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**KEY=ZERO - AYDIN WANG**

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## Alternative Fuels and Advanced Vehicle Technologies for Improved Environmental Performance

### Towards Zero Carbon Transportation

*Woodhead Publishing Alternative Fuels and Advanced Vehicle Technologies for Improved Environmental Performance: Towards Zero Carbon Transportation, Second Edition provides a comprehensive view of key developments in advanced fuels and vehicle technologies to improve the energy efficiency and environmental impact of the automotive sector. Sections consider the role of alternative fuels such as electricity, alcohol and hydrogen fuel cells, as well as advanced additives and oils in environmentally sustainable transport. Other topics explored include methods of revising engine and vehicle design to improve environmental performance and fuel economy and developments in electric and hybrid vehicle technologies. This reference will provide professionals, engineers and researchers of alternative fuels with an understanding of the latest clean technologies which will help them to advance the field. Those working in environmental and mechanical engineering will benefit from the detailed analysis of the technologies covered, as will fuel suppliers and energy producers seeking to improve the efficiency, sustainability and accessibility of their work. Provides a fully updated reference with significant technological advances and developments in the sector Presents analyses on the latest advances in electronic systems for emissions control, autonomous systems, artificial intelligence and legislative requirements Includes a strong focus on updated climate change predictions and consequences, helping the reader work towards ambitious 2050 climate change goals for the automotive industry*

## Transportation in a Net Zero World: Transitioning Towards Low Carbon Public Transport

Springer Nature

### Racing Toward Zero

### The Untold Story of Driving Green

*In Racing Toward Zero, the authors explore the issues inherent in developing sustainable transportation. They review the types of propulsion systems and vehicle options, discuss low-carbon fuels and alternative energy sources, and examine the role of regulation in curbing emissions. All technologies have an impact on the environment, from internal combustion engine vehicles to battery electric vehicles, fuel cell electric vehicles, and hybrids-there is no silver bullet. The battery electric vehicle may seem the obvious path to a sustainable, carbon-free transportation future, but it's not the only, nor necessarily the best, path forward. The vast majority of vehicles today use the internal combustion engine (ICE), and this is unlikely to change anytime soon. Improving the ICE and its fuels-entering a new ICE age-must be a main route on the road to zero emissions. How do we go green? The future requires a balanced approach to transportation. It's not a matter of choosing between combustion or electrification; it's combustion and electrification. As the authors say, "The future is eclectic." By harnessing the best qualities of both technologies, we will be in the best position to address our transportation future as quickly as possible*

### Moving Towards Low Carbon Mobility

*Edward Elgar Publishing ÓFor a thorough and thoughtful perspective on what it will take to de-carbonize cities of the future, this book is a must-read. Technology alone, we are told, will not create the post-carbon city. As important is coming to grips with a complex web of cultural, institutional, financial, and social factors that powerfully shape mobility choices, now and in the future. A balanced, holistic approach that reveals how the many elements of contemporary transport systems work together offers the best hope for achieving more sustainable, less carbon-intensive mobility futures.Ó ð Robert Cervero, University of California, Berkeley, US ÓThis is not just another book about transport and climate change. It sensibly places transport within the much broader concept of mobility and explores all aspects of travel behaviour, of people and goods, and the infrastructure needs to serve these, leading to a balanced set of policy proposals. This volume, compiled by an internationally eminent team of researchers, is essential reading for all those wanting a balanced and objective analysis of this critical topic.Ó ð Roger Vickerman, University of Kent, UK ÓA unique assemblage of papers by top international experts that together cover every aspect of the transport-mobility-environment relationship ð todayÓs central issue for transport planners worldwide.Ó ð Sir Peter Hall, University College London (UCL), UK The transport sector has been singularly unsuccessful in becoming low carbon and less resource intensive. This book takes an innovative and holistic social, cultural and behavioural perspective, as well as covering the more conventional economic and technological dimensions, to provide a more complete understanding of the mobility and transport system and its progress towards high carbon mobility. The book uses this platform to explore the means to achieve low carbon mobility through outlining alternative pathways, through an investigation of theories of change, and through alternative visions of the low carbon transport city. The bookÓs core message is that the complexity of the mobility and transport system should not encourage inaction, but strong and immediate action. In addition to implementing a wide range of policy measures, the book argues for a fundamental change in ÓthinkingÓ when it comes to transport policy, governance and analysis approaches, before low carbon mobility becomes a reality. Bringing together the latest thinking on transport, mobility and the environment, this book will appeal to researchers and students interested in sustainability issues and sustainable transport and transport related areas in particular, including policy makers as well as a more general professional audience.*

### Low-Carbon Land Transport

### Policy Handbook

*Routledge Practical guide for transport policymakers and planners to achieve low-carbon land transport systems. Based on wide ranging research, it shows how policies can be bundled successfully and worked into urban transport decision-making and planning strategies. With case studies from developed and developing countries, it outlines measures for reducing emissions, tailoring these to specific circumstances. It also highlights how greenhouse gas savings are measured, as well as success factors for implementing policies and measures in complex decision-making processes. For students of sustainable transport, professional planners and decision makers, Low-Carbon Land Transport is an invaluable reference for all those looking to help transport networks flow in a sustainable direction.*

## Transportation in a Net Zero World: Transitioning Towards Low Carbon Public Transport

Springer This book discusses the importance of transitioning from conventionally fuelled, electric and hydrogen personal vehicles towards low carbon electric and hydrogen public transport. It presents international comparisons and case studies of countries who have successfully and unsuccessfully implemented policies to reduce their emissions from land-based transport. It discusses and provides policy recommendations to meet a net zero transport world by exploring potential issues, including infrastructure changes and electricity generation mix which may prevent targets being met successfully. The book also demonstrates how the COVID-19 pandemic has influenced individual transport choices and what will need to be done to ensure travel remains sustainable going forward. Aligned with an active area of academic and civil discourse on the topic of sustainable transportation systems, *Transportation in a Net Zero World* will be of interest to researchers, policy makers, and graduate students alike, in the fields of environmental science and transport studies.

## Towards a Zero Carbon Vision for UK Transport

## Sustainable Mobility – Possibility of Zero Emission through Electric Mobility?

GRIN Verlag Seminar paper from the year 2010 in the subject Business economics - Miscellaneous, grade: 1,3, Carl von Ossietzky University of Oldenburg (Department of Business Administration and Education), course: International Sustainability Management, language: English, abstract: Climate change and the negative impact that various human activities can have on our ecosystem are among the inescapable challenges world leaders are facing. While the issue of global warming remains highly debated, there is increasing evidence to support the environmental impact of carbon emissions. It is estimated that the transport sector is responsible for roughly 18% of carbon emissions in Germany. In future, greenhouse gas emissions will have to be reduced in the transport sector and due to the globally growing demand for energy in emerging markets and the risk of shortages prices of fossil fuel are bound to rise considerably. Accordingly mobility re-quires a sustainable development path towards zero-carbon emissions. In consequence, the importance of alternative drive technologies is growing. Battery electric vehicles (BEV) are seen as one possible solution since they release no carbon emissions while running on electric power and are obviously low-noise. However, some question whether BEVs are truly “clean vehicles” because in some cases, the electricity used to power the vehicles is produced by high polluting coal power plants and a lot of energy is required to produce the batteries. In addition past development of battery-electric vehicles showed that the technology was not yet sufficiently mature due to low ranges and high prices to meet the requests of potential users. Thus, several require-ments need to be met to achieve a market acceptance which is sufficiently big to be considered a critical mass providing the way to sustainable mobility. According to the open questions above which are associated with an alternative drive technology, this paper first gives an understanding of sustainable mobility and shows respectively goals (Chapter 2). Chapter 3 provides an overview of greenhouse gas emissions due to transport sector in Germany and consumer’s mobility characteristics and behaviour in order to analyse in Chapter 4 whether zero emission would be possible by BEVs. For this analysis three areas are focused: economically, ecologically and operating characteristics.

## Innovative Approaches Towards Low Carbon Economics

## Regional Development Cybernetics

Springer Climate change is an inevitable and urgent global challenge with long-term implications for the sustainable development of all countries. To overcome this human crisis, the scientific consensus is driving global action towards low carbon economics. Though this action has to involve all sectors (industries, governments, and citizens) and at all levels (global, national and regional levels), the implementation of climate strategies will predominantly be at the regional level. By establishing an innovative range of model technologies, this book aims to develop systematic quantificational methods, such as uncertain multi-objective programming models and system dynamics models, to provide a new approach to low carbon economics that can serve as a paradigm for general regions. At the same time, it offers decision makers a number of effective strategies for some key issues in regional low carbon development, such as greenhouse gas control, ecological capacity evaluation, regional economic prediction, energy structure optimization, land resource utilization, industrial structure adjustment, low carbon industrial chains, low carbon transportation systems and low carbon tourism. It also provides researchers with a new perspective on how to address social problems using quantitative techniques.

## Transport Strategies for Net-Zero Systems by Design

OECD Publishing Efforts that primarily focus on incremental change in systems that are unsustainable by design are one of the main barriers to scaling up climate action. This report applies the OECD well-being lens process to the transport sector.

## Low Carbon Transport in Asia

## Strategies for Optimizing Co-benefits

Routledge Without the effective participation of developing Asia, a climate crisis is certain. Within developing Asia, the key to averting such a crisis lies in low carbon transport. China, India and Asia's other emerging economies could promote fuel efficient vehicles, public transport, and sustainable urban planning. Or they could become locked into inefficient vehicles, energy intensive infrastructure, and suburban sprawl. The path they choose will have long-term implications for the entire world. And it will depend upon the extent to which they adopt a co-benefit approach. A co-benefit approach involves recognizing that some transport policies mitigate greenhouse gases while simultaneously improving urban air quality, commuting times and energy security. Accounting for these additional benefits can overcome a reluctance to bear the costs of climate actions. But it also presents unique technical, financial, and institutional challenges to decision-makers unaccustomed to optimizing multiple benefits. The book represents a pioneering effort to identify and remove barriers to a co-benefit approach in developing Asia's transport sector. The introductory section makes the case for co-benefits in developing Asia's transport sector. The second section features analytical frameworks to identify strategies with potential co-benefits, offering new findings on black carbon and dieselization. The third section grounds the analytic work in case studies on fuel switching in Pakistan, urban planning in Bandung, Indonesia, congestion charges in Beijing, vehicle restraints in Hanoi and bus rapid transit in Jakarta. A final section examines whether a post-2012 climate regime can help transform a rapidly motorizing Asia into a low carbon Asia. This book is essential reading for transport policy makers, planners, and researchers concerned with low carbon transport, climate change and development in Asia and the wider world.

## Toward Zero Carbon

## The Chicago Central Area Decarbonization Plan

Images Publishing An examination and exploration of the issues that the Chicago Climate Action Plan (CCAP) deals with and how they may be implemented

## Towards Low Carbon Transport in Europe

### Communicating Transport Research and Innovation

*The ambitious target of 60% reduction in greenhouse gas emissions by 2050 requires transformation of the transport system in Europe. Decarbonising transport calls for the use of less and cleaner energy, and more efficient use of modern transport infrastructure and services. These strategic targets in EU policy are supported by substantial investment in research to develop innovative and sustainable solutions in efficient use of transport infrastructure and services, more energyefficient transport, and use of alternative fuels and propulsion systems. This Policy Brochure, which is produced by the Transport Research and Innovation Portal (TRIP), highlights the contribution of research and innovation in meeting the EU targets on CO2 emission reduction in the transport system.*

### The Road to Zero Emissions

### The Future of Trucks, Transport and Automotive Industry Supply Chains

*Kogan Page Publishers The transport industry has an important role to play in addressing climate change and the environmental challenges facing governments, businesses and individuals. Achieving net zero emissions by 2050 will require this sector, which is a large contributor of emissions, to innovate, adapt and drive positive change. New technologies including batteries and alternative fuels will all be significant, as will developing different approaches and outlooks. The Road to Zero Emissions is the comprehensive guide for those in the transport industry to understanding what can and is being done to tackle climate change. Through examining established companies and new entrants in the automotive space, readers are provided with examples of the importance of infrastructure, business innovation and financing for the future. In addition to this, the role of governments in establishing policies, such as zero-emission zones, is also discussed. Progressing towards zero emissions requires immediate change and this book will start you on the journey.*

### Facilitating Trade Through Competitive, Low-Carbon Transport

### The Case for Vietnam's Inland and Coastal Waterways

*World Bank Publications As Vietnam pursues a path of sustainable growth, inland waterway transport and coastal shipping offer viable alternatives to the traditional road sector, particularly when environmental costs are taken into consideration. This report profiles Vietnam's waterborne transport sector and proposes interventions to improve its performance.*

### Sustainable Mobility - Possibility of Zero Emission Through Electric Mobility?

*GRIN Verlag Seminar paper from the year 2010 in the subject Business economics - Miscellaneous, grade: 1,3, Carl von Ossietzky University of Oldenburg (Department of Business Administration and Education), course: International Sustainability Management, language: English, abstract: Climate change and the negative impact that various human activities can have on our ecosystem are among the inescapable challenges world leaders are facing. While the issue of global warming remains highly debated, there is increasing evidence to support the environmental impact of carbon emissions. It is estimated that the transport sector is responsible for roughly 18% of carbon emissions in Germany. In future, greenhouse gas emissions will have to be reduced in the transport sector and due to the globally growing demand for energy in emerging markets and the risk of shortages prices of fossil fuel are bound to rise considerably. Accordingly mobility re-quires a sustainable development path towards zero-carbon emissions. In consequence, the importance of alternative drive technologies is growing. Battery electric vehicles (BEV) are seen as one possible solution since they release no carbon emissions while running on electric power and are obviously low-noise. However, some question whether BEVs are truly "clean vehicles" because in some cases, the electricity used to power the vehicles is produced by high polluting coal power plants and a lot of energy is required to produce the batteries. In addition past development of battery-electric vehicles showed that the technology was not yet sufficiently mature due to low ranges and high prices to meet the requests of potential users. Thus, several require-ments need to be met to achieve a market acceptance which is sufficiently big to be considered a critical mass providing the way to sustainable mobility. According to the open questions above which are associated with an alternative drive technology, this paper first gives an understanding of sust*

### Towards Low Carbon Cities in China

### Urban Form and Greenhouse Gas Emissions

*Routledge This book explores the relationship between urban form and greenhouse gas emissions in China, providing new insights for policy, urban planning and management. Drawing on the results of a four-year multidisciplinary research project, the book examines how factors such as urban households' access to services and jobs, land use mixes and provision of public transport impact on greenhouse gas emissions. The authors analyse data from a wide range of sources including 4677 sample households from four major Chinese cities - Beijing, Shanghai, Wuhan and Xi'an - with diverse locations, urban spatial structures and population sizes. The book explores residents' attitudes to reducing GHG emissions and advances knowledge relating to three environmental scales - cross-metropolitan, intra-city and neighbourhood level. It also contributes to debates on low carbon policy by revealing the relevance of urban planning parameters at both the macro and micro levels. The book will be of interest to scholars in the areas of urban planning, urban management, environmental sustainability and resource utilisation, as well as urban policy makers and planners who are working toward developing low carbon, sustainable cities of the future.*

### Responsible Sourcing of Materials Required for a Resource Efficient and Low-carbon Society

*MDPI Understanding future supply and demand of raw materials and the associated environmental and social implications is essential to supporting the transition towards greenhouse gas neutrality by 2050. In this Special Issue, we present a range of research papers with a focus on future outlooks of material supply and use, the consideration of associated environmental and social implications, and issues of raw material criticality and a circular economy. These are complemented by an editorial paper that provides, amongst other aspects, an overview of the corresponding policy and institutional framework. Knowledge of materials availability, their use patterns in modern economies, and associated environmental and social trade-offs is essential for informed decision-making in support of the necessary transition towards more resource-efficient and greenhouse-gas-neutral societies in the coming years.*

### Transforming Urban Transport

## The Ethics, Politics and Practices of Sustainable Mobility

**Routledge** This book confronts head-on the dilemma faced by a world addicted to automobility. It highlights the danger of continuing along the fossil-fuel path and gives viable technological alternatives which can be deployed to find a solution. Changes in urban mobility and transport require local institutional policy action. To support such action, the book explores new methods of governance of transport in dispersed and concentrated cities, new techniques for assessing transport needs, ways of improving childhood mobility, guidelines for political mobilization, and norms of knowledge sharing. This book provides a unique fusion of Asian and Australasian perspectives and engages with the coming needs of transport planning practitioners in both high density and dispersed cities.

## Paving the Road to Sustainable Transport

### Governance and innovation in low-carbon vehicles

**Routledge** This book is about how societies around the world can accelerate innovation in sustainable transport. It examines the relationship between policy change and the development of technological innovations in low carbon vehicle technologies, including biofuels, hybrid-electric vehicles, electric vehicles and fuel cells. Examining this relationship across countries and regions that are leaders in vehicle manufacturing and innovation, such as the European Union, Germany, Sweden, China, Japan, Korea and USA, the books aims to learn lessons about policy and innovation performance.

## Zero Carbon Supply Chains

### The Case of Hamburg

This report assesses the potential of zero carbon supply chains via a case study of the freight transport chain linked to the port of Hamburg. It analyses the initiatives taken by selected main stakeholders to decarbonise freight transport. In addition, it offers recommendations on how the move towards zero carbon supply chains could be accelerated.

## Low Carbon Mobility Transitions

**Goodfellow Publishers Ltd** A thorough examination of how methods of low-carbon transport can be implemented using international case studies, with contributions from recognised industry experts, academics and policy makers.

## The Role of the Electric Vehicle in the Energy Transition

### A Multidimensional Approach

**Springer Nature** This book explores the part that electric vehicles can play in reducing carbon dioxide emissions. Further, it explains the impact of public support, technological advances, lower costs and better battery performance in making electric vehicles a viable alternative. The book begins by analyzing the international context of electric vehicles and how they are being developed in different countries, and by offering a forecast of the electricity demand they may create. It then discusses technological innovations in electric vehicle recharging systems. The book is concerned not only with the economic potential of electric vehicles, but also with environmental aspects; consequently, it examines the raw materials supply chain and performs a lifecycle assessment. The book concludes with a chapter on alternative energies in transport, which may also help to facilitate the energy transition. Given its scope, the book offers a valuable resource for researchers, graduate students, policymakers and industry professionals interested in the energy transition and transport.

## Towards Net Zero: Exploring the Role of Transport and the Built Environment

In this work we examine two of the major contributors to energy consumption and global greenhouse gas emissions: transport and the built environment. In this connection our title, "Towards Net Zero", embraces the efforts made by individuals, organizations, national governments and international agencies to reduce the level of greenhouse gas (GHG) emissions from all sources, including transport and the built environment. These efforts to reduce GHG emissions are being combined with programs designed to offset residual emissions by absorption or 'capture' of carbon dioxide, in order to achieve a "net zero" or "nearly net zero" carbon emissions position. "Towards Net Zero" has been arranged into two distinct but closely related "Books", each of which is preceded by brief Timeline diagrams: Book One is sub-titled "A Geospatial and Historical Perspective: How Did We Get Here?". In Book Two, sub-titled "An Economic and Environmental Perspective: Where are We Heading?", we take a look forward to the future of critical services and infrastructure.

## Low Carbon Development

### Key Issues

**Routledge** Low Carbon Development: Key Issues is the first comprehensive textbook to address the interface between international development and climate change in a carbon constrained world. It discusses the key conceptual, empirical and policy-related issues of low carbon development and takes an international and interdisciplinary approach to the subject by drawing on insights from across the natural sciences and social sciences whilst embedding the discussion in a global context. The first part explores the concept of low carbon development and explains the need for low carbon development in a carbon constrained world. The book then discusses the key issues of socio-economic, political and technological nature for low carbon development, exploring topics such as the political economy, social justice, financing and carbon markets, and technologies and innovation for low carbon development. This is followed by key issues for low carbon development in policy and practice, which is presented based on cross-cutting issues such as low carbon energy, forestry, agriculture and transportation. Afterwards, practical case studies are discussed from low carbon development in low income countries in Africa, middle income countries in Asia and Latin America and high income countries in Europe and North America. Written by an international team of leading academics and practitioners in the field of low carbon development, this book is essential reading for students, academics, professionals and policy-makers interested in the fields of low carbon development, climate change mitigation, climate policy, climate change and development, global environmental change, and environment and development.

## Decarbonising Maritime Transport

## Pathways to Zero-carbon Shipping by 2035

### Turning the Right Corner

### Ensuring Development Through a Low-Carbon Transport Sector

*World Bank Publications* Transport provides access to public services for the poor, opens up trade opportunities, and maximizes the benefits of urbanization: the mobility of people and goods drives development. So how can we protect the role of transport in times of scarcer fuels, costly and harmful carbon emissions, and the rising threat of extreme weather events? This is the central question that this book seeks to answer. *Turning the Right Corner: Ensuring Development through a Low-Carbon Transport Sector* finds that adopting new vehicle technologies and alternative fuels will not be enough to curb greenhouse gas emissions from transport: new patterns of mobility will also be needed. In developing countries where past infrastructure investments have not yet locked in particular transport modes, there is an opportunity to contain emissions by harnessing low-emission modes of transport. The book argues that the transition to low-carbon mobility is not only urgently needed if economies are to avoid becoming locked into high-carbon growth, but is also affordable. It outlines how countries can combine policies to reduce greenhouse gas emissions with broader sector reforms that generate new fiscal resources to finance the transition in addition to carbon financing and international assistance. *Turning the Right Corner: Ensuring Development through a Low-Carbon Transport Sector* will be of interest to policy makers, academics, and development practitioners with an interest in transport. It will help decision makers better understand how to contain the transport sector's contribution to climate change and protect transport infrastructure and services from severe weather events.

### Accelerating Bus Electrification

### Enabling a Sustainable Transition to Low Carbon Transportation Systems

With growing agreement that credible pathways to zero carbon electricity exist, many support the notion that widespread electrification of the transportation sector will be an essential strategy for meeting scientifically-based midcentury climate goals. While transit buses have a relatively small impact on greenhouse gas emissions, they have a larger impact on urban air quality, have commercially available in-service electric models, and have historically commercialized clean technologies that enabled deployment in the rest of the heavy duty vehicle sector. This thesis seeks to understand what factors hinder or enable transit agencies to go beyond initial pilots to largely or wholly electrify their fleets, with the goal of understanding potential policies and strategies that could accelerate such a transition, without inhibiting existing or expanded transit service that also plays a key role in reducing carbon emissions, in order to improve local air pollution and support accelerated electrification of trucks and other heavy duty vehicles. Using public transit fleets in California, Kentucky, and Massachusetts as case studies, this thesis utilizes quantitative total cost of ownership and well-to-wheels greenhouse gas and air pollutant emissions analysis, and analysis of qualitative interviews with transit agency representatives to investigate the barriers, drivers, and potential solutions that could hinder or enable an accelerated yet sustainable transition to an electrified bus fleet. A total cost of ownership analysis reveals that electric buses may already be more cost effective than diesel buses in many case study utility service areas primarily due to fuel and maintenance cost savings, but are sensitive to key parameters such as annual mileage, electricity tariffs that vary widely by location, fossil fuel costs, policy context, and anticipated maintenance savings, and that cost savings from electric buses are likely to increase over time primarily due to anticipated reductions in battery costs and a faster increase in fossil fuel prices than electricity prices. While multiple agencies interviewed in California were planning to fully electrify their fleets, primarily due to political pressure and internal leadership, outside California where less supportive policies exist, fewer agencies were planning to procure additional electric buses, primarily due to high first cost and undesirable tradeoffs with maintaining or expanding transit service levels. Interview respondents reported other substantial barriers as well, such as oversubscribed discretionary grant programs, charging infrastructure costs, electricity costs, additional operational complexity, and performance uncertainty and risk, suggesting a need for multiple complementary policies to overcome these barriers and ensure agencies can transition to a new technology without impacting service. Important interventions identified include pursuing favorable electricity tariffs and electric charging infrastructure incentives through regulatory changes, and further leveraging limited public funds such as the Volkswagen settlement to develop low cost financing approaches similar to those utilized in the clean energy sector that can pledge anticipated operating savings to afford the incremental upfront cost. A set of complementary policies is then recommended to accelerate bus fleet electrification in each case study context, in order to achieve carbon reduction and air quality improvements for low income, urban communities without impacting transit service levels, and to help lead the way for the transition of other heavy duty fleets.

### Towards a sustainable transport system

### supporting economic growth in a low carbon world

*The Stationery Office* This discussion paper describes the Government's transport policy objectives, in light of the recommendations of the Eddington transport study (2006, ISBN 9780118404877) and the Stern report on the economics of climate change (2007, ISBN 9780102944204). It sets out the Department for Transport's policy and investment plans for the period to 2013-14. It goes on to propose a new approach to longer-term strategic transport planning and development, building on the Eddington model, and explains how it will engage with key stakeholders during its implementation. Four key steps are identified in this approach: clarity about policy goals; identifying transport challenges; generating options to address them; and selecting options that deliver the best value for money in the context of sustainable development. The document highlights five broad goals within the Government's transport agenda: maximising the competitiveness and productivity of the economy; addressing climate change; protecting people's safety, security and health; improving quality of life through a healthy natural environment; and promoting greater equality of opportunity.

### Decarbonising Maritime Transport

### Pathways to Zero-carbon Shipping by 2035

### The Business Leader's Guide to the Low-carbon Economy

*Routledge* Rising energy prices and concerns about climate change are driving us towards a new kind of economy - a low-carbon economy. What will this low-carbon economy be like, and what does your business have to do to prosper in this new business environment? Larry Reynolds shows how successful organisations are already learning to be more energy efficient, manage their carbon footprint, adapt to climate change and become truly sustainable. As well as explaining how to future-proof your organisation against possible threats, *The Business Leader's Guide to the Low-carbon Economy*, tells you how to make the most of the many opportunities that the low-carbon economy will bring, especially in growing profits from new products and services. It is your guide to creating an organisation that will thrive in the twenty-first century. While there are plenty of published books about 'going green', there are none which explain the low-carbon economy and how to thrive in it. This book will fill that important gap. Drawing on examples from across industries, including businesses such as Asda, BT, Cargill, Coca Cola, Co-operative Group, Eurostar, Marks and Spencer, Tesco, Tesla, Walker's Crisps, Walmart and ZipCar, Larry Reynolds shows how today's successful organisations are already benefiting from the coming low-carbon economy.

## Climate Action

### Getting Greener : Getting Slimmer, and Going Digital!

*Concept Publishing Company* The publication features a range of articles that encourage the sharing of best practice and the development of new technologies and initiatives and illustrates the opportunities for business and governments to reduce costs and increase profits while tackling climate change. This edition is focused on three themes: mitigation and adaptation, technology, and finance. It also describes positive actions organizations can take to reduce their carbon footprint and thereby their costs. Some of these actions require little investment in time or money, while others require substantial time and capital. But what they all require is a commitment to succeed.--Publisher's description.

### Green, Reliable and Viable: Perspectives on India's Shift Towards Low-Carbon Energy

#### Perspectives on India's Shift Towards Low-Carbon Energy

*CRC Press* Resource-intensive practices of yesterday can no longer sustain the world. The future of our planet hinges on timely transitions to efficiency of resource-use across ecosystems of people, products, and processes. This will happen through transitions to low-carbon global energy systems. Against this, it is vital to take a closer look at the ongoing transitions in India. India is a country faced with the triple challenges of raising a substantial amount of its population out of poverty, shifting to a low-carbon economy, and fighting climate change. It is unquestionable that India's energy demand and consumption will only continue to rise in the decades to come; nonetheless, with multiple synchronized steps in the right direction, India can set the wheel in motion to achieve its development goals while containing its carbon footprint. This book brings together the valued perspectives from key stakeholders in these transitions. Experts and practitioners from the mobility, clean energy, agriculture and energy efficiency sectors, among others, have shared their outlook on challenges that lie in the way of energy transitions in India, and offered solutions and next steps to move the country forward on the decarbonisation pathway. The overarching message is clear: the Indian energy sector of the future will be noticeably different from what it is today. Please note: This book is co-published with TERI Press, India. Taylor & Francis does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka

#### Urban Form and Accessibility

#### Social, Economic, and Environment Impacts

*Elsevier* The growth of global urbanization places great strains on energy, transportation, housing and public spaces needs. As such, transport and land use are inextricably linked. Urban Form and Accessibility: Social, Economic, and Environment Impacts consolidates key insights from multidisciplinary perspectives on the relationship between urban form and transportation planning. Synthesizing the latest cutting-edge research, the book translates academic evidence into practice. Starting with an overview of the key concepts relevant to each discipline, the book covers critical elements such as governance, travel behavior, and technological disruption, showing how to move towards a more sustainable society for all city inhabitants. Draws on evidence-based success stories from countries around the globe Gathers global leading thinkers to provide the state-of-the-art on the topic Examines social, economic, and environmental impacts within each chapter Each chapter's content will have the same structure for easier discoverability

#### Exergetic Aspects of Renewable Energy Systems

#### Insights to Transportation and Energy Sector for Intelligent Communities

*CRC Press* Energy is essential to all human activities as well as critical to social and economic development. Sustainable energy planning encompassing the concept of smart cities has a high potential to significantly contribute to climate change mitigation. For improved energy efficiency, it is essential to find low carbon solutions for the urban environment. The integration and management of energy supply with predominant exploitation of local resources is examined through the fundamental concept of exergy. This book can assist in decision making, with regard to sustainable energy design both at a national and local level.

#### Decarbonizing Development

#### Three Steps to a Zero-Carbon Future

*World Bank Publications* The science is unequivocal: stabilizing climate change implies bringing net carbon emissions to zero. This must be done by 2100 if we are to keep climate change anywhere near the 2oC warming that world leaders have set as the maximum acceptable limit. Decarbonizing Development: Three Steps to a Zero-Carbon Future looks at what it would take to decarbonize the world economy by 2100 in a way that is compatible with countries' broader development goals. Here is what needs to be done: -Act early with an eye on the end-goal. To best achieve a given reduction in emissions in 2030 depends on whether this is the final target or a step towards zero net emissions. -Go beyond prices with a policy package that triggers changes in investment patterns, technologies and behaviors. Carbon pricing is necessary for an efficient transition toward decarbonization. It is an efficient way to raise revenue, which can be used to support poverty reduction or reduce other taxes. Policymakers need to adopt measures that trigger the required changes in investment patterns, behaviors, and technologies - and if carbon pricing is temporarily impossible, use these measures as a substitute. -Mind the political economy and smooth the transition for those who stand to be most affected. Reforms live or die based on the political economy. A climate policy package must be attractive to a majority of voters and avoid impacts that appear unfair or are concentrated on a region, sector or community. Reforms have to smooth the transition for those who stand to be affected, by protecting vulnerable people but also sometimes compensating powerful lobbies.

#### Waste-to-Energy Approaches Towards Zero Waste

#### Interdisciplinary Methods of Controlling Waste

*Elsevier* Waste-to-Energy Approaches Towards Zero Waste: Interdisciplinary Methods of Controlling Waste provides a comprehensive overview of the key technologies and approaches to achieve zero waste from energy. The book emphasizes the importance of an integrated approach to waste-to-energy using fundamental concepts and principles, and presents key methods, their applications, and perspectives on future development. The book provides readers with the tools to make key decisions on waste-to-energy projects from zero-waste principles, while incorporating sustainability and life cycle assessments from financial and environmental perspectives. Waste-to-Energy Approaches Towards Zero Waste: Interdisciplinary Methods of Controlling Waste offers practical guidance on achieving energy with zero waste ideal for researchers and graduate students involved in waste-to-energy and

renewable energy, waste remediation, and sustainability. Provides an integrated approach for waste-to-energy using zero waste concepts Offers decision-making guidance on selecting the most appropriate approach for each project Presents the sustainability and life cycle assessment of WTE technologies on financial and environmental grounds

## Plug-In Hybrid Vehicle Technology

### Design and Build a Plug-In Electric Hybrid Vehicle for a Carbon-Constrained World

CreateSpace After a quick turn of a key, we drive our personal vehicles onto the nearest roadway and join a worldwide club that consumes 2.3 billion gallons of petroleum products per day for transportation. Can the world continue pumping this much oil into vehicles and the resulting carbon into the atmosphere? As early as 2007, the United States understood that this way of life is not sustainable, as reflected in President George W. Bush's State of the Union Address: "It's in our vital interest to diversify America's energy supply -- the way forward is through technology. We need to press on with battery research for plug-in and hybrid vehicles, and expand the use of clean diesel vehicles and biodiesel fuel. America is on the verge of technological breakthroughs that will enable us to live our lives less dependent on oil. And these technologies will help us be better stewards of the environment, and they will help us to confront the serious challenge of global climate change." Plug-in Hybrid Vehicle Technology will develop the case for advanced vehicles that operate without fossil fuels and review the technology required to make low or no-carbon transportation possible. The second-half of the book will apply these concepts in the design and building of a plug-in hybrid electric vehicle (PHEV) and powering it with 100% renewable fuels. (Will you follow the included plans and build one too?) The result is a truly Zero-Carbon Car.

## Reaching Zero with Renewables

International Renewable Energy Agency (IRENA) Energy emissions from industry and transport could be cut to zero by 2060 with pro-active policies and investments. Renewables will be crucial.

## Decarbonizing Logistics

### Distributing Goods in a Low Carbon World

Kogan Page Publishers Logistics accounts for around 9-10% of global CO2 emissions and will be one of the hardest economic sectors to decarbonize. This is partly because the demand for freight transport is expected to rise sharply over the next few decades, but also because it relies very heavily on fossil fuel. This book outlines the nature and extent of the challenge we face in trying to achieve deep reductions in greenhouse gas emissions from logistical activities. It makes a detailed assessment of the available options, including restructuring supply chains, shifting freight to lower carbon transport modes and transforming energy use in the logistics sector. The options are examined from technological and managerial standpoints for all the main freight transport modes. Based on an up-to-date review of almost 600 publications and containing new analytical frameworks and research results, this book is the first to provide a global, multi-disciplinary perspective on the subject. It is written by one of the foremost specialists in the field who has spent many years researching the links between logistics and climate change and been an adviser to governments, international organizations and companies on the topic.