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Decarbonising Urban Mobility with Land Use and Transport Policies The Case of Auckland, New Zealand - OECD 2020-06-16
The report presents an in-depth analysis of various policies that aim to reduce the greenhouse gas emissions of urban transport. Decarbonising transport lies at the core of efforts to mitigate climate change and has close links to urban sustainability and housing affordability. The report identifies the drivers of rising emissions in the urban transport sector and offers pathways to reduce them through a combination of transport and land use policies.
Handbook on Battery Energy Storage System - Asian Development Bank 2018-12-01
This handbook serves as a guide to deploying battery energy storage technologies, specifically for distributed energy resources and flexibility resources. Battery energy storage technology is the most promising, rapidly developed technology as it provides higher efficiency and ease of control. With energy transition through decarbonization and decentralization, energy storage plays a significant role to enhance grid efficiency by alleviating volatility from demand and supply. Energy storage also contributes to the grid integration of renewable energy and promotion of microgrid.
Practice and Innovations in Sustainable Transport - Tariq Muneer 2020-05-28
The book continues with an experimental analysis conducted to obtain accurate and complete information about electric vehicles in different traffic situations and road conditions. For the experimental analysis in this study, three different electric vehicles from the Edinburgh College leasing program were equipped and tracked to obtain over 50 GPS and energy consumption data for short distance journeys in the Edinburgh area and long-range tests between Edinburgh and Bristol. In the following section, an adaptive and robust square root cubature Kalman filter based on variational Bayesian approximation and Huber's M-estimation is proposed to accurately estimate state of charge (SOC), which is vital for safe operation and efficient management of lithium-ion batteries. A coupled-inductor DC-DC converter with a high voltage gain is proposed in the following section to match the voltage of a fuel cell stack to a DC link bus. Finally, the book presents a review of the different approaches that have been proposed by various authors to mitigate the impact of electric buses and electric taxis on the future smart grid.
The Car Hacker's Handbook - Craig Smith 2016-03-01
Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven't kept pace with today's more hostile security environment, leaving millions vulnerable to attack. The Car Hacker's Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle's communication network, you'll learn how to intercept data and perform specific hacks to track vehicles, unlock

doors, glitch engines, flood communication, and more. With a focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-utils, and ChipWhisperer, The Car Hacker's Handbook will show you how to: –Build an accurate threat model for your vehicle –Reverse engineer the CAN bus to fake engine signals –Exploit vulnerabilities in diagnostic and data-logging systems –Hack the ECU and other firmware and embedded systems –Feed exploits through infotainment and vehicle-to-vehicle communication systems –Override factory settings with performance-tuning techniques –Build physical and virtual test benches to try out exploits safely If you're curious about automotive security and have the urge to hack a two-ton computer, make The Car Hacker's Handbook your first stop.

Car Hacks and Mods For Dummies - David Vespremi 2011-05-09

So you want to turn your Yugo into a Viper? Sorry--you need a certified magician. But if you want to turn your sedate sedan into a mean machine or your used car lot deal into a powerful, purring set of wheels, you've come to the right place. Car Hacks & Mods for Dummies will get you turbo-charged up about modifying your car and guide you smoothly through: Choosing a car to mod Considering warranties, legal, and safety issues Hacking the ECU (Engine Control Unit) to adjust performance-enhancing factors like fuel injection, firing the spark plugs, controlling the cooling fan, and more Replacing your ECU with a plug and play system such as the APEXi Power FC or the AEM EMS system Putting on the brakes (the faster you go, the faster you'll need to stop) Setting up your car for better handling and cornering Written by David Vespremi, automotive expert, frequent guest on national car-related TV shows, track driving instructor and self-proclaimed modder, Car Hacks & Mods for Dummies gets you into the ECU and under the hood and gives you the keys to: Choosing new wheels, including everything from the basics to dubs and spinners Putting your car on a diet, because lighter means faster Basic power bolt-ons and more expensive power adders Installing roll bars and cages to enhance safety Adding aero add-ons, including front "chin" spoilers, real spoilers, side skirts, and canards Detailing, down to the best cleaners and waxes and cleaning under the hood Using OBD (on-board diagnostics) for troubleshooting Getting advice from general Internet sites and specific message boards and forums for your car's make or model, whether it's a Chevy pick-up or an Alfa Romeo roadster Whether you want to compete at drag strips or on road courses or simply accelerate faster on an interstate ramp, if you want to improve your car's performance, Car Hacks & Mods for Dummies is just the boost you need.

Advanced Microsystems for Automotive Applications 2012 - Gereon Meyer 2012-05-03

The ambitious objectives of future road mobility, i.e. fuel efficiency, reduced emissions, and zero accidents, imply a paradigm shift in the concept of the car regarding its architecture, materials, and propulsion technology, and require an intelligent integration into the systems of transportation and power. ICT, components and smart systems have been essential for a multitude of recent innovations, and are expected to be key enabling technologies for the changes ahead, both inside the vehicle and at its interfaces for the exchange of data and power with the outside world. It has been the objective of the International Forum on Advanced Microsystems for Automotive Applications (AMAA) for almost two decades to detect novel trends and to discuss technological implications and innovation potential from day one on. In 2012, the topic of the AMAA conference is "Smart Systems for Safe, Sustainable and Networked Vehicles". The conference papers selected for this book address current research, developments and innovations in the field of ICT, components and systems and other key enabling technologies leading to the automobile and road transport of the future. The book focuses on application fields such as electrification, power train and vehicle efficiency, safety and driver assistance, networked vehicles, as well as components and systems. Additional information is available at www.amaa.de

The Handbook of Lithium-Ion Battery Pack Design - John T Warner 2015-05-23

The Handbook of Lithium-Ion Battery Pack Design: Chemistry, Components, Types and Terminology offers to the reader a clear and concise explanation of how Li-ion batteries are designed from the perspective of a manager,

sales person, product manager or entry level engineer who is not already an expert in Li-ion battery design. It will offer a layman's explanation of the history of vehicle electrification, what the various terminology means, and how to do some simple calculations that can be used in determining basic battery sizing, capacity, voltage and energy. By the end of this book the reader has a solid understanding of all of the terminology around Li-ion batteries and is able to do some simple battery calculations. The book is immensely useful to beginning and experienced engineer alike who are moving into the battery field. Li-ion batteries are one of the most unique systems in automobiles today in that they combine multiple engineering disciplines, yet most engineering programs focus on only a single engineering field. This book provides you with a reference to the history, terminology and design criteria needed to understand the Li-ion battery and to successfully lay out a new battery concept. Whether you are an electrical engineer, a mechanical engineer or a chemist this book helps you better appreciate the inter-relationships between the various battery engineering fields that are required to understand the battery as an Energy Storage System. Offers an easy explanation of battery terminology and enables better understanding of batteries, their components and the market place. Demonstrates simple battery scaling calculations in an easy to understand description of the formulas Describes clearly the various components of a Li-ion battery and their importance Explains the differences between various Li-ion cell types and chemistries and enables the determination which chemistry and cell type is appropriate for which application Outlines the differences between battery types, e.g., power vs energy battery Presents graphically different vehicle configurations: BEV, PHEV, HEV Includes brief history of vehicle electrification and its future

Amnesty and Revolution: An Amateur's View of Life As It Stands - Ben Fitch 2016-03-15

Through engagement with human behaviour from the level of the private individual to the international community, in Amnesty and Revolution: An Amateur's View of Life As It Stands a holistic type of reform is advocated; solutions to scarcity and inequity are formulated with due regard to the cost of revoking commitments already in motion. The author's rationale is to provide a counterbalance wherever excess or paucity is perceived, and by applying a moderate degree of erudition and scientific understanding to the exercise of drawing inferences and forging creative associations, the book's themes are addressed intellectually and intuitively. In Amnesty and Revolution the author specifically addresses domestic economic and social policy, social work, mental health, health problems associated with modern technology, renewable and non-renewable energy, environmental policy, globalisation, international conflicts and internal security. The author consistently targets systems rather than specific actors, in order to appease those who despite their culpability possess skills and experience which may be useful in effecting peaceable reform. In several places within the text there are extensive descriptions which serve as expedient points of access to the text's central arguments. Since these descriptions serve as introductions to topics which are related to academic specialisms, although hitherto they may not have been recognised as such, this book would be of great value to academics. Indeed, industrial specialisation and the manner in which this can prevent the context of a specialism being understood by its practitioners is a theme which is explored within the text. While some explanations would be understood more easily with foreknowledge of certain scientific principles, the central arguments of the text are accessible without scientific explanations needing to be fully understood. Accordingly the book is suitable for a general audience, and especially anyone with an interest in progressive politics, addressing as it does a range of contentious issues.

Building the Digital Enterprise - Mark Skilton 2016-04-29

The digital economy is at a tipping point. This practical book defines digital ecosystems, discusses digital design using converging technologies of social networking, mobility, big data and cloud computing, and provides a methods for linking digital technologies together to meet the challenges of building a digital enterprise in the new economy.

Switching Gears - Dan K. Eberhart 2020-10-13
The world is on the precipice of energy innovation. As we strive toward cleaner fuels, some technologies will rise and others will fall. Will the Tesla Roadster and the Nissan Leaf go the way of the 1890s' Morrison Electric? The new rock stars of the transportation industry are radical entrepreneurs with visions that may change the landscape of energy as drastically as computers changed the landscape of communication. Electric vehicles (EVs) are steadily gaining acceptance. Countries like Norway, France, India, and China have stated that they will abandon sales and manufacturing of conventional vehicles by 2025–2030 in favor of EVs. Eberhart's expert book provides everything we need to know to engage in the debate over EVs versus internal combustion vehicles. He skillfully sorts fact from fiction, puts valuable research at our finger tips, and offers us a glimpse of what the world might look like in 2050 with a potential worldwide population of 9.6 billion people and over 530 million EVs on our roads. The future has never seemed more like science fiction. We've seen hydrogen fuel-cell-powered trains ("hydrail"), autonomous drones, the first prototypes and working models of electric jets, and vertical takeoff and landing (VTOL) vehicles. Uber promised to lift intercity EVs to the sky with its Elevate program, and smaller startups have demonstrated ingenious contraptions for human-powered flight. Eberhart envisions a successful energy revolution where we learn from our mistakes and solve our puzzles, as we work toward a future that allows us to be conscientious, powerful, and energy-savvy all at the same time. Are EVs really the holy grail of energy solutions—power without fossil fuel? Are EVs here to stay?

Autonomous Vehicle Technology - James M. Anderson 2014-01-10
The automotive industry appears close to substantial change engendered by "self-driving" technologies. This technology offers the possibility of significant benefits to social welfare—saving lives; reducing crashes, congestion, fuel consumption, and pollution; increasing mobility for the disabled; and ultimately improving land use. This report is intended as a guide for state and federal policymakers on the many issues that this technology raises.

Electric Cars - Brad Durant 2014-05-31
Discover The Important Information About Electric Cars!Read on your PC, Mac, smart phone, tablet or Kindle device!You're about to discover the crucial information about electric cars. Millions of people have already made the switch from traditional engine cars to electric cars and many are switching daily. It can be overwhelming if you are looking into making the switch because of all the various options out there. You also need to understand the risks and benefits of taking the electric route because many people make the switch without even considering some of the important factors.This book goes into the origin of electric cars, the different types of electric cars, as well as the positive and negative aspects. By investing in this book, you can get a grasp of which electric cars to look into and which ones to stay away from. Advertising in this industry can trick you if you are not aware of what is really necessary for an electric car to function properly.Here Is A Preview Of What You'll Learn... Understanding Electric Cars The Different Types of Electric Cars The Negative And Positive Aspects of Electric Cars Other Critical Information Take action right away to invest in your own future by downloading this book, "Electric Cars: The Ultimate Guide for Understanding the Electric Car And What You Need to Know", for a limited time discount!

Elektromagnetische Bewertung von permanenterregten Synchronmaschinen auf Basis einer integrierten Werkzeugkette - Lukas Dedeleit 2021-01-01
Mit der zunehmenden Elektrifizierung von Antriebssträngen aktueller Fahrzeuggenerationen entsteht Forschungs- und Entwicklungsbedarf zur weiteren Optimierung der Antriebe. Zu den meist verbauten Antrieben zählen dabei die permanenterregten Synchronmaschinen, deren Optimierung Forschungsschwerpunkt zahlreicher aktueller Arbeiten ist. Die innerhalb der Maschinenentwicklung notwendigen umfassenden Bewertungsprozesse werden aber oft nur nachrangig betrachtet. Schwerpunkt dieser Arbeit ist die elektromagnetische Bewertung von permanenterregten Synchronmaschinen, integriert in den

Maschinenentwicklungsprozess. Ziel ist es, bereits im frühen Entwicklungsstadium eine umfassende, recheneffiziente und genaue Maschinenbewertung vornehmen zu können. Schnittstellen zu aufbauenden thermischen und strukturdynamischen Bewertungsprozessen sind implementiert, sodass sich im Bewertungsprozess eine konsistente Datenbasis ergibt. Ergebnisse bleiben rückverfolgbar. Der in dieser Arbeit beschriebene Bewertungsprozess beinhaltet die Bestandteile der Simulation auf Basis der Finite-Elemente-Methode, Auswertungs- und Automatisierungsprozesse und den Abgleich der Bewertungsergebnisse mit Prüfstandsmessungen, sodass sich der elektromagnetische Bewertungsprozess final als automatisierter, standardisierter und validierter Prozess ergibt. Mit dem Ziel einer recheneffizienten und robusten Bewertung basieren die FE-Berechnungen auf stationären 2D-Simulationen unter Berücksichtigung des segmentweise geschrägten Rotors. Zentrale Ergebnisse der Simulation sind die sich einstellenden Flussverkettungen. Die Steuerung der Simulationspunkte und die Modellierung der Flussverkettungskennfelder im gesamten Betriebsbereich stellen einen Schwerpunkt der Prozessautomatisierung dar. Methoden zur Bewertung des Betriebsverhaltens, im Maschinenleerlauf, unter Maximallast, im Fahrzyklus und im Fehlerfall aktiver Kurzschluss werden hergeleitet. Die Integration von Messwerten in den Bewertungsprozess ermöglicht die Prozessvalidierung. Darüber hinaus werden die Messwerte genutzt, um unbekannte Simulationsparameter zu identifizieren und zu korrigieren.

Application of Smart Grid Technologies - Lisa Lamont 2018-05-29

Application of Smart Grid Technologies: Case Studies in Saving Electricity in Different Parts of the World provides a wide international view of smart grid technologies and their implementation in all regions of the globe. A brief overview of smart grid concepts and state-of-the art technologies is followed by sections that highlight smart grid experiences in Asia, Africa, North America, South America, Europe and Australasia. Chapters address select countries or sub-regions, presenting their local technological needs and specificities, status of smart grid implementation, technologies of choice, impacts on their electricity markets, and future trends. Similar chapter makes it easier to compare these experiences. In a time when the smart grid is becoming a worldwide reality, this book is ideal for professionals in power transmission and distribution companies, as well as students and researchers in the same field. It is also useful for those involved in energy management and policymaking. Presents the status and challenges of smart grid technologies and their implementation around the globe Includes global case studies written by local experts and organized for easy comparison Provides a brief overview of smart grid concepts and currently available technologies

Energy Use for Bicycling - Eric Hirst 1974

Corporate Mobility Breakthrough 2020 - Lukas Neckermann 2017-02-17

The world of mobility is undergoing a vast transformation. This book highlights the changes inherent in the mobility revolution, and how corporate and commercial users are playing a key role in supporting a breakthrough by 2020.

The Routledge Handbook of Urbanization and Global Environmental Change - Karen C. Seto 2015-12-22

This volume provides a comprehensive overview of the interactions and feedbacks between urbanization and global environmental change. A key focus is the examination of how urbanization influences global environmental change, and how global environmental change in turn influences urbanization processes. It has four thematic foci: Theme 1 addresses the pathways through which urbanization drives global environmental change. Theme 2 addresses the pathways through which global environmental change affects the urban system. Theme 3 addresses the interactions and responses within the urban system in response to global environmental change. Theme 4 centers on critical emerging research.

The Bhutan Electric Vehicle Initiative - Da Zhu 2016-04-06

As the country that inspires the world with ‘gross national happiness’ development philosophy, Bhutan is striving to pursue its economic growth while committing to its core

values of inclusive and green development. Even with robust economic growth rates, Bhutan's dependence on imports and hydropower revenues drives the country to search for self-reliant option to fuel the economy while further decarbonizing the economy. Electric vehicle is being explored as one of the key policies to introduce green mobility, reduce fossil fuel imports and put the country firmly on a green growth path. Globally, electric vehicles market and technology are still in the nascent stage but are developing rapidly. The automotive industry has adopted electrification as a pillar of future drive train technology. EV uptake is expected to increase significantly with ongoing improvements in technology and resulting cost decreases in the global market. This report aims to help Bhutan think through various technical and policy issues of introducing electric vehicles in its own context. It analyses a variety of factors that will impact adoption of electric vehicles from technical, market and financial feasibility to consumer awareness and stakeholders' capacity. It also addresses several policy questions which are at the heart of public debate such as affordability of the government to undertake the program, economic costs and benefits, distributional impact, fiscal, and macroeconomic implications. Drawing from vast international experiences, the report examines in great technical details how global cutting-edge technology like electric vehicles could be pursued in the context of developing economies with different socio-economic characteristics and constraints compared to advanced economies. It will help readers better grasp the technical, financial, economic and social challenges as well as opportunities in initiating electric vehicles program and provide practical recommendations that will be useful for policy makers in designing their own EV initiative.

Transportation Energy Data Book - 1984

Electric Vehicle Technology Explained - James Larminie 2012-09-17

Fully updated throughout, Electric Vehicle Technology, Second Edition, is a complete guide to the principles, design and applications of electric vehicle technology. Including all the latest advances, it presents clear and comprehensive coverage of the major aspects of electric vehicle development and offers an engineering-based evaluation of electric motor scooters, cars, buses and trains. This new edition includes: important new chapters on types of electric vehicles, including pickup and linear motors, overall efficiencies and energy consumption, and power generation, particularly for zero carbon emissions expanded chapters updating the latest types of EV, types of batteries, battery technology and other rechargeable devices, fuel cells, hydrogen supply, controllers, EV modeling, ancillary system design, and EV and the environment brand new practical examples and case studies illustrating how electric vehicles can be used to substantially reduce carbon emissions and cut down reliance on fossil fuels futuristic concept models, electric and high-speed trains and developments in magnetic levitation and linear motors an examination of EV efficiencies, energy consumption and sustainable power generation. MATLAB® examples can be found on the companion website www.wiley.com/go/electricvehicle2e Explaining the underpinning science and technology, this book is essential for practicing electrical, automotive, power, control and instrumentation engineers working in EV research and development. It is also a valuable reference for academics and students in automotive, mechanical, power and electrical engineering.

Annual Energy Outlook 2012 - Energy Information Administration (U S) 2012-10-03

"The projections in the U.S. Energy Information Administration's (EIA's) Annual Energy Outlook 2012 (AEO2012) focus on the factors that shape the U.S. energy system over the long term. Under the assumption that current laws and regulations remain unchanged throughout the projections, the AEO2012 Reference case provides the basis for examination and discussion of energy production, consumption, technology, and market trends and the direction they may take in the future. It also serves as a starting point for analysis of potential changes in energy policies. But AEO2012 is not limited to the Reference case. It also includes 29 alternative cases (see Appendix E, Table E1), which explore important areas of uncertainty for markets, technologies, and policies in the U.S. energy economy. Many of the implications of the

alternative cases are discussed in the 'Issues in focus' section of this report. / Key results highlighted in AEO2012 include continued modest growth in demand for energy over the next 25 years and increased domestic crude oil and natural gas production, largely driven by rising production from tight oil and shale resources. As a result, U.S. reliance on imported oil is reduced; domestic production of natural gas exceeds consumption, allowing for net exports; a growing share of U.S. electric power generation is met with natural gas and renewables; and energy-related carbon dioxide emissions remain below their 2005 level from 2010 to 2035, even in the absence of new Federal policies designed to mitigate greenhouse gas (GHG) emissions."--Executive Summary (p. 2).

Managing Customer Experience and Relationships - Don Peppers 2016-10-25

Boost profits, margins, and customer loyalty with more effective CRM strategy Managing Customer Experience and Relationships, Third Edition positions the customer as central to long-term strategy, and provides essential guidance toward optimizing that relationship for the long haul. By gaining a deep understanding of this critical dynamic, you'll become better able to build and manage the customer base that drives revenue and generates higher margins. A practical framework for implementing the IDIC model merges theory, case studies, and strategic analysis to provide a ready blueprint for execution, and in-depth discussion of communication, metrics, analytics, and more allows you to optimize the relationship on both sides of the table. This new third edition includes updated examples, case studies, and references, alongside insightful contributions from global industry leaders to give you a well-rounded, broadly-applicable knowledge base and a more effective CRM strategy. Ancillary materials include a sample syllabus, PowerPoints, chapter questions, and a test bank, facilitating use in any classroom or training session. The increased reliance on customer relationship management has revealed a strong need for knowledgeable practitioners who can deploy effective initiatives. This book provides a robust foundation in CRM principles and practices, to help any business achieve higher customer satisfaction. Understand the fundamental principles of the customer relationship Implement the IDIC model to improve CRM ROI Identify essential metrics for CRM evaluation and optimization Increase customer loyalty to drive profits and boost margins Sustainable success comes from the customer. If your company is to meet performance and profitability goals, effective customer relationship management is the biggest weapon in your arsenal—but it must be used appropriately. Managing Customer Experience and Relationships, Third Edition provides the information, practical framework, and expert insight you need to implement winning CRM strategy.

Evolutionary Paths Towards the Mobility Patterns of the Future - Michael Hülsmann 2013-09-26

This edited volume presents new insights and challenges in the field of electric mobility in relation to new mobility and infrastructure concepts as well as to renewable energies. The book covers the socio-economic view on the topic as well as technical aspects and thus offers valuable knowledge for future business models. It primarily addresses practitioners and researchers in the field but may also be of use to graduate students.

Culture, Politics and Climate Change - Deserai A. Crow 2014-03-21

Focusing on cultural values and norms as they are translated into politics and policy outcomes, this book presents a unique contribution in combining research from varied disciplines and from both the developed and developing world. This collection draws from multiple perspectives to present an overview of the knowledge related to our current understanding of climate change politics and culture. It is divided into four sections – Culture and Values, Communication and Media, Politics and Policy, and Future Directions in Climate Politics Scholarship – each followed by a commentary from a key expert in the field. The book includes analysis of the challenges and opportunities for establishing successful communication on climate change among scientists, the media, policy-makers, and activists. With an emphasis on the interrelation between social, cultural, and political aspects of climate change communication, this volume

should be of interest to students and scholars of climate change, environment studies, environmental policy, communication, cultural studies, media studies, politics, sociology.

Annual Energy Outlook - 2009

Information Science and Applications (ICISA) 2016 - Kuinam J. Kim 2016-02-15

This book contains selected papers from the 7th International Conference on Information Science and Applications (ICISA 2016) and provides a snapshot of the latest issues encountered in technical convergence and convergences of security technology. It explores how information science is core to most current research, industrial and commercial activities and consists of contributions covering topics including Ubiquitous Computing, Networks and Information Systems, Multimedia and Visualization, Middleware and Operating Systems, Security and Privacy, Data Mining and Artificial Intelligence, Software Engineering, and Web Technology. The contributions describe the most recent developments in information technology and ideas, applications and problems related to technology convergence, illustrated through case studies, and reviews converging existing security techniques. Through this volume, readers will gain an understanding of the current state-of-the-art information strategies and technologies of convergence security. The intended readers are researchers in academia, industry and other research institutes focusing on information science and technology.

Electric Vehicles: Prospects and Challenges - Tariq Muneer 2017-07-11

Electric Vehicles: Prospects and Challenges looks at recent design methodologies and technological advancements in electric vehicles and the integration of electric vehicles in the smart grid environment, comprehensively covering the fundamentals, theory and design, recent developments and technical issues involved with electric vehicles. Considering the prospects, challenges and policy status of specific regions and vehicle deployment, the global case study references make this book useful for academics and researchers in all engineering and sustainable transport areas. Presents a systematic and integrated reference on the essentials of theory and design of electric vehicle technologies Provides a comprehensive look at the research and development involved in the use of electric vehicle technologies Includes global case studies from leading EV regions, including Nordic and European countries China and India

High Voltage - Jim Motavalli 2011-11-08

A behind-the-scenes look at the robustly competitive race to dominate the market for electric cars, the larger-than-life moguls behind them, and the changes that are transforming the auto industry In the 1980s, it was unimaginable that the home computer would become as common and easy to use as a toaster. Today, plug-in charging stations and smart grids seem like something still far off in the future. But by 2020, the auto industry will look very different from today's field of troubled auto giants. The combination of technological breakthroughs and charging networks driven by global warming and peak oil makes it clear that revolutionary change in the auto industry is happening right now. In High Voltage, Jim Motavalli captures this period of unprecedented change, documenting the evolution from internal combustion engines to electric power. Driven by the auto world's ambitious and sometimes outlandish personalities, the book chronicles the race to dominate the market, focusing on big players like Tesla and Fisker, as well as a tiny start-up and a battery supplier. Flashing forward to the changes we'll see in the coming years, High Voltage shows a not-so-distant future where we will live on a smart grid, our cars "fueling," that is, charging, while we shop or sleep. The ramifications of these changes will be on a grander scale than most of us ever imagined—altering foreign policy, reducing trade deficits, and perhaps even ending global warming.

Sustainable Transportation Options for the 21st Century and Beyond - C.E (Sandy) Thomas 2015-07-06

This book includes an in-depth analysis of the environmental and energy security impacts of replacing the internal combustion engine vehicle with various forms of electric vehicles and replacing gasoline and diesel fuel with alternative fuels including electricity, hydrogen and biofuels. In addition to a detailed “well-to-

wheels" analysis of local air pollution, greenhouse gas emissions and oil consumption for each alternative vehicle, the book estimates the market penetration potential of each fuel/vehicle combination to determine the most likely societal impact of each alternative vehicle pathway. To support the market penetration estimates, the book analyses the likely cost of each alternative vehicle in mass production and the cost of installing the necessary fuel infrastructure to support each option. The book provides sufficient detail to allow decision makers in governments and industry to choose among the alternative vehicle/fuel combinations that will lead to a truly sustainable transportation system.

Learning Rates of Electric Vehicles - Andreas Zerfaß 2017-07-25

Governments of many countries consider the electrification of individual passenger transport as a suitable strategy to decrease oil dependency and reduce transport-related carbon dioxide (CO2) and air pollutant emissions. However, battery-electric vehicles (BEVs) and plug-in hybrid-electric vehicles (PHEVs) have been more expensive than their conventional counterparts and suffer from relatively short electric driving ranges, which still hampers the market potential of these vehicles. Despite persisting shortfalls, mechanisms such as technological learning and economics of scale promise to improve the techno-economic performance of BEVs and PHEVs in the short- to mid-term. Here, the author seeks to obtain insight into the techno-economic prospects of BEVs and PHEVs by: (i) establishing experience curves and (ii) quantifying user costs and the costs of mitigating carbon dioxide and air pollutant emissions in a time-series analysis. The analysis captures the situation in Germany between 2010 and 2016.

Transition Towards 100% Renewable Energy - Ali Sayigh 2018-01-29

This book contains selected papers presented during technical and plenary sessions at the World Renewable Energy Congress, the world's premier conference on renewable energy and sustainable development. All papers were rigorously peer reviewed.The Congress, held at Murdoch University in Perth, Western Australia from February 5 -9, 2017, with the theme of "Transition Towards 100% Renewable Energy", featured keynote speakers and parallel technical sessions highlighting technical, policy, and investment progress towards achieving 100% renewable energy ranging in scale from households to cities to large regions, with a focus on the challenges and opportunities transforming the global energy systems. The book highlights contributions from thought leaders involved in the supply, distribution, consumption, and development of sustainable energy sources.

Nissan Versa Automotive Repair Manual - 2014

Assessing Opportunities for Alternative Fuel Distribution Programs - Bruno Miller 2013

"TRB's Airport Cooperative Research Program (ACRP) Report 83: Assessing Opportunities for Alternative Fuel Distribution Programs consists of a guidebook and toolkit designed to help airports introduce and market alternative fuels to their airport community that includes tenants and consumers off airport. Alternative fuels considered include alternative jet fuel, green diesel, biodiesel, ethanol, compressed natural gas (CNG), liquefied petroleum gas (LPG), and electricity. The guidebook includes a step-by-step process to evaluate opportunities and constraints for alternative fuel distribution programs."--Publisher's description.

Electric Vehicle Business Models - David Beeton 2014-12-27

This contributed volume collects insights from industry professionals, policy makers and researchers on new and profitable business models in the field of electric vehicles (EV) for the mass market. This book includes approaches that address the optimization of total cost of ownership. Moreover, it presents alternative models of ownership, financing and leasing. The editors present state-of-the-art insights from international experts, including real-world case studies. The volume has been edited in the framework of the International Energy Agency's Implementing Agreement for Cooperation on Hybrid and Electric Vehicles (IA-HEV). The target audience primarily comprises practitioners and decision makers but the book may also be beneficial for research experts and graduate students.

Data and Decision Sciences in Action - Ruhul

Sarker 2017-07-26
Offering a concise and multidisciplinary reference guide to the state of the art in Australian operations research, this book will be of great value to academics working in many disciplines associated with operations research, as well as industrial practitioners engaged in planning, scheduling and logistics. Over 60 papers, with topics ranging from academic research techniques and case studies to industrial and administrative best practices in operations research, address aspects such as: • optimization, combinatorial optimization, decision analysis, supply-chain management, queuing and routing, and project management; and • logistics, government, cyber security, health-care systems, mining and material processing, ergonomics and human factors, space applications, telecommunications and transportation, among many others. This book presents the Proceedings of the National Conference of the Australian Society for Operations Research, the premier professional organization for Australian academics and practitioners working in optimization and other disciplines related to operations research. The conference was held in Canberra in November 2016.

Environmental and Energy Policy and the Economy - Matthew J. Kotchen 2022-01-24
This volume presents six new papers on environmental and energy economics and policy in the United States. Rebecca Davis, J. Scott Holladay, and Charles Sims analyze recent trends in and forecasts of coal-fired power plant retirements with and without new climate policy. Severin Borenstein and James Bushnell examine the efficiency of pricing for electricity, natural gas, and gasoline. James Archsmith, Erich Muehlegger, and David Rapson provide a prospective analysis of future pathways for electric vehicle adoption. Kenneth Gillingham considers the consequences of such pathways for the design of fuel vehicle economy standards. Frank Wolak investigates the long-term resource adequacy in wholesale electricity markets with significant intermittent renewables. Finally, Barbara Annicchiarico, Stefano Carattini, Carolyn Fischer, and Garth Heutel review the state of research on the interactions between business cycles and environmental policy.

Collision Course - Hans Greimel 2021-06-22
In Japan it's called the "Ghosn Shock"—the stunning arrest of Carlos Ghosn, the jet-setting CEO who saved Nissan and made it part of a global automotive empire. Even more shocking was his daring escape from Japan, packed into a box and put on a private jet to Lebanon after months spent in a Japanese detention center, subsisting on rice gruel. This is the saga of what led to the Ghosn Shock and what was left in its wake. Ghosn spent two decades building a colossal partnership between Nissan and Renault that looked like a new model for a global business, but the alliance's shiny image fronted an unsteady, tense operation. Culture clashes, infighting among executives and engineers, dueling corporate traditions, and government maneuvering constantly threatened the venture. Journalists Hans Greimel and William Sposato have followed the story up close, with access to key players, including Ghosn himself. Veteran Tokyo-based reporters, they have witnessed the end of Japan's bubble economy and attempts at opening Japan Inc. to the world. They've seen the fraying of keiretsu, Japan's traditional skein of business relationships, and covered numerous corporate scandals, of which the Ghosn Shock and Ghosn's subsequent escape stand above all. Expertly reported, Collision Course explores the complex suspicions around what and who was really responsible for Ghosn's ouster and why one of the top executives in the world would risk everything to escape the country. It explains how economics, history, national interests, cultural politics, and hubris collided, crumpling the legacy of arguably the most important foreign businessman ever to set foot in Japan. This gripping, unforgettable narrative, full of fascinating characters, serves as part cautionary tale, part object lesson, and part forewarning of the increasing complexity of doing global business in a nationalistic world.

Overcoming Barriers to Deployment of Plug-in Electric Vehicles - National Research Council 2015-06-26
In the past few years, interest in plug-in electric vehicles (PEVs) has grown. Advances in battery and other technologies, new federal standards for carbon-dioxide emissions and fuel economy, state zero-emission-vehicle requirements, and the current administration's goal of putting

millions of alternative-fuel vehicles on the road have all highlighted PEVs as a transportation alternative. Consumers are also beginning to recognize the advantages of PEVs over conventional vehicles, such as lower operating costs, smoother operation, and better acceleration; the ability to fuel up at home; and zero tailpipe emissions when the vehicle operates solely on its battery. There are, however, barriers to PEV deployment, including the vehicle cost, the short all-electric driving range, the long battery charging time, uncertainties about battery life, the few choices of vehicle models, and the need for a charging infrastructure to support PEVs. What should industry do to improve the performance of PEVs and make them more attractive to consumers? At the request of Congress, Overcoming Barriers to Deployment of Plug-in Electric Vehicles identifies barriers to the introduction of electric vehicles and recommends ways to mitigate these barriers. This report examines the characteristics and capabilities of electric vehicle technologies, such as cost, performance, range, safety, and durability, and assesses how these factors might create barriers to widespread deployment. Overcoming Barriers to Deployment of Plug-in Electric Vehicles provides an overview of the current status of PEVs and makes recommendations to spur the industry and increase the attractiveness of this promising technology for consumers. Through consideration of consumer behaviors, tax incentives, business models, incentive programs, and infrastructure needs, this book studies the state of the industry and makes recommendations to further its development and acceptance.

Build Your Own Electric Vehicle, Third Edition - Seth Leitman 2013-02-08

BUILD, CONVERT, OR BUY A STATE-OF-THE-ART ELECTRIC VEHICLE Thoroughly revised and expanded, Build Your Own Electric Vehicle, Third Edition, is your go-to guide for converting an internal combustion engine vehicle to electric or building an EV from the ground up. You'll also find out about the wide variety of EVs available for purchase and how they're being built. This new edition details all the latest breakthroughs, including AC propulsion and regenerative braking systems, intelligent controllers, batteries, and charging technologies. Filled with updated photos, this cutting-edge resource fully describes each component--motor, battery, controller, charger, and chassis--and provides illustrated, step-by-step instructions on how to assemble all the parts. Exclusive web content features current supplier and dealer lists. Custom-built for environmentalists, engineers, students, hobbyists, and mechanics, this hands-on guide puts you in the fast lane toward a cost-effective, reliable green machine. Build Your Own Electric Vehicle, Third Edition, covers: Environmental impact and energy savings The best EV for you--purchase trade-offs, conversion trade-offs, and conversion costs Chassis and design Different types of electric motors and controllers Lithium EV batteries Chargers and electrical systems EV builds and conversions Licensing and insuring your EV Driving and maintenance List of manufacturers and dealers regularly updated on website

The Electric Car Guide: Nissan Leaf - Michael Boxwell 2015-04-20

Arguably one of the most important cars of this century so far, the Nissan LEAF is one of the most talked about cars in the world. It is the world's best selling electric car, a former World Car of the Year winner and one of the most environmentally friendly cars you can buy today. In this all-new guide, best selling technology author and LEAF owner, Michael Boxwell, explains what you need to know about owning and using a LEAF. He reveals why driving electric is not just good for the environment, but provides a terrific driving experience that is good for your wallet as well. Michael Boxwell has been involved in the electric vehicle industry since 2003 and has owned and driven electric cars since 2006. He is currently on his second Nissan LEAF.