

## RESEARCH INTERESTS

1. The interaction of energy sector with climate change mitigation
2. Regional integration in South East Asia and implications to energy and environment
3. Cities and climate change
4. Energy and sustainable development, especially energy access in developing countries
5. Environmental (in particular, global environmental change) governance

### Recent activity highlight:

1. Coordinating Lead Author (CLA) of Chapter 12 “Human Settlements, Infrastructure and Spatial Planning” of Working Group III’s contributions to the Fifth Assessment Report of Intergovernmental Panel on Climate Change (IPCC)
2. Book: Low Carbon Transport in Asia: Strategies for Optimizing Co-benefits, Edited by Eric Zusman, Ancha Srinivasan, Shobhakar Dhakal, <http://www.routledge.com/books/details/9781844079155/>
3. Co-editor: Ongoing 2nd Assessment Report on Climate Change and Cities, <http://uccrn.org/management-team/>
4. Project Investigator: APN sponsored research project: Understanding and Quantifying the Water-Energy-Carbon Nexus for Low Carbon Development in Asian Cities, <http://www.apn-gcr.org/resources/index.php/items/show/1916#.UkALI5H-LFI>
5. Member: Sustainable Cities Taskgroup of Sustainable Solution Development Network, <http://unsdsn.org/thematicgroups/tg9/>
6. Senior Editor, Carbon Management Journal, <http://www.future-science.com/page/journal/cmt/editors.jsp>
7. Workshop on Climate Compatible Urban Development: Towards developing assessment framework for cities, 12-13 March 2013, Novotel Hotel at Siam Square, Bangkok <http://www.ait.ac.th/news-and-events/2013/events/shobakar.pdf>

### Watch my Youtube Videos:

1. Thematic Group on Sustainable Cities of UN Sustainable Development Solution Network: Universal Access to Basic Urban Services and Housing: <http://www.youtube.com/watch?v=Ptv3mDNK7jU&list=FL2fxuAZ77Ghq4ZVwGT1onrg>
2. Thematic Group on Sustainable Cities of UN Sustainable Development Solution Network: Urban Resiliency and Environmental

Sustainability: [http://www.youtube.com/watch?feature=player\\_detailpage&v=IKHqFnx7hZQ](http://www.youtube.com/watch?feature=player_detailpage&v=IKHqFnx7hZQ)

3. Thematic Group on Sustainable Cities of UN Sustainable Development Solution Network: Why are Cities Different? Urban Opportunities and Challenges: [http://www.youtube.com/watch?feature=player\\_detailpage&v=Ng823sBhktE&list=FL2fxuAZ77Ghq4ZVwGT1onrg](http://www.youtube.com/watch?feature=player_detailpage&v=Ng823sBhktE&list=FL2fxuAZ77Ghq4ZVwGT1onrg)
4. Daily Planet at Planet Under Pressure London Conference March 2012: <http://www.youtube.com/watch?v=tYrY-2Tg0GA>

#### **In news coverages**

1. [City dwellers seek to transform debate on urban poverty](#); Thompson Reuters, Fri, 13 Dec 2013
2. [China's soviet style suburbia heralds environmental pain](#); Bloomberg News, Nov 7, 2013

#### **TEACHING**

1. Energy-Economy Modelling and Policy Analysis
2. Environmental Policy and Management of Energy Systems
3. Energy, Environment and Climate Change, Issues and Strategies
4. Carbon Markets and Carbon Finance

#### **SELECTED PUBLICATIONS**

##### *Peer reviewed publications*

1. Christopher Kennedy, Lawrence Baker, Shobhakar Dhakal, and Anu Ramaswami (2012). Sustainable Urban Systems: An Integrated Approach. *Journal of Industrial Ecology* 16(6): 775-779.
2. Yasuyo Makido, Shobhakar Dhakal and Yoshiki Yamagata (2012). Relationship between urban forms and CO<sub>2</sub> emissions: Evidenced from 50 Japanese cities. *Urban Climate* 2: 55–67.
3. S. P. Seitzinger, U. Svedin, C. Crumley, W. Steffen, S. A. Abdullah, C. Alfsen, W. J. Broadgate, F. H.B. Biermann, N. Bondre, J. A. Dearing, L. Deutsch, S. Dhakal, T. Elmqvist, N. Farahbakhshazad, O. Gaffney, H. Haberl, S. Lavorel, C. Mbow, A. J. McMichael, J. Morais, P. Olsson, P. Pinho, K. C. Seto, P. Sinclair, M. Stafford-Smith, L. Sugar (2012). Planetary stewardship in an urbanising world: beyond city limits. *Ambio* 41:787-794.
4. Phetkeo Poumanyong, Shinji Kaneko, Shobhakar Dhakal (2012). Impacts of urbanization on

national transport and road energy use: Evidence from low-, middle- and high-income countries. *Energy Policy* 46:268-277.

5. Ada Ignaciuk, Martin Rice, Janos Bogardi, Pep Canadell, Shobhakar Dhakal, John Ingram, Rik Leemans and Mark Rosenberg (2012). Responding to Complex Societal Challenges: A Decade of Earth System Science Partnership (ESSP) Interdisciplinary Research. *Current Opinion in Environmental Sustainability* 4(1)147-158.
6. Anu Ramaswami and Shobhakar Dhakal (2011). Low carbon policies in the USA and China: Why cities play a critical role. *Carbon Management* 2(4) 359-352.
7. Houghton RA and Shobhakar Dhakal (2010). Welcome to Carbon Management. *Carbon Management* 1(1):1-3, Future Science Publishers.
8. Josep G. Canadell, Philippe Ciais, Shobhakar Dhakal, Han Dolman, Pierre Friedlingstein, Kevin R. Gurney, Alex Held, Robert B. Jackson, Corinne Le Quéré, Elizabeth L. Malone, Dennis S. Ojima, Anand Patwardhan, Glen P. Peters, Michael R. Raupach (2010). Interactions of the carbon cycle, human activity, and the climate system: A research portfolio. *Current Opinion in Environmental Sustainability* 2(4)301-311.
9. Corinne Le Quéré, Josep G. Canadell, Philippe Ciais, Shobhakar Dhakal, Anand Patwardhan, Michael R. Raupach, and Oran R. Young (2010). An International Carbon Office to assist policy-based science. *Current Opinion in Environmental Sustainability* 2(4)297-300.
10. Dhakal, Shobhakar (2010). GHG emissions from urbanization and opportunities for urban carbon mitigation. *Current Opinion in Environmental Sustainability* 2(4): 277–283, Elsevier.
11. Shobhakar Dhakal and Anil Raut. 2010. Potential and bottlenecks of the carbon market: Case of developing country, Nepal. *Energy Policy*, 38 (2010) 3781–3789.
12. Dhakal, Shobhakar and Shrestha Ram M. (2010). Bridging the research gaps for carbon emissions and their management in cities. *Energy Policy*, 38(2010)4753-4755.
13. Shobhakar Dhakal. 2009. Urban energy use and carbon emissions from cities in China and policy implications. *Energy Policy*, 37 (2009) 4208–4219.
14. Li Li, Changhong Chen, Shichen Xie, Cheng Huang, Zhen Cheng, Hongli Wang, Haiying Huang, Jun Lu, Shobhakar Dhakal. 2009. Energy demand and carbon emissions under different development scenarios for Shanghai, China. *Energy Policy* 38(9)4797-4807.
15. Kennedy, Christopher, Anu Ramaswami, Sebastian Carney and Shobhakar Dhakal. 2009. Greenhouse Gas Emission Baselines for Global Cities and Metropolitan Regions. World Bank Commissioned paper for the Urban Research Symposium on Cities and Climate Change, Marseille, 28-30 June 2009.
16. Nigel Jollands, Paul Dowling, Shobhakar Dhakal, Leticia Guimaraes, Stephen Hammer, Stephen

Henihan, Lily Parshall, Matthian Ruth, Niels Shulz, Wayne Wescott. 2008. Chapter 8- Energy Use in Cities, World Energy Outlook 2008, Paris: International Energy Agency.

17. Shobhakar Dhakal. 2008. Creating an Urban Movement for Sustainable Living. *Global Asia- A Journal of East Asia Foundation* 3(3):16-20.
18. Shobhakar Dhakal and Michele Betsill. 2007. Challenges of Urban and Regional Carbon Management and the scientific response. *Local Environment* 12 (5): 549 – 555.
19. Sudhakar Yedla and Shobhakar Dhakal. 2007. Transport and Environment in Developing countries, *Journal of Environment and Pollution* 30 (1) 1-7.
20. Shobhakar Dhakal and Lee Schipper. 2005. Transport and Environment in Asian Cities: Reshaping the issues and opportunities into a holistic framework. *International Review for Environmental Strategies* 5 (2): 399-424.
21. Shobhakar Dhakal. 2005. Strengthening urban environmental management in Asia, *Sustainable Asia 2005 and Beyond – In pursuit of innovative policies*, Hayama: Institute for Global Environmental Strategies.
22. Shobhakar Dhakal. 2005. Energy consumption and GHG emission in Asian mega-cities. *Urban Environmental Management Challenges in Asia*, Hayama: Institute for Global Environmental Strategies.
23. Shobhakar Dhakal, Keisuke Hanaki and Ai Hiramatsu. 2004. Heat discharges by an office building in Tokyo using DOE-2. *Energy Conversion and Management* 45 (7/8): 1107-1118.
24. Shobhakar Dhakal, Keisuke Hanaki and Ai Hiramatsu. 2003. Estimation of Heat Discharges by Residential Buildings in Tokyo. *Energy Conversion and Management* 44 (9): 1487 – 1499.
25. Shobhakar Dhakal. 2003. Implications of transportation policies on energy and environment in Kathmandu Valley, Nepal. *Energy Policy* 31(14): 1493-1507.
26. Shobhakar Dhakal and Hidefumi Imura. 2003. Policy based indicator Systems: emerging debates and lessons, *Local Environment* 8(1):113-119.
27. Dhakal, S.; S. Kaneko and H. Imura (2003). CO<sub>2</sub> emissions from energy use in east-Asian mega-cities: driving factors and their contributions, *Environmental Systems Research*, Volume 31, pp. 209-216. Japan Society of Civil Engineers.
28. Shobhakar Dhakal and Keisuke Hanaki. 2002. Improvement of Urban Warming by Managing Heat Discharges and Surface Modifications in Tokyo. *Energy and Buildings* 34(1): 13-23
29. Dhakal, S.; S. Kaneko and H. Imura (2002). An analysis on driving factors for CO<sub>2</sub> emissions from energy use in Tokyo and Seoul by Factor Decomposition Method. *Environmental Systems*

Research, Volume 30, pp 295-303. Japan Society of Civil Engineers (JSCE).

### **Books/reports**

1. Eric Zusman, Ancha Srinivasan, and Shobhakar Dhakal eds. 2011. *Low Carbon Transport in Asia: Strategies for Optimizing Co-benefits*, London and New York: Routleg.
2. Liese Coulter, Pep Canadell and Shobhakar Dhakal. 2008. *Carbon Reductions and Offsets*, GCP Report No.6, Canberra: Global Carbon Project.
3. Shobhakar Dhakal 2004. *Urban Energy Use and Greenhouse Gas Emissions in Asian Mega-cities: Policies for a Sustainable Future*, Hayama: Institute for Global Environmental strategies.
4. Shobhakar Dhakal. 2006. *Urban Transportation and the Environment in Kathmandu Valley, Nepal: Integrating Global Carbon Concerns into Local Air Pollution Management*. Hayama: Institute for Global Environmental Strategies.

### **Book chapters**

1. Xuemei Bai, Shobhakar Dhakal, Julia Steinberger, and Helga Weisz (2012). Drivers of urban energy use and main policy leverages. *Energizing Sustainable Cities: Assessing Urban Energy* (Ed. Arnulf Grubler and David Fisk), Routleg, London and New York, 2012.
2. Shobhakar Dhakal (2012). Urban air quality management. *Energizing Sustainable Cities: Assessing Urban Energy* (Ed. Arnulf Grubler and David Fisk), Routleg, London and New York, 2012.
3. Eric Zusman, Ancha Srinivasan, and Shobhakar Dhakal (2011). Low Carbon Transport and co-benefits in Asia: An Overview. In *Low Carbon Transport in Asia: Strategies for Optimizing Co-benefits* (Ed. Eric Zusman, Ancha Srinivasan, and Shobhakar Dhakal). London and New York: Routleg. pp 3-18.
4. Eric Zusman, Ancha Srinivasan, and Shobhakar Dhakal (2011). Low Carbon Transport and co-benefits in Asia: the way forward. In *Low Carbon Transport in Asia: Strategies for Optimizing Co-benefits* (Ed. Eric Zusman, Ancha Srinivasan, and Shobhakar Dhakal). London and New York: Routleg. pp 244-259.
5. Grubler, A., X. Bai, T. Buettner, S. Dhakal, D.J. Fisk, T. Ichinose, J. Keirstead, G. Sammer, D. Satterthwaite, N.B. Schulz, N. Shah, J. Steinberger and H. Weisz. 2011: *Urban Energy Systems*. In *Global Energy Assessment: Toward a Sustainable Future*. L. Gomez-Echeverri, T.B. Johansson, N. Nakicenovic, A. Patwardhan, (eds.), IIASA, Laxenburg, Austria and Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
6. Kennedy, Christopher, Anu Ramaswami, Sebastian Carney and Shobhakar Dhakal. 2011. *Greenhouse Gas Emission Baselines for Global Cities and Metropolitan Regions*, *Cities and Climate Change: Responding to an Urgent Agenda*, Daniel Hoornweg, Mila Freire, Marcus J. Lee,

Perinaz Bhada-Tata, and Belinda Yuen, Eds., The World Bank, Washington DC, USA, 15-54.

7. Hammer, S. A., J. Keirstead, S. Dhakal, J. Mitchell, M. Colley, R. Connell, R. Gonzalez, M. Herve-Mignucci, L. Parshall, N. Schulz, M. Hyams, (2011): Climate change and urban energy systems. *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network*, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 83–109.
8. Dhakal, Shobhakar (2010). Urban energy transitions in Chinese cities. In *Cities and Low Carbon Transition* (ed. Harriet Bulkeley, Vanesa Castán Broto, Mike Hodson and Simon Marvin), London: Routledge.
9. Joyashree Roy, Chhonda Bose, Ranjan Bose, Sarmistha Das, Shobhakar Dhakal, Mitali Dasgupta, Rucha Ghate, Saikat Sinha Roy, Manaswita Konar, Anoja Wickramasinghe, Moumita Roy and Chetana Chaudhuri (2010). *Development Pathways*. In *Global Environmental Changes in South Asia: A Regional Perspective* (ed A.P Mitra and C. Sharma). Capital Publishing Company, New Delhi Kolkata.
10. Contributions to CCICED Policy Research Report 2009. Energy efficiency and urban development. Policy recommendations to Chinese Government from Taskforce on Urban Development and Energy Efficiency of China Council for International Cooperation on Environment and Development (CCICED) <http://cciced.net/encciced/media/publication/PubProcessofAGM/2009agmpp/tfreports/200911/P020091130360386085315.pdf>
11. Canadell Pep, Philippe Cias, Shobhakar Dhakal, Corinne LeQuere, Anand Patwardhan and Mike Raupach, *The Human Perturbation of the Carbon Cycle*, Policy Brief, UNESCO-SCOPE-UNEP, November 2009- No.10.
12. Shobhakar Dhakal. 2008. *Climate Change and Cities: The Making of a Climate Friendly Future*, Urban Energy Transition (ed. Peter Droege), Oxford: Elsevier.
13. Shobhakar Dhakal. 2005. De-coupling of Urban Mobility Need from Environmental Degradation in Singapore. *Urban Infrastructure - An Introduction* (ed Y. Chandra Sekhar), Hyderabad: ICFAI University Press, pp 198-226.
14. Shobhakar Dhakal. 2003. *The Urban Heat Environment and Urban Sustainability*. *Future Cities: Dynamics and Sustainability* (Ed. Fred Moavenzadeh, Keisuke Hanaki and Peter Baccini), pp 149-172, Kluwer.
15. Dhakal, Shobhakar (2002). *Reviews of Existing Indicator Systems and their relevance to cities for Kitakyushu Initiative (2001/2002)*. Report prepared for Ministry of Environment (MOE) Japan on behalf of Kitakyushu Initiative for a Clean Environment, June 2002 (as Principal Investigator).
16. *Scoping Report on Urbanisation and Global Environmental Change*, International Human

Dimensions Program (IHDP), Bonn, February 2003, Germany (Edited by Roberto Sanchez).

17. Dhakal, Shobhakar; G. Norman (2003). Transitions in Urban Energy and Environment: Perspectives from the South-Asia. Proceedings of South Asian Regional Conference on Transition towards Sustainable Development. The Energy and Resources Institute (TERI), 2003 Delhi.
18. Contributions to Environmental Governance for Sustainable Development in Asia and the Pacific, United Nations Economic and Social Commission for Asia and the Pacific, United Nations Development Programme (ed.), New York, United Nations, 2002. (Input provided to report regarding the Kitakyushu Initiative, in particular to Section V. "Environmental governance: spatial issues", pp.101-111).
19. Dhakal, S. and S. Kaneko (2002). Urban Energy Use in Asian Mega-Cities: Is Tokyo a desirable model? Proceedings of IGES/APN Mega-City Workshop on Policy Integration of Energy Related Issues in Asian Cities, 23-23 January, 2002, Riga Royal Hotel, Kitakyushu, Japan, pp 173-181

### **Magazines and opinions**

1. Venkatesh, Govindarajan; Dhakal, Shobhakar (2012). An International Look at the Water-Energy Nexus, Journal of American Water Works Association, 104 (5) 93-96.
2. Shobhakar Dhakal, Ruben Zondervan and Jose Antonio Puppim de Oliveira (2011). Carbon governance in Asia: bridging scales and disciplines. Our World 2.0 The United Nations University. Available at: <http://ourworld.unu.edu/en/carbon-governance-in-asia-bridging-scales-and-disciplines/>
3. Dhakal, Shobhakar (2009). Tackling China's Urban Carbon Emissions, Global Change, Issue 74: 20-23, Winter 2009. International Geosphere-Biosphere Programme, Stockholm.
4. Towards a Low-Carbon Society and its Relevance to Mountainous Regions (with Anil Raut), Asia Pacific Mountain Network Bulletin, Volume 9 , Number 1, Summer 2008, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu.
5. Comment infléchir les émissions de CO2 dans quatre mégapoles d'Asie, LaRevueDurable, Dossier Vivre Ensemble En Megalopole, Numero 14, Fevrier-Mars 2005, Bimestriel, France (In French)
6. Comparing East Asian Mega-cities, German-Chinese Business Forum, 2003 November Issue, Published by German-China Business Delegation, Shanghai.
7. Advancing sustainability in Asian cities: Reducing greenhouse gas emissions, Cover story on Asia ecoBest, Volume 6, November 2002, pp 6-8, Singapore.
8. Sustainability of Asia's mega-cities: Policies for energy demand and greenhouse gas mitigation. UPDATE - Newsletter of International Human Dimension Program for Global Change (IHDP),

Bonn, Germany, September 2002 issue, pp. 8-10.

## ONGOING AND COMPLETED PROJECTS

1. Water-Energy-carbon Nexus in Asian Cities; 2013- 2014; Tokyo, Bangkok, New Delhi; Sponsored by Asia Pacific Network for Global Change Research; Developing framework of nexus in Asian cities, identifying key drivers through developing case study protocols and conducting case studies on nexus, quantification of nexus, policy implication and recommendation for optimizing nexus for low carbon urban city development
2. Climate Compatible Urban Development: Framework and indicators
3. Consumption and CO2 mitigation: Attribution of CO2 emission at the consumption side with the help of economic I-O analyses and hybrid methods in Asian mega-cities; modelling direct and embodied energy and emission analyses at multiple scales
4. Low carbon cities and scenarios; Urbanization, urban form and CO2 emissions: Impact of urbanization and urban form to energy and CO2 mitigation
5. Global syntheses and assessments such as IPCC (2010-2014), GEO5, and Second Assessment Report on Climate Change and Cities (2013-2015) of Urban Climate Change Research Network

## AWARDS AND HONORS

N/A

## PROFESSIONAL AFFILIATIONS

Involvements in the global research and scientific activities

1. Coordinating Lead Author (CLA) of Chapter 12 “Human Settlements, Infrastructure and Spatial Planning” of Working Group III’s contributions to the **Fifth Assessment Report of Intergovernmental Panel on Climate Change (IPCC)**, June~ 2015
2. Co-editor and Member of the Steering Committee, Second Assessment of Cities and Climate Change, Urban Climate Change Research Network (**UCCRN- [www.uccrn.org](http://www.uccrn.org)**), 2012 ~
3. Principal Scientific Reviewer (PSR) of **Global Environmental Outlook 5 (GEO-5)**. United Nations Environmental Program (UNEP), 2011.
4. Lead Author, Knowledge Module on Urbanization, **Global Energy Assessment-**



[http://www.iiasa.ac.at/Research/ENE/GEA/index\\_gea.html](http://www.iiasa.ac.at/Research/ENE/GEA/index_gea.html), 2008 ~ 2011 (Cambridge University Press).

5. Member, Consensus Panel on Low Carbon Cities, **Academy of Science of South Africa**, 2009 ~ 2011.
6. Lead Author, Energy Chapter, **Assessment Report on Climate Change in Cities** - <http://www.uccrn.org/>, 2008 ~ 2010 (Cambridge University Press, 2011)
7. Core-member, City Policy Forum of **Centre for Global Partnership** of Japan Foundation and Social Science Research Council (SSRC) USA on The Environment and Climate Change (2009 ~ 2012).
8. International Expert, Task force on Urban Development and Energy Efficiency, **China Council for International Cooperation on Environment and Development**, 2008~2009.
9. Expert Member, Cities International Energy Modeling Expert Group, **International Energy Agency** (2007~2008) and author and leader of China analyses for World Energy Outlook 2008's chapter on cities
10. Organized series of capacity building events and provided technical support to **UNESCAP's Kitakyushu Initiative for Clean Environment** (Asian inter-city environmental cooperation program for Asia and the Pacific, priority program endorsed by WSSD summit) for network building, best practices analyses, policy dialogues, and city twinning for 2001-2004

#### Academic Journal Editorial involvements:

1. Senior Editor (Asia-Pacific), Carbon Management, Future Science Publishers, London, <http://www.future-science.com/page/journal/cmt/teaser.jsp> 2010 ~ ongoing
2. Co-editor, Special Issue on Sustainable Urban Systems, Journal of Industrial Ecology, December 2012.
3. Member of Editorial Board, Urban Climate, Elsevier, 2012-2015
4. Member, Board of Editorial Advisors, International Energy Journal, March 2009 ~ onwards
5. Guest Co-editor, Special Issue on Pathways toward Low-carbon Cities: a US–China Focus, Carbon Management Journal (Volume 2, No 4, 2011). .
6. Guest Co-editor, Special Issue on Carbon Emissions and Carbon Management in Cities, Energy Policy Journal (Volume 38, Issue 9, 2010)
7. Guest Co-editor, Special Issue on Environmental Implication of Urban Transportation in Asia, International Journal of Pollution and Environment (Volume 30, No.1, 2007)

#### Invited visiting positions:

1. Guest Research Scholar, Transitions to New Technology Program, International Institute for Applied Systems Analysis (IIASA), Schlossplatz 1, A-2361 Laxenburg, Austria (Nov 2009 – Oct 2013).
2. Visiting Associate Professor, Graduate School of Environmental Studies, Nagoya University, Japan (Apr 2008- Mar 2013).
3. Senior Fellow, Institute for Global Environmental Strategies (IGES), Hayama, Kanagawa, Japan (Nov 2011 – Mar 2013).
4. Visiting Researcher, National Institute for Environmental Studies, Japan, (Aug 2012 – March 2013).

#### RESEARCH KEYWORDS

1. Modeling and analyses of energy and emission, especially the carbon and other GHG mitigation
2. Policies and governance of climate change
3. Cities and climate change, low carbon transport policies
4. Global and regional carbon cycle
5. Research-policy interfacing: syntheses and assessments for policy-applications and the research-policy dialogues