

# RANJAN KUMAR BOSE

Senior R&D Staff, Mobility & Energy Transitions Analysis (META) Group  
Energy Science and Technology Directorate | Oak Ridge National Laboratory  
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## PROFESSIONAL SUMMARY

Dr. Ranjan K. Bose is recognized as a leading international authority on transportation technology assessment, transportation energy and emissions modeling, fuel quality, emissions standards, climate and sustainable transportation policy. He has communicated his work through publications in international respected journals, contributions made as a Fulbright Post-doctoral Scholar at the University of Pennsylvania, US and a Visiting Scientist in the Riso National Laboratory, Denmark.

Ranjan was one of a select group of IPCC experts who wrote and edited the “Chapter 5: Transport and its Infrastructure” in the 2007 IPCC report, “Mitigation of Climate Change”. IPCC was bestowed with the 2007 Nobel Peace Prize in 2007 and for this publication he was recognized as a major contributor.

Prior to joining ORNL in November 2022 as a Senior R&D Staff in the META Group, Ranjan was at the World Bank in Washington DC for 15 years and served as the Bank’s Senior Energy Specialist, after a long illustrious career in The Energy and Resources Institute, New Delhi, India. At the Bank, he has expanded his research interests to include the impacts of urbanization on energy demand and emissions in the developing world, considering not just transport but all sectors. Ranjan has a proven track record in addressing complex urban energy and mobility systems, delivering value and innovation in tools, policy, strategy and planning. His analysis includes fast tracking of electric vehicle regulations and policies worldwide, all the while addressing broader transportation issues such as urban structure, travel demand, infrastructure investment, and fiscal policy.

With significant global experience, his work focused on the design of innovative data-driven city diagnostic tools for sustainable urban energy planning, dissemination of knowledge products and guidebooks for practitioners. He examined a wide range of planning, technology and policy issues associated with reforms of public transport systems to design economically, environmentally, and socially inclusive sustainable urban mobility programs.

Ranjan received a PhD in Sustainable Urban Energy Management from the Indian Institute of Technology, Delhi, Master’s in Statistics from Indian Agricultural Research Institute, and a Bachelor’s in Mathematics (Honors) from Delhi University.

## COUNTRY EXPERIENCE

Bangladesh ▪ Bosnia & Herzegovina ▪ China ▪ Denmark ▪ Georgia ▪ India ▪ Indonesia ▪ Iran ▪ Jordan ▪ Kazakhstan  
Kosovo ▪ Macedonia ▪ Mexico ▪ Philippines ▪ Romania ▪ Serbia ▪ Sri Lanka ▪ Thailand ▪ Turkey ▪ USA ▪ Vietnam

## WORK EXPERIENCE

**OAK RIDGE NATIONAL LABORATORY**, Knoxville, Tennessee, USA

**NOVEMBER 2022 - PRESENT**

**Senior R&D Staff**, Mobility and Energy Transitions Analysis (META) Group, November 2022 – Present

**THE WORLD BANK**, Washington, DC, USA

**MARCH 2008 – NOVEMBER 2022**

**Senior Consultant**, Sustainability, Energy Efficiency, Transportation & Climate Change, Jan 2012 – November 2022  
**Senior Energy Specialist (Transport)**, Energy Sector Management Assistance Program, Mar 2008 – Dec 2011

### *Duties and Responsibilities:*

- Task Team Leader for development and deployment of analytical tools for Energy Efficient (EE) Cities Initiative.
- Delivered a new operation to facilitate fast tracking of e-mobility plans for shared connectivity in India.
- Offered three core functions: *think tank*, *knowledge dissemination* & *operational leveraging* for EE opportunities.
- Lead analytical and advisory assistance to help cities develop low-carbon action plans with bankable proposals.

- Built new strategic initiatives informing policies, regulations, and/or standards in energy and transport systems.
- Lead efforts to generate new business opportunities in collaboration with energy, transport & environment teams.
- Examined the interrelationship between transportation energy, air quality, climate and vehicle technologies.
- Developed collaborative concept notes/proposals and assist the team across sectors with fundraising strategies.
- Built local capacity to improve institutional and policy foundations for green investments in urban infrastructure.
- Offered strategic advice, and operational and technical support to attract private investment on a PPP basis.
- Evaluated state & federal policies and provide AAA to address gaps in sector policy and pre-investment activities.
- Developed sustainable urban energy and emissions planning guidebook for cities to energize green growth.
- Developed business action and accelerate transition to cleaner, healthier and sustainable fuels and technologies.
- Fostered access to knowledge through capacity building and training; establish and maintain networks.
- Developed partnership and regional cooperation to unlock new funding for delivery of annual business plans.
- Delivered technical assistance on energy demand management to help define actions and prioritize investments.
- Offered energy efficiency action plans for over two dozen cities in Southeast Asia, Europe and Central Asia.
- Built strong relationships with donors through regular interaction with Technical Advisory Committee.
- Developed comprehensive accounting tool for low carbon transport solutions and promote fuel efficiency.
- Offered periodic support to improve the quality of urban transport projects through technical peer reviews.

**THE ENERGY AND RESOURCES INSTITUTE (TERI), New Delhi, India**

**NOVEMBER 1982 – JANUARY 2008**

**Director**, Policy Analysis Division, Sep 2007 – Jan 2008

**Adjunct Faculty**, Center for Regulatory & Policy Research, School of Advanced Studies, Aug 2001 – July 2006

**Senior Fellow**, Policy Analysis, Regulatory Studies & Governance Division, Aug 2000 – Aug 2007

**Fellow**, Policy Analysis Division, Center for Urban Systems Initiative, Jul 1991 – Jul 2000

**Research Associate**, Modeling and Policy Analysis Division, Nov 1982 – Jun 1991

*Duties and Responsibilities:*

- Provided senior functions on technical, policy and strategic advice on cross-sector energy issues.
- Worked with auto makers and oil companies on environment and energy regulations, advanced technologies.
- Analyzed fuel efficiency approaches in USA, EU, Japan, China, South Korea, Taiwan, Australia, Canada & India.
- Designed and directed climate and energy policy research and analysis and addressed clean air initiatives.
- Advocated smart transportation policies with relevant stakeholders at the national, regional and local level.
- Conducted integrated assessment, planning and development of energy, transport, buildings and water sectors.
- Prepared pricing & infrastructure costing of supply/distribution of compressed natural gas to advance campaigns.
- Developed policy and institutional frameworks to support sustainable transportation systems for equitable growth.
- Engaged in policy & regulatory efforts to advance national urban transport policy for sustainable urban planning.
- Prepared proposals, secured funds, managed urban transport projects and programs on energy & environment.
- Developed bankable proposals that offer environmentally and financially sustainable urban solutions.
- Designed and delivered bus evaluation report to advice auto-fuel policy committee of Government of India.
- Established networks with research, policy and donor community and also with senior corporate executives.

**UNEP CENTRE ON ENERGY & ENVIRONMENT, Roskilde, DENMARK**

**OCTOBER 1991 – DECEMBER 1991**

**Visiting Scientist/Energy Planner** – Riso National Laboratory (*on sabbatical from TERI*)

*Duties and Responsibilities:*

- Developed Long-range Energy for Alternative Planning tool to analyze energy and environmental scenarios.
- Analyzed urban transport energy and environmental policy to promote equitable growth for public benefit.

### ACCOMPLISHMENTS

- Served as author and review editor for decarbonizing the transportation sector; privileged to co-share 2007 Nobel Peace Prize with colleagues at the IPCC for contribution on climate change and sustainability challenges.
- Prepared Concept Note and raised over \$500K from ESMAP & PPIAF to support fast tracking of shared e-mobility in Kolkata; produced knowledge products on emerging technologies, policies, challenges and trends.
- Supported development of an upcoming e-book on disruptive technology for decarbonizing energy through smart cities, smart mobility, clean energy, smart grid, and blue economy to help operations' design and implementation.

- Persuaded Indian authorities of the need to introduce improved automobile technologies and fuel quality driven by stringent standards, resulting in formulation of country's Auto-Fuel Policy and its nationwide implementation.
- Served as the project manager to design, implement and publish a Guidance Note for city bus operations managers and their technical staff in south India; results reveal 7-15% fuel economy benefits for the city bus fleet.
- Delivered summary of deliberations on emerging technologies, policies, challenges and trends in electric mobility in India based on knowledge sharing events organized by the World Bank's South Asia Energy & Transport team.
- Provided useful inputs in designing effective power policies in India through published work in *Energy Policy* on economic loss due to power outage, and consumer perceptions on willingness-to-pay different or higher tariffs.
- Delivered a techno-economic feasibility of end-of-pipe retrofit technology for ageing diesel bus fleet with clean diesel in Tehran to improve city air quality and reduce carbon footprint, with a focus on expanding engagement.
- Authored a book 'Energy Efficient Cities: Assessment Tools and Benchmarking Practices' containing policy insights and integrated assessments of new cities to the existing ones; helped in designing diagnostic toolkits.
- Delivered a comprehensive analytical framework for a World Bank Flagship Study 'Transport & Climate Change' emphasizing co-benefits and create conditions for increased support for transport investment and governance.
- Developed an innovative world leading computer based "Tool for Rapid Assessment of City Energy, or TRACE" for quick diagnosis of EE performance and benchmarking key indicators and applied the tool in over 80 cities.
- TRACE helped define the Sustainable Cities Pillar in Turkey's US\$ 4.5 billion Country Partnership, and a loan approval of US\$100 million to scale energy efficiency operations in Mexican Cities.
- Co-led the preparation and implementation of the Sustainable Urban Energy and Emissions Planning (SUEEP) Guidebook in the EAP region to attract private sector investments for developing energy efficient infrastructure.
- Delivered Green Business Plans for Danang (Vietnam) & Surabaya (Indonesia) using SUEEP Guidebook for climate action and create bankable opportunities for PPP in cities transport, municipal services, and scale up.
- Helped link knowledge of planning to climate finance on a PPP basis by attracting private sector financing of LED street lighting retrofit program in Danang (Vietnam) and development of a MoU with the city government.
- Supervised implementation of 'Partnership for Market Readiness' activities in Sri Lanka in the energy and transport space to create innovative and cost-effective solutions for carbon mitigation.
- Offered a technical global review paper on advanced heavy-duty bus propulsion technologies available in the commercial market to support lending operation of Bus Rapid Transit project in Bangkok Metropolitan Area.
- Supervised preparation of an energy-efficient and environment-friendly urban mobility plan for the Zarqa municipality (Jordan) for the city downtown area and its implementation.
- Developed a GEF Medium Sized Project on Sustainable and Environmentally Sound Transport System for three south Asian cities (Bangalore, Dhaka and Colombo) for \$1 million co-financing from UNEP-GEF.
- Designed and directed research and analysis and built framework for managing value chain data for logistics and transportation sector as a Working Group Member of the Global Reporting Initiative (GRI) of the WBCSD.
- Delivered India Country Report as an input for an ADB flagship publication 'Energy Efficiency and Climate Change considerations for on-road Transport in Asia'.
- Examined car taxation structure and defined "small car" segment in India; recommended a progressive excise duty regime that increases the differential between fuel-efficient vs. inefficient cars to the Finance Ministry.
- Delivered Indo-UK bilateral transport initiative on: cleaner fuels and heavy-duty engines, regulatory and management practices for I&M program, public transport reform, air quality management and source inventory.
- Played an instrumental role in significant fund raising from donors and development partners on multiple topics (USAID, USDOE, DFID, World Bank, ADB, UNEP, UNCHS, EU, GEF, IEA, GTZ, CIDA, SIDA), corporate foundations (WBCSD, Shell, Rockefeller, Hewlett, Clinton, Pew, WRI-EMBARQ), academia (University of Pennsylvania, University of California-Davis, Oak Ridge National Laboratory and Transportation Research Laboratory, UK), private sectors (BP, TATA, IOC, Shell) and the government (national, state & local).

## SKILLS

- **Effective leadership in analytical work:** quantitative and qualitative methods; energy and emissions modeling; policy mapping; diagnostic tools for quick energy and GHG accounting; benchmarking KPIs; fiscal and economic impact of energy subsidy on national and city budget; create online platform for energy and emissions planning.
- **Advisory services and analytics:** offer strategic advice, and operational and technical cross-support to project preparation and implementation based on good global practices on e-mobility; standards and labeling; energy efficiency measures; building efficiency; transit-oriented development; electrification of public transportation, etc.
- **Government policy and strategy informed:** create policy foundation suitable to local conditions for supporting investments in electric buses and charging infrastructure for share mobility and inclusive growth.
- **Knowledge of market-based mechanisms and economic instruments:** analyze market-based policies for voluntary action to deliver cost-effective ways to deploy clean technologies; leveraging climate financing; last-mile connectivity business solutions for B2B and B2C market segments and their implementation models.
- **Program management, technical coordination and outreach:** provide strategic advice; implementation of sustainable urban energy and emissions program; supervise consultants' work including preparing terms of reference; providing feedback and inputs; oversee outreach and communication strategies.
- **Operational experience in international development:** project management and operation; energy-economic analysis, rapid energy and emissions appraisal, sector priorities and strategies; institutions, regulations and governance; plan and facilitate science-to-policy strategies.
- **Technical research implementation for testbed projects:** perform technical research planning and implementation in cooperation with partner institutions on environment and energy topics including, for example, fuel economy, greenhouses gas emissions, tailpipe emissions standards, advanced technologies, fuel quality, and air quality management.
- **Capacity building and training skills:** lead development and implementation of institutional capacity building and training of city officials; catalyze pre-investment activities; design actions to deliver green growth plan; mobilize financing options for energy efficiency initiatives using Public Private Partnership.
- **Integrative skills on urban infrastructure:** analyze cross-sector areas in an urban setting; mainstreaming energy efficiency and clean energy to promote climate-resilient transit-oriented development.
- **In-depth knowledge of statistical and econometric techniques:** apply multiple regression methods and pooling of cross-sectional and time-series analysis for energy demand forecast, estimation of income and price elasticities; design operations of socio-economic and energy surveys; data analysis and reporting on consumer behavior; technical supervision on survey and market research in industrial, residential and commercial sectors.
- **Fund raising, budget administration, reporting and impact:** prepare project concept notes and proposals to secure funding from bilateral and multi-lateral donors to steer city's energy efficiency operation; delivering green business plan accompanied with a monitoring and reporting framework.
- **Client orientation and partnerships:** anticipate needs and requests; build and maintain partnerships with international, public sector and private sector institutions, think tanks and in-country policymakers.
- **Knowledge of software application:** proficiency with Microsoft Outlook, Word, Excel, and PowerPoint as well as application of other customized software for energy sector planning, modeling and scenario analyses of environmental-friendly policies in the transport sector.

## SPECIALIZED INDEPENDENT ASSIGNMENTS

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|---|----------------------------|
| <b>International Consultant, World Resources Institute, USA</b>   | <b>Nov 2018 – May 2020</b> |
| ▪ City Energy & Climate Action Planning in the Central Asia Regional Economic Cooperation (CAREC) Region                  |                            |
| <b>Country Coordinator for India, USAID-Asia, USA</b>   | <b>Nov 2006 – Sep 2007</b> |
| ▪ ECO-Asia Clean Development and Climate Program – Catalyzing change through regional cooperation                         |                            |
| <b>Transport Expert, World Business Council for Sustainable Dev., SWITZERLAND</b>   | <b>Apr 2004 – Mar 2006</b> |
| ▪ Working Group Member of the GRI on WBCSD's Logistics & Transportation Sector  |                            |
| <b>Domestic consultant, Asian Development Bank, Manila, PHILIPPINES</b>   | <b>Apr 2001 – May 2006</b> |
| ▪ Delivered on several occasions RETA reports on transport energy, air quality and climate policy                         |                            |
| <b>Transport Economics Expert, TATA Eng. &amp; Locomotive Co. Ltd., INDIA</b>   | <b>Apr 2002 – Feb 2003</b> |
| ▪ Transportation Economics and Environmental Issues Influencing Product Development Strategy                              |                            |
| <b>Consultant, UN Department of Economic and Social Affairs, New York, USA</b>  | <b>Dec 2001 – Oct 2002</b> |
| ▪ Global Initiative on Transport and Emissions  |                            |
| <b>Review Editor &amp; Contributing Author, IPCC Working Group III, SWITZERLAND</b>                                       | <b>Sep 2000 - Jan 2008</b> |
| ▪ Mitigation of Climate Change: Chapters on Energy and Transport (3 <sup>rd</sup> and 4 <sup>th</sup> Assessment Reports) |                            |

- Independent Contractor, University of California, Davis, USA** **Apr 2000 – Dec 2000**
  - Solutions: Transportation in Developing Countries – GHG Scenarios for Delhi
- Domestic Consultant World Bank, Washington DC, USA** **Apr 1991 – Sep 1991**
  - Environmental Profile of the Singrauli Region in India
- Assistant National Program Director, LEAD-India, Rockefeller Foundation, USA** **Jan 1993 – Aug 1995**
  - Directed Leadership for Environment and Development Program for Indian Cohort

### EDUCATION

- Fulbright Postdoctoral Scholar, Sustainable Urban Energy Planning, Univ. of Pennsylvania, PA, USA, 1995**
- Ph.D., Energy Modelling & Environmental Management, Indian Institute of Technology, Delhi, INDIA, 1991**
- M.Sc., Statistics (major); Econometrics (minor), [Topper], Indian Agricultural Research Inst., Delhi, INDIA, 1981**
- Diploma, Energy Management in the Enterprise, Intl. Centre for Advanced Tech. Training, Turin, ITALY, 1983**
- B.Sc., Mathematics (Honors), University of Delhi, Hindu College, Delhi, INDIA, 1979**

### ADVANCED TRAINING

- National Centre for Atmospheric Research, Boulder, CO, USA** **Jul 2003 – Aug 2003**
  - Fellow, International Systems for Advanced Research & Training in Urbanization and the Global Carbon Cycle
- International Centre for Advanced Technical Training, Turin, ITALY** **Jul 1983 – Nov 1983**
  - Diploma, Energy Management in the Enterprise

### MEMBERSHIP OF PROFESSIONAL BODIES

- Review Editor: 4th Assessment Report-Climate Change Mitigation: Transport & Infrastructure, IPCC, 2004-2008.
- Member, Working Group on “GRI Logistics and Transportation Sector Supplement” co-convened by the Global Reporting Initiative (GRI) of the World Economic Forum, The Netherlands, 2004-06.
- Member, Technical Advisory Committee on “Enhancement of the Knowledge Base on Urban Transport in India”, Ministry of Urban Development, Government of India, 2006.
- Member, Advisory Committee, Better Air Quality 2004 Workshop: Clean Air Initiative in Asia, ADB, Manila, 2004.
- Mentor, Partnership for Sustainable Urban Transport in Asia – A joint initiative of the ADB & WRI, 2004.
- Member Secretary – Technical Committee, Inspection and Maintenance System of In-use Vehicles, Ministry of Road Transport and Highways, Govt. of India, 2003.
- Fellow, Intl. Systems for Advanced Research and Training, Washington D.C., USA, 2003.
- Member, Steering Committee, Air Quality Monitoring & Management, India, 2003.
- Associate Editor – Pacific and Asian Journal of Energy (PAJE), New Delhi, 1999-2003.
- Member, In-depth Review Committee of the Third National Communication under the UNFCCC, 2002.
- Member, Ecocity Advisory Committee, Central Pollution Control Board, Delhi, 2002.
- Member, National Organizing Committee, Intl. Sym. on Fuels & Lubricants, Delhi, 2002.
- Member, Committee to formulate Auto-Oil Program for the year 2005 set up by the Govt. of India, 2000-2001.
- Assistant National Program Director, Leadership for Environment and Development, 1993-94.
- Member, Fulbright Alumni Association, Washington DC, USA, 1994+.
- Member, IIT-Delhi Alumni Association, New Delhi, India, 1991+.
- Member, American Association for the Advancement of Science, Washington, DC, 1995-2000.
- Member Secretary, Auto-Oil-Government-Research Forum, New Delhi, 1999-01.
- Member, Expert Committee on Urban Environmental Management & Vehicular Pollution Control, GNCTD, 1997.

### AWARDS AND HONORS

- Certificate of Appreciation from IPCC being bestowed with the prestigious 2007 Nobel Peace Prize, 2008
- START Fellowship on Urbanization & Global Carbon Cycle, Nat. Center for Atmospheric Res, Boulder, USA, 2003
- Winner of Fulbright Scholarship for Post-doctoral research in Energy & Environmental Science, 1994
- Cleared Indian Statistical Service through National Competitive UPSC Examination, 1983
- ICAR Postgraduate Scholarship in Statistics and topper in the class of Master of Statistics Degree Program, 1979

### LANGUAGE AND PROFICIENCY

**English:** Native fluency in speaking, reading and writing • **Hindi:** Fluent • **Bengali:** Proficient

## PUBLICATIONS, REPORTS AND PRESENTATIONS

### PUBLICATIONS

1. Bose, R.K. (2019). *Cleaning the Air of Tehran, One Bus at a Time: Retrofit Solutions for the Ageing Diesel Bus Fleet in Tehran (Iran)* – Technological Feasibility and Cost Analysis. Environment & Natural Resources, Middle East and North Africa, **World Bank**, Washington, D.C. June. Report Number 139602.
2. Bose, R.K. (2019). Energy efficiency: Sparking green growth in cities in Southeast Asia. **Lighting Urban Community International Association**, Lyon, France, No. 8, March 2019.
3. Bose, R.K. (2018). Electric Vehicle Newsletter for Knowledge Sharing: Towards Developing Innovative Business Models for Implementation of Electric Vehicles and Charging Infrastructure for Public Transportation in Kolkata (India). ESMAP & PPIAF (inhouse circulation only), **World Bank**, Washington, D.C.
4. Ostojic, D., Bose, R.K. (2016). Energizing Green Cities in Southeast Asia: Application of Sustainable Urban Energy and Emissions Planning in Vietnam. **The Council on Large Electric Systems (CIGRE), Technical Paper, Paper# C1-30**; CIGRE 2016, Paris August 21-26, 2016
5. Bose, R.K., Burduja, S., Ionescu-Heroiu, M. and Mot, A.M.M (2014). *Romania: Improving Energy Efficiency in Seven Cities – Brasov, Craiova, Constanta, Ploiesti, Iasi, Cluj-Napoka, Timisoara*. ESMAP Publication Numbers: 81111, 84296, 84309, 84310, 84311, 84313, 84629, **World Bank**, Washington D.C.
6. Ostojic, D., Bose, R.K., Krambeck, H., Lim, J., Zhang, Y. (2013). *Energizing Green Cities in Southeast Asia – Applying Sustainable Urban Energy and Emissions Planning*. **World Bank**, Washington D.C. 316 pages.
7. Ostojic, D., Bose, R.K., Krambeck, H., Lim, J., Zhang, Y. (2012). *Energizing Green Cities in Southeast Asia – Three City Synthesis Report*. Washington DC: **World Bank & AusAID**. 122 pages.
8. Ostojic, D., Bose, R.K., Krambeck, H., Lim, J., Zhang, Y. (2012). *Sustainable Urban Energy and Emissions Planning Guidebook – A Guide for Cities in East Asia and Pacific*. Washington DC: **World Bank & AusAID**. 84 pages.
9. Bose, R.K., Lim, J., Ostojic, D., Zhang, Y. (2012). *Sustainable Urban Energy and Emissions Planning Program: Overview and Application in Vietnam*. **World Bank Urban Vietnam Urban Brief No. 4**. July. 7 pages.
10. Karam, S., Bose, R.K., Ionescu-Heroiu, M. (2012). *ECA Sustainable Cities Program: Improving Energy Efficiency using TRACE diagnostics - Tbilisi, Georgia; Skopje, Macedonia; Belgrade, Serbia; Sarajevo and Banja Luka, Bosnia and Herzegovina; Pristina, Kosovo*. **World Bank**, Europe and Central Asia/Urban. April 2011 – October 2012.
11. Karam, S., Bose, R.K., Ionescu-Heroiu, M. (2012). *ECA Sustainable Cities: Improving Energy Efficiency in Gaziantep, Turkey*. TRACE Pilot full Report. **World Bank**, Europe and Central Asia/Urban.
12. Bose, R.K. (2011). *Guidance Note – Best Operational and Maintenance Practices for City Bus Fleets to Maximize Fuel Economy*. ESMAP Briefing Note 010/11: Energy Efficient Cities Initiative. **World Bank**, Washington, D.C. 40p.
13. Bose, R.K. (2010). *Energy Efficient Cities: Assessment Tools and Benchmarking Practices*. **World Bank**, Washington, D.C. 228 pages.
14. Bose, R.K. et al. (2008). *Mobility for Development – Bangalore, India*. Prepared by TERI team and published by the **World Business Council for Sustainable Development**, Geneva, Switzerland. 176 pages, August 2008.
15. Roy, J., Bose, C., Bose, R.K. et al. (2010). *Development Pathway*. In **Global Environmental Changes in South Asia**, pp. 14-53. (Editors: A.P. Mitra and C. Sharma), Springer.
16. Kahn Ribeiro, S., S. Kobayashi, M. Beuthe, J. Gasca, D. Greene, D. S. Lee, Y. Muromachi, P. J. Newton, S. Plotkin, D. Sperling, R. Wit, P. J. Zhou (joint authors); Bose, R.K. and Haroon Kheshgi (review editors). (2007). *Transport and its Infrastructure*: In **Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change** [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
17. Bose, R. K. (2007). *Urban Transport Scenarios in South Asia: Energy and Environmental Impact of Enhanced Public Transport Systems*. **Transportation Research Record of the National Academies: Journal of the Transportation Research Board**, No. 2011, pp116-126.
18. Bose, R.K., Shukla, M., Srivastava, L. and Yaron, G. (2006). *Cost of unserved power in Karnataka, India*. **Energy Policy**, 34:1434-1447.
19. Bose, R.K. et al. (2006). *Energy Efficiency and Climate Change Considerations for On-road Transport in Asia*. Contributed the India Country Report. ADB in collaboration with DfID. Publication no. 110406, **Asian Development Bank**, Manila, Philippines.

20. Bose, R.K. (2006). Public Transportation – A Pathway to Sustainability. ***OPEC Bulletin*** 1(2), pp 44-45. January 2006.
21. Bose, R.K. and Sundar S. (2005). Emissions Test Results from Diesel Buses, with and without Oxidation-Catalyst and Regenerating Particle-Trap, and CNG Buses with Three-Way Catalyst in India. ***Society of Automotive Engineers***, SAE 2005-01-0477, USA.
22. Bose, R.K. (2005). *Transportation in the 21st Century*. In *The New Energy Economy*, edited by G M Pillai. **World Institute of Sustainable Energy**, Pune, India
23. Bose, R.K. (2003). Technology and policy shifts towards sustainable urban transport system. ***Pacific and Asian Journal of Energy***, PAJE, December 2003. The Energy and Resources Institute (TERI), New Delhi.
24. Bose R.K., et al. (2003). In-depth review of the transport sector in the third national communication of the Netherlands. **United Nations Framework Convention on Climate Change (UNFCCC)**, Bonn, Germany.
25. Bose, R.K. and Sperling, D. (2002). Transport in Delhi, India: environmental problems and opportunities. ***Transportation Research Record: Journal of the Transportation Research Board***, TRB of the National Academies, No. 1815, pages 3-10. USA.
26. Bose, R.K. (2002). Making the transport sector more energy efficient. *The Bulletin on Energy Efficiency*. ***Indian Renewable Energy Development Agency Limited***, Vol 2, Issue 6, pp10-11, June.
27. Bose, R.K. and Sperling, D. (2001). *Solutions: Transportation in Developing Countries – Greenhouse Gas Scenarios for Delhi, India*. **Pew Center on Global Climate Change**, Arlington, Virginia, 43 pages.
28. Bose, R K. and Shukla, M. (2001). Electricity tariffs in India: An assessment of consumers' ability and willingness to pay in Gujarat. ***Energy Policy***, 29:465-478.
29. Bose, R.K. (2001). Sustainable urban transport policy and the challenges and opportunities for developing economies. ***RITES Journal on Research, Review and Retrospective on Consultancy***. 27th Anniversary Special: Focus on the Third World. Volume 3, Issue 1, April 2001. Pp.17.1-17.21, RITES, Ltd. New Delhi.
30. Bose, R.K. and Nesamani, K.S. (2001). Issues, strategies, and challenges for sustainable urban transport: modeling the impact on the local and global environment – case of Delhi. ***Pacific and Asian Journal of Energy*** PAJE, 11(1): 31-49, June, TERI, New Delhi.
31. Bose, R.K. et al (2001). *Technical and Economic Potential of Greenhouse Gas Emissions Reduction*, pp. 167-277, contributing author in Chapter 3 (section 3.1) on Climate Change 2001: Mitigation. Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Edited by Bert Metz, Ogunlade Davidson, Rob Swart and Jiahua Pan. **Cambridge University Press**, UK. 752 pp.
32. Bose, R.K., Sundar, S. And Nesamani, K.S. (2000). *Clearing the Air: Better Vehicles, Better Fuels*. **New Delhi: Tata Energy Research Institute**. 345 pages.
33. Bose, R.K. (edited). (2000). *Towards Cleaner Auto and Fuel Technologies in India: Issues and Recommendations, and Manifesto for a Road Map*. **Tata Energy Research Institute**, New Delhi. 79 pages.
34. Bose, R.K. and Nesamani, K.S. (2000). *Urban Transport Energy and Environment: A Case of Delhi*. **Institute of Transportation Studies, University of California**, Davis, UCD-ITS-RR-00-11.
35. Bose, R.K. (2000). Mitigating GHG Emissions from the Transport Sector in Developing Nations: Synergy explored in Urban Air Quality Programs. In *Sectoral Economic Costs and Benefits of GHG Mitigation*. Proceedings of IPCC Expert Meeting. Held in Eisenach, Germany 14-15 February 2000. Editors: Lenny Bernstein and Jiahua Pan. pp. 164-182. Published by **RIVM**, Netherlands.
36. Bose, R K. and Shukla, M. (1999). Elasticities of electricity demand in India. ***Energy Policy***, 27: 137-146.
37. Bose, R.K. (1999). *Engineering-economic studies of energy technologies to reduce carbon emissions in the transport sector: opportunities and challenges in India, Bangladesh, Thailand, Republic of Korea and Japan*. In the website <http://www.iea.org/workshop/engecon>. **US Department of Energy**, Washington D.C., USA jointly with **International Energy Agency**, Paris.
38. Bose, R K. (1999). Traffic congestion and growing emissions in Delhi – Mitigation options and strategies. ***Proceedings on Managing Traffic Congestion in Delhi***, pp. 47-53. Delhi Traffic Police, New Delhi, 16-17 April, 191 pp.
39. Bose, R.K. (1998). Automotive energy use and emissions control: a simulation model to analyze transport strategies for Indian metropolises. ***Energy Policy***, 26 (13): 1001-1016
40. Bose, R.K. (1998). Automobiles and Environmental Sustainability: Issues and Options for Developing Countries. ***Asian Transport Journal***, Annual Number. December: pp 13.1-13.6. Asian Institute of Transport Development. New Delhi.
41. Bose, R.K. and Chary, V.S. (1997). Policies to Reduce Energy Use and Environmental Emissions in the Transport Sector - A Case of Delhi City. ***Energy Policy***, 25(14-15):1137-1150.
42. Bose, R.K. (1997). Clean vehicles versus congestion: will metropolises in India stabilize emissions? Energy and Economic Growth: Is Sustainable Growth Possible? ***Proceedings of the 20th Annual International Conference***. International Association for Energy Economics (IAEE), Volume II. Pages 645-660.

43. Dass, A. and Bose, R.K. (1997). The Automobile Air Pollution in Delhi: Perspective and Potential Abatement Measures. *Indian Journal of Transport Management*, 21(2):141-153, CIRT, Pune.
44. Venkata Ramana, P., and Bose, R.K. (1997). A Framework for Assessment of Biomass Energy Resources and Consumption in the Rural Areas of Asia. In *Biomass Energy: Key issues and priority needs conference proceedings*, International Energy Agency. 1997.
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