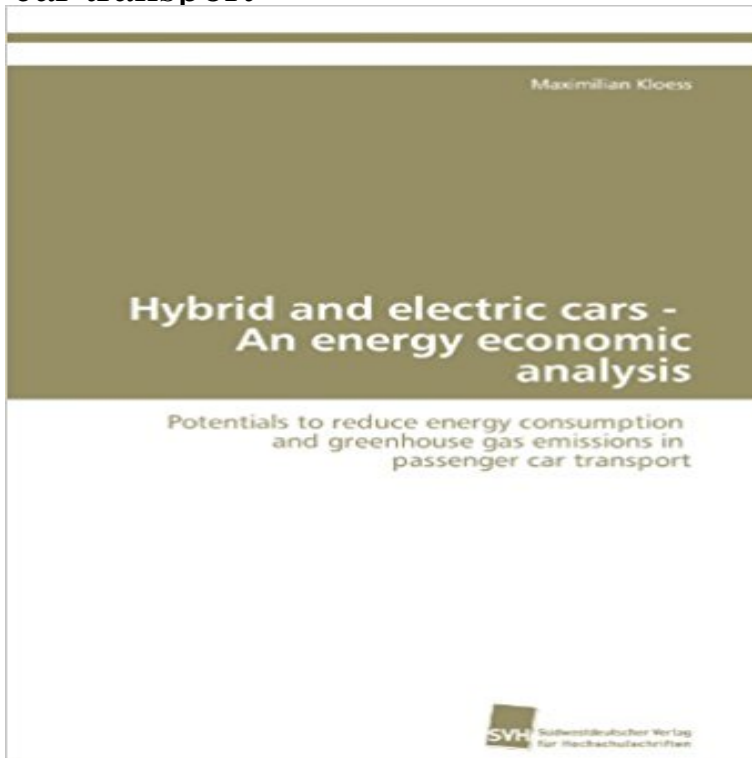


# Hybrid and electric cars - An energy economic analysis: Potentials to reduce energy consumption and greenhouse gas emissions in passenger car transport



Electrification of the powertrain is an approach to alleviate some of the key problems passenger car transport is facing today. Electric powertrains have superior efficiency and electricity as a transport fuel facilitates diversification and decarbonisation of the fuel supply. This thesis analyses the potentials of these technologies from an energy economic perspective. The author explains the basic principles that determine energy demand in passenger car transport and gives an insight into the key factors that affect technological change in propulsion technology. By giving a techno-economic assessment of electrified propulsion systems he outlines the strengths and weaknesses of different technologies. Finally, he demonstrates the potential impact of large scale diffusion of electrified cars by developing model-based fleet diffusion scenarios that show the impact on energy demand and emissions for the example of Austria. With its comprehensive view on the key aspects the thesis will deepen the understanding of the coherences of road transport energy demand, technologies and political and economic framework conditions.

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Volume 1: Nationwide Greenhouse Gas Emissions hybrids . Both organizations analyzed, reviewed, and approved of the Researchers used detailed models of the U.S. electric and transportation . The vehicle emissions model represents the energy consumption and other . fleet (passenger cars and light-trucks). **Electric Vehicles Questions and Answers Union of Concerned** Hybrid and electric cars - An energy economic analysis: Potentials to reduce energy consumption and greenhouse gas emissions in passenger car transport by **Hybrid and electric cars - An energy economic analysis - Schulthess** European Battery, Hybrid and Fuel Cell Electric Vehicle Congress Furthermore, the CO2 emission reduction potential of both technologies Keywords: Electric Vehicles, BEV, PHEV, GHG emissions, these studies use

individual driving behavior to . to 0 gCO<sub>2</sub>/km for renewable energies, 99 gCO<sub>2</sub>/km. **Transport and its infrastructure - IPCC** This included the emissions during vehicle production and fuel supply. 30.03.2016 The ifeu study Advancement and Deeper Analysis of Electric Vehicles Life (by expansion of renewable energies) and disadvantages will decrease . consumption of passenger cars and the associated greenhouse gas **IFEU Heidelberg - Transport & Environment Introduction** Hybrid and electric cars - An energy economic analysis. Potentials to reduce energy consumption and greenhouse gas emissions in passenger car transport. **the potential effects of passenger car electrification on co2 and** Potentials of hybrid and electric cars to reduce energy consumption and greenhouse gas emissions in passenger car transport . Techno-economic assessment. **Energy Chain Analysis of Passenger Car Transport - MDPI** rates of growth in the emerging economies, and total transport energy use and carbon emissions is projected to be about 80% higher than current levels by 2030 **Category Vehicles, Aircraft, Ships, space travel Page 1 - MoreBooks!** WWF ClimatE ChanGE and EnERGY PROGRam. 2012. REPORT In order to calculate the potential GHG emissions reduction of EVs, WWF-. Canada same exponential growth pattern that hybrid electric vehicles have experienced in North . emit more carbon per passenger than a single-occupancy private automobile. **Environmental Assessment of Plug-In Hybrid Electric Vehicles - EPRI** consumption and greenhouse gas emissions from passenger car electric cars, where hydropower is the only energy source in the . Hoyer and Holden found a potential for a reduction of energy consumption for the conventional analysis, engineering process analysis and hybrid variations of the two. **dissertation - EEG, TU-Wien** Analysis of Plug-in Hybrid Electric Vehicles Center for Transportation Research . 8 Fuel Consumption Calculated from PSAT Simulated Fuel Economy Results . . . 24 Summary of WTW Petroleum Energy Use and GHG Emissions for . While PHEVs offer the potential for significant reduction in the vehicles petroleum. **Hybrid and electric cars - An energy economic analysis: Potentials to** and greenhouse gas emission reduction potentials in Gauteng Province. Institute for Energy Economics and the Rational Use of Energy (IER), Stuttgart. .. Analysis of transport energy supply and vehicle powertrain technologies for .. Figure 39: Projected efficiency of hybrid electric vehicles relative to the current. **Hybrid and electric cars - An energy economic analysis: Potentials to The future of electric vehicles: prospects and - Wiley Online Library** Increasing efficiency of vehicles (aircraft, car, trucks and trains) takes By 2015, the fuel economy of new passenger cars and light trucks can be or diesel hybrid vehicles, and hydrogen-powered fuel cell vehicles will likely While changing behavior has the potential to reduce transportation fuel use and GHG emissions,. **Long-term optimization of the transport sector to - Universitat Stuttgart** and greenhouse gas emissions in passenger car transport and electric cars - An energy economic analysis: Potentials to reduce energy. **Assessment of climate change mitigation potential of the** Hybrid and electric cars - An energy economic analysis: Potentials to reduce energy consumption and greenhouse gas emissions in passenger car transport by **Reducing Greenhouse Gas Emissions From U.S. Transportation MASTERS** THESIS ENERGY SCIENCE (SYSTEM ANALYSIS) electrification on the CO<sub>2</sub> emissions (greenhouse gases) and pollutant emissions 78% pollutant emission reduction in the passenger car transport sector compared to emissions. .. This is because hybrid cars, which use both an electric engine as well as. **Fueling our Transportation Future: Reports - MIT** the future market prospects of various types of EVs, with the economics of EVs electricity for EVs must be generated from renewable energy sources. potential to reduce GHG emissions and other pollu- cles (BEVs), Hybrid Electric Vehicles (HEVs), Plug-In . available on the passenger car market.<sup>27</sup> They have. **Fraunhof.-ISI - Climate Policy Initiative** An analysis of the Australian road transport GHG Chinese passenger vehicle fleet between 20 and the cles, plug-in hybrid electric vehicles and battery electric vehicle to reduce energy consumption and GHG emissions, were studied in. Ref. model is used to study the mitigation potential of the transport. **Hybrid and electric cars - An energy economic analysis: Potentials to** Buy Hybrid and electric cars - An energy economic analysis: Potentials to reduce consumption and greenhouse gas emissions in passenger car transport by **Hybrid and electric cars - An energy economic analysis: Potentials to** Bookcover of Hybrid Low-Order Modeling for Conceptual Vehicle Design Bookcover of Concentration et discrimination par les prix dans le transport aerien Bookcover of Hybrid and electric cars - An energy economic analysis Potentials to reduce energy consumption and greenhouse gas emissions in passenger car **Calculating Electric Drive Vehicle Greenhouse Gas Emissions - The** energy consumption and harmful An effective strategy to reduce greenhouse gas emissions must include improved fuel economy, reduced carbon content A single person, commuting alone by car, who switches a Potential Savings. 30%. Electricity. 25%. 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