> emissions by 39 %. Moreover, access to home charging increases the employee’s propensity to choose a Battery Electric Vehicle (BEV) upon renewal of the lease. We use these estimates to compute levelized abatement costs and payback times of home charging for a range of scenarios characterizing the diffusion of BEVs. With current tax-inclusive energy prices, home charging stations break even within six to eight years.

## Presentations

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| 2024 | 27th EAERE Annual Conference, AERE 2024 Summer Conference, 12th Mannheim Conference on Energy and the Environment, AURÖ Young Researchers Workshop, 13th CRC TR 224 Workshop for Young Researchers, University of Mannheim |
| 2023 | University of Pennsylvania, Yale School of the Environment, University of Mannheim   |
| 2022 | 27th EAERE Annual Conference, 10th Mannheim Conference on Energy and the Environment, University of Mannheim, University of Heidelberg   |

Citizenship: German

Last updated: October 11, 2024