

*As of June 2023*

## **Professor Shobhakar Dhakal**

Vice President for Academic Affairs  
Asian Institute of Technology (AIT), Thailand  
Professor of energy, environment, and climate change

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**Date of birth:** 10 Dec 1970

**Nationality:** Nepali

### **Motivation for IPCC Bureau Membership**

I have worked with IPCC WGIII as Coordinating Lead Author (CLA) in its Fifth Assessment Report (Ch12: Human Settlements Infrastructure and Spatial Planning), Sixth Assessment Report (Ch2: Emission Trends and Drivers), and taken part in numerous outreach and scoping exercise for AR6 WGIII report's structure, the latest one in synthesizing to bring out the key messages to urban policy makers out of IPCC reports. The role of IPCC, as an honest science-broker to policy makers and to society in general, is more important than ever as we struggle to meet Paris Agreement's goals and live in the world with fast changing climate. Needless to say, the landscape of knowledge base and literature is rapidly changing too.

My realizations are clear: IPCC assessments now need to put more focus on 'high quality assessment', 'systematic assessment', 'solution-oriented', and 'clear recognition of regions' to bring science to policy makers. IPCC also needs to work more on the cross-linkages between its working groups. Climate is a key, yet only one component of the earth system – IPCC assessments need to develop clear linkages with the other assessments. A clear balance of scientific and non-scientific but credible literature with proper vetting is important for IPCC as we realize more needs to address the 'solution' part while bringing in more and more authors and knowledge from the Global South.

If I am elected to the IPCC bureau, I will stive for these to my fullest capacity. Any assessment can only become an excellent assessment if we can foster group-work. While author nominations are made by the multiple stakeholders, IPCC assessments needs a good, competent, and inclusive team for each chapter and is a crucial task where I will bring my own experience on how to do better for IPCC as bureau member and guide the assessment process.

### **Summary of Personal Profile**

As a Vice President for Academic Affairs, I am currently responsible for Asian Institute of Technology's academic and research portfolios. Apart from providing senior leadership to the institute, my teaching, research and international activities involve: energy and climate policies and modelling and accounting; options and scenarios for energy and climate change mitigation;

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cities and climate change; and the SDG (Sustainable Development Goals) synergies and tradeoffs of climate and energy goals with others.

I served as a [Coordinating Lead Author](#) for the [6<sup>th</sup> Assessment Report \(WGIII-Mitigation\)](#) of Intergovernmental Panel on Climate Change (IPCC), where I led assessment on [Emission Trends and Drivers](#) (Chapter 2). I am also a [member](#) of Scientific Steering Committee of the [Global Carbon Project](#) (a well-known global research program). As a Coordinating Lead Author, I also led 5<sup>th</sup> Assessment Report of IPCC (WGIII-mitigation) for the [Chapter 12, Human Settlements, Infrastructure and Spatial Planning](#).

I was placed amongst the top 1% of the global researchers for last several years (2020 -2022) in the field of ‘Energy’ as published in [PLOS Biology Journal](#). I was amongst the 20 co-authors of a UN-led high-level global scientific assessment launched on 18 February 2021 by UN Secretary-General António Guterres “[Making Peace with Nature: a scientific blueprint to tackle the climate, biodiversity and pollution emergencies](#)” that outlines a blueprint to tackle Earth’s interconnected planetary crises presenting the latest science. My key contributions are also in major recent global scientific processes related to energy, climate change mitigation, and the cities and climate change issues. I had also led [energy assessment for the Hindu Kush Himalaya](#), which is one of its first kind of assessment for the region led by the International Center for Integrated Mountain Development (ICIMOD). I also served as an International Expert Panel Member of the Consensus Panel on Low Carbon Cities at the Academy of Science of South Africa (ASSF) in 2009-2011. I was involved in publishing 336 cities’ emissions data and key drivers for the global community which is published by Nature’s Scientific Data in October 2018. My paper on urban typology and emissions in 50 Japanese cities, published in *Urban Climate* in 2012 was one of the most cited paper till 2017 of the *Journal*. I was one of the first group of scholars to carry out meta-analysis of the emissions of global cities (done on requests from the World Bank in 2009) which are taken as a base by many follow-on researchers. I have special focus on China’s cities and climate change issues where I have published many papers closely working with researchers in China. I was part of International Energy Agency’s World Energy Outlook 2008 team that made the first global estimation on the role of cities in the global energy consumption and carbon emissions -I led Asia and China there.

I have published papers in the top journals in the field such as *Nature*, *Nature Sustainability*, *Nature Climate Change*, *Nature Scientific Data*, *Energy*, *Energy Policy*, *Journal of Industrial Ecology*, *Current Opinion in Environmental Sustainability*, and others. I have published 8 books, two dozen book chapters, and over 70 peer-reviewed papers in international journals. I have delivered keynote and took plenary speaking roles in major international scientific conferences such as [Planet Under Pressure](#) (London, 26-29 March 2012), Chatham House event (London, 27-28 May 2014), [Our Common Future Under Climate Change](#) (Paris, 7-10 July 2015), [Vienna Energy Forum](#) (Vienna, 10-12 May 2017), and [Cities & Climate Change Science Conference](#) (Edmonton, 5-7 March, 2018). I was invited to co-chair the Scientific Steering Committee of this Edmonton Conference, which aimed to set a global research agenda for the future. The [global research and action agenda](#) that I helped to develop and personally co-authored with many experts is now noted by IPCC and now being implemented by the related international communities.

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I have delivered over 100 keynotes/plenary talks/invited talks in various events globally since 2012 alone. I am equally active in non-peer-reviewed policy-oriented publications and closely communicates with journalists for science communication, and quoted in the Economist, Reuters and many other media including several interviews.

Before joining Asian Institute of technology, I was one of the two Executive Directors of the [Global Carbon Project](#) from 2006-2012. I was a Guest Scholar to the Transition to New Technologies Group of [International Institute for Applied Systems Analysis, Austria](#) (2010-2013), a visiting Associate Professor to [Nagoya University](#) (2009-2012), and a visiting researcher (2012-2017) to [National Institute for Environmental Studies, Japan](#). I was a Senior Policy Researcher and Project Manager of urban program at the [Institute for Global Environment Strategies](#), Japan in 2000-2006.

## **Professor Shobhakar Dhakal**

### **Key experiences**

- April 2021 – ongoing Vice President (Academic Affairs), Asian Institute of Technology (AIT), Thailand
- July 2020 – March 2021 Dean, School of Environment, Resources and Development, Asian Institute of Technology (AIT), Thailand
- Feb 2019 – ongoing Professor of Energy and Climate Policy, Department of Energy, Environment and Climate Change, School of Environment, Resources and Development, Asian Institute of Technology (AIT), Thailand.
- April 2016 – ongoing Vice-Chair, Climate Change Asia, Asian Institute of Technology.
- Jan 2017 – Dec 2018 Head, Department of Energy, Environment and Climate Change, Asian Institute of Technology (AIT), Thailand.
- July 2012 – Jan 2019 Associate Professor of Energy and Climate Policy, Energy Field of Study, School of Environment, Resources and Development, Asian Institute of Technology (AIT), Thailand.
- April 2006 – July 2012 Co-Executive Director (based in Japan), Secretariat of the Global Carbon Project, Hosted at National Institute for Environmental Studies, Japan and the Commonwealth Scientific and Research Organization (CSIRO), Australia.
- April 2001 - March 2006 Researcher/Policy Researcher/Senior Policy Researcher and Project Manager, Urban Environmental Management Project, Institute for Global Environmental Strategies (IGES), Japan.

### **Affiliated positions**

- August 2012 – March 2016 Visiting Researcher, Center for Global Environmental Research, National Institute for Environmental Studies, Japan.
- Nov 2009 – Oct 2013 Guest Research Scholar, Transitions to New Technology Program, International Institute for Applied Systems Analysis (IIASA), Austria.
- April 2008 - March 2013 Visiting Associate Professor, Graduate School of Environmental Studies, Nagoya University, Japan.
- Nov 2011 – March 2013 Senior Fellow, Institute for Global Environmental Strategies, Japan.

### **Academic credentials**

- Doctor of Philosophy (Ph. D), Department of Urban Engineering, The University of Tokyo, Japan, 2000 (Energy Management and Mitigation of Urban Heat Island).
- Special Full Time Graduate Student, January-May Semester, Technology Policy and Planning Program and Department of Civil Engineering, Massachusetts Institute of Technology, United States, 1999.
- Master of Engineering in Energy Policy and Planning, Asian Institute of Technology, Thailand, 1996.
- Bachelor of Engineering, Electrical Power System, SV Regional College of Engineering and Technology, South Gujarat University, India, 1993.

### Key leadership in knowledge community (selected recent activities only)

- *Coordinating Lead Author*, Emission Trends and Drivers (Chapter 2), IPCC's Sixth Assessment Report (WGIII-Mitigation), 2018- 2023
- *Coordinating Lead Author*, Chapter on Human Settlements, Infrastructure and Spatial Planning, IPCC's Fifth Assessment Report (WGIII-Mitigation), 2010- 2014
- Member of Scientific Steering Committee, Global Carbon Project (Future Earth's Core Project- [www.globalcarbonproject.org](http://www.globalcarbonproject.org)), 2014 ~ ongoing
- *Co-Chair of Science Steering Committee*, IPCC's Cities and Climate Change Science International Conference, 5-7 March 2018, Edmonton, Canada, <http://www.citiesipcc.org>.
- Co-Editor, Second International Assessment on Climate Change in Cities (ARC3-2), Urban Climate Change Research Network ([www.uccrn.org](http://www.uccrn.org)), 2012- 2018.
- Member of Global Management Team, Urban Climate Change Research Network, Earth Institute, Columbia University ([www.uccrn.org](http://www.uccrn.org)), 2012-2018
- Coordinating Lead Author for regional energy assessment in Hindu Kush Himalaya titled "[Meeting Future Energy Needs in the Hindu Kush Himalaya](#)", Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP), Coordinated by International Center for Integrated Mountain Development (ICIMOD) 2015-2018.
- Member of Thematic Group (Network 9) on 'Sustainable Cities' of Sustainable Development Solution Network (SDSN): A Global Initiative for the United Nations 2013- 2015.
- Member of Program Committee of Climate and Cities Conference 2017, September 19th-21st, 2017, Potsdam Institute for Climate Impact Research (PIK), Potsdam, Germany, <http://www.ramses-cities.eu/>
- Principal Scientific Reviewer (PSR) of Global Environmental Outlook 5 (GEO-5). United Nations Environmental Program (UNEP), 2011.
- Lead Author, Urban Energy Systems, 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.

### Sample Publications only

*(A total of 16 policy related non-academic publications including policy briefs; 6 development project related reports, 73 peer-reviewed journal papers, 10 books incl edited books, and 22 book chapters)*

#### Books

- Review of Developments in Transport in Asia and the Pacific 2021, Madan B. Regmi, Dorina Pojani, Tim Schwanen, **Shobhakar Dhakal**, and Junyi Zhang. December 2021, UNESCAP, Bangkok ISBN: 9789211208337. <https://www.unescap.org/kp/2021/review-developments-transport-asia-and-pacific-2021>
- United Nations Environment Programme (2021). Making Peace with Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies. Nairobi. <https://www.unep.org/resources/making-peace-nature>. I am one of the 20 co-authors of this 1-year long process of high-level Global Scientific Assessment Report released by UN Secretary General and UNEP Executive Director on 18 February 2021.

- World Climate Research Programme (2019). *Global Research and Action Agenda on Cities and Climate Change Science*. Prieur-Richard, A.H., B. Walsh, M. Craig, M.L. Melamed, M. Colbert, M. Pathak, S. Connors, X. Bai, A. Barau, H. Bulkeley, H. Cleugh, M. Cohen, S. Colenbrander, D. Dodman, **S. Dhakal**, R. Dawson, J. Espey, J. Greenwalt, P. Kurian, B. Lee, L. Leonardsen, V. Masson-Delmotte, D. Munshi, A. Okem, G.C. Delgado Ramos, R. Sanchez Rodriguez, D. Roberts, C. Rosenzweig, S. Schultz, K. Seto, W. Solecki, M. van Staden, and D. Ürge-Vorsatz (Eds.). 31 pp. WCRP Publication No. 13/2019. Available at: <https://www.wcrp-climate.org/WCRP-publications/2019/GRAA-Cities-and-Climate-Change-Science-Full.pdf>.
- Rosenzweig C., W. Solecki, P. Romero-Lankao, S. Mehrotra, **S. Dhakal**, and S. Ali Ibrahim (Ed.) (2018). *Climate Change and Cities- Second Assessment Report of the Urban Climate Change Research Network*, Cambridge University Press, Cambridge, UK. <http://www.cambridge.org/gb/academic/subjects/earth-and-environmental-science/climatology-and-climate-change/climate-change-and-cities-second-assessment-report-urban-climate-change-research-network>
- **Dhakal S.** and M. Ruth (Ed.) (2017). *Creating Low Carbon Cities*, Springer. <https://link.springer.com/book/10.1007%2F978-3-319-49730-3>
- Zusman E., A. Srinivasan, and **S. Dhakal** eds. (2011). *Low Carbon Transport in Asia: Strategies for Optimizing Co-benefits*, London and New York: Routleg. <https://www.routledge.com/Low-Carbon-Transport-in-Asia-Strategies-for-Optimizing-Co-benefits/Zusman-Srinivasan-Dhakal/p/book/9781844079155>
- **Dhakal, S.** (2004). *Urban Energy Use and Greenhouse Gas Emissions in Asian Megacities: Policies for a Sustainable Future*, Hayama, Japan: Institute for Global Environmental strategies.

### Book chapters

- **Dhakal S.** and S. Shrestha (2021). Clean Energy Finance in the Countries of the Association of Southeast Asian Nations (ASEAN). In: Susantono, B., Y. Zhai, R.M. Shrestha, and L. Mo (eds) *Financing Clean Energy in Developing Asia*, Asian Development Bank. Manila. <https://www.adb.org/publications/financing-clean-energy-developing-asia>
- **Dhakal S.** et al. (2019). Meeting Future Energy Needs in the Hindu Kush Himalaya. In: Wester P., Mishra A., Mukherji A., Shrestha A. (eds) *The Hindu Kush Himalaya Assessment*. Springer. [https://doi.org/10.1007/978-3-319-92288-1\\_6](https://doi.org/10.1007/978-3-319-92288-1_6) (over 37,000 downloads as of August 2020)
- **Dhakal S.**, and A. Shrestha (2017). Optimizing Water-Energy-Carbon Nexus in Cities for Low Carbon Development, In *Low Carbon Cities* (Ed. Shobhakar Dhakal and Matthias Ruth), Springer, UK. [https://doi.org/10.1007/978-3-319-49730-3\\_4](https://doi.org/10.1007/978-3-319-49730-3_4) (990 downloads as of August 2020).
- **Dhakal S.** and A. Shrestha (2016). Bangkok, In *Cities on a Finite Planet- Towards transformative responses to climate change* (Ed. Sheridan Bartlett, David Satterthwaite), Routledge, London and New York.
- Bai X., **S. Dhakal**, J. Steinberger, and H. 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.

- **Dhakal S.** (2012). Urban air quality management. *Energizing Sustainable Cities: Assessing Urban Energy* (Ed. Arnulf Grubler and David Fisk), Routleg, London and New York, 2012.

### **Selected Peer-reviewed journal publication in most recent years (total 73)**

- **Dhakal, S.** and M. Pradhan (2023). Identification and prioritization of barriers to access international climate finance for Nepal. *Asia-Pacific Sustainable Development Journal*, 30 (1) 121-146, May 2023. United Nations Economic and Social Commission for Asia and the Pacific. Bangkok.  
<https://www.unescap.org/kp/2023/asia-pacific-sustainable-development-journal-vol-30-no-1-may-2023>.
- Thapa, P., B Mainali, **S. Dhakal** (2023). Focus on Climate Action: What level of synergy and trade-off is there between SDG 13; Climate action and other SDGs in Nepal? *Energies*, 16(1) 566, Elsevier. <https://doi.org/10.3390/en16010566>
- Babiker, M., Bazaz, A., Bertoldi, P., Creutzig, F., De Coninck, H., De Kleijne, K., **Dhakal, S.**, Haldar, S., Jiang, K., Kılıkş, Ş., Klaus, I., Krishnaswamy, J., Lwasa, S., Niamir, L., Pathak, M., Pereira, J. P., Revi, A., Roy, J., Seto, K.C., Singh, C., Some, S., Steg, L., Ürge-Vorsatz, D. (2022). What the latest science on climate change mitigation means for cities and urban areas. Indian Institute for Human Settlements. <https://doi.org/10.24943/SUPSV310.2022>
- Sharmin F., and **S. Dhakal** (2022). A composite energy resilience performance indicator for Bangladesh. *Energy Sources, Part B: Economics, Planning, and Policy*. <https://doi.org/10.1080/15567249.2022.2149901>.
- B. Cai , H. Liu , H. Pan, M. Zhao, T. Zheng, J. Nie , M. Du, **S. Dhakal**. High-resolution accounting of urban emissions in China. *Applied Energy*, 325 (2022) 119896, Elsevier. <https://doi.org/10.1016/j.apenergy.2022.119896>
- Champeecharoensuk, T., P. Abdul Salam, **S. Dhakal**, N. Chollacoop (2022). Key Driver Analysis of Greenhouse Gas Emissions in Thailand's Public Bus Transport with Comparative Study on Metropolitan Bangkok Hotspots. Accepted for publication to *Energy for Sustainable Development*, 70 (October 2022), 456-465, Elsevier. <https://doi.org/10.1016/j.esd.2022.08.019>
- Khan M. R. and **S. Dhakal** (2022). Do experts and stakeholders perceive energy security issues differently in Bangladesh? *Energy Strategy Review*, 42 (July 2022), 100887. <https://doi.org/10.1016/j.esr.2022.100887>
- Aryal, S., and **S. Dhakal** (2022). Medium-Term Assessment of Cross Border Trading Potential of Nepal's Renewable Energy Using TIMES Energy System Optimization Platform, *Energy Policy*, 168 (Sept 022), 113098. <https://doi.org/10.1016/j.enpol.2022.113098>
- **Dhakal, S.**, J.C. Minx, F.L. Toth, A. Abdel-Aziz, M.J. Figueroa Meza, K. Hubacek, I.G.C. Jonckheere, Yong-Gun Kim, G.F. Nemet, S. Pachauri, X.C. Tan, T. Wiedmann, 2022: Emissions Trends and Drivers. In IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley,

- (eds.]). Cambridge University Press, Cambridge, UK and New York, NY, USA.  
<https://doi.org/10.1017/9781009157926.004>.
- **Dhakal, S.**, P. Karki and S. Shrestha (2021). Cross-border Electricity Trade for Nepal: A SWOT-AHP analysis of barriers and opportunities based on stakeholders' perception, *International Journal of Water Resources Development* 37(3)559–580.  
<https://doi.org/10.1080/07900627.2019.1648240>
  - Chen, S., K. Fang, **S. Dhakal**, A. Kharrazi, K. Tong, A. Ramaswami (2021). Reshaping urban infrastructure for a carbon-neutral and sustainable future. *Resources, Conservation and Recycling*, 2021, 174, 105765.  
<https://doi.org/10.1016/j.resconrec.2021.105765>.
  - Seeley, C.C. and **S. Dhakal** (2021). Energy Efficiency Retrofits in Commercial Buildings: An Environmental, Financial, and Technical Analysis of Case Studies in Thailand, Thailand. *Energies* 14(9), 2571. <https://doi.org/10.3390/en14092571>.
  - Khamchiangta, D. and **S. Dhakal** (2021). Future urban expansion and local climate zone changes in relation to land surface temperature: case of Bangkok Metropolitan Administration, Thailand, *Urban Climate* 37, 100835  
<https://doi.org/10.1016/j.uclim.2021.100835>
  - Seeley, C.C. and **S. Dhakal** (2021). Energy and CO2 Emission Reduction Potential from Investment in Energy Efficiency Building Retrofits in Bangkok, Thailand. *International Journal of Sustainable Energy (published online 1 April 2021)*.  
<https://doi.org/10.1080/14786451.2021.1906244>
  - Ramaswami, A., K. Tong, J. G. Canadell, R. B. Jackson, E. Stokes, **S. Dhakal**; M. Finch; P. Jittrapirom, N. Singh, Y. Yamagata, E. Yewdall and L. Yona (2021). Carbon analytics for net-zero emissions sustainable cities, *Nature Sustainability* 4(6)460–463. <http://doi.org/10.1038/s41893-021-00715-5>.
  - Lamb, W. F., T. Wiedmann, J. Pongratz, R. Andrew, M. Crippa, J.G.J. Olivier, D. Wiedenhofer, G. Mattioli, A. Al Khourdajie, J. House, S. Pachauri, M. Figueroa, Y. Saheb, R., K. Hubacek, L. Sun, S. K. Ribeiro, S. Khennas, S. Rue Can, L. Chapungu, S. J. Davis, I. Bashmakov, H. Dai, **S. Dhakal**, X. Tan, Y. Geng, B. Gu, J. Minx (2020). A review of trends and drivers of greenhouse gas emissions by sector from 1990 to 2018. *Environmental Research Letters* 16 (7), 073005.  
<https://iopscience.iop.org/article/10.1088/1748-9326/abee4e>
  - Khamchiangta, D. and **S. Dhakal** (2020). Time series analysis of land use and land cover changes related to urban heat island intensity: Case of Bangkok Metropolitan Area in Thailand. *Journal of Urban Management*, 9(4), pp. 383-395. DOI:  
<https://doi.org/10.1016/j.jum.2020.09.001>
  - Chanthawong, A., **S. Dhakal**, J. Kuwornu and K. Farooq (2020). Impact of subsidy and taxation related to biofuels policies on the economy of Thailand: A dynamic CGE modelling approach, *Waste and Biomass Valorization*, 11(3), pp. 909-929.  
<https://doi.org/10.1007/s12649-018-0417-4>.
  - Kaneko, S., K. Murakami, **S. Dhakal**, and A. Sharifi (2020). Changes in per capita CO2 emissions of six large Japanese cities between 1980 and 2000: an analysis using "The Four System Boundaries" approach, *Sustainable Cities and Society*, 52. 101784.  
<https://doi.org/10.1016/j.scs.2019.101784>
  - Haque, H.M.E., **S. Dhakal** and S. M.G. Mostofa (2020). An assessment of Opportunities and Challenges for Cross-border Electricity Trade for Bangladesh



using SWOT-AHP Approach. *Energy Policy*, 137, 111118.  
<https://doi.org/10.1016/j.enpol.2019.111118>

### Selected policy briefs, journalistic writing, and other publications

- Le Quéré, C., Jo Clarke, **S. Dhakal**, C. Goodess, A. Shrestha, M. Tebboth, C. Sutherland (2019). *Foundations for climate resilient and sustainable growing settlements (U-RES)*. Tyndall Center Working Paper. University of East Anglia, Norwich, UK.
- (Policy Brief) **Dhakal, S.**, A. Shrestha, S. Singhal, S. Moloney, P. Vaughter, R. Darnsawadi, S. M. Kim, C. Pharino, E. Haryono (2018). *Tracking Climate Actions for Climate Compatible Development in Cities*. Prosper.Net Policy Briefs, United Nations University, Tokyo.
- (Policy Brief) **Dhakal, S.**, A. Shrestha, S. Singhal, S. Moloney, P. Vaughter, R. Darnsawadi, S. M. Kim, C. Pharino, E. Haryono (2018). *Transitioning Towards Climate Compatible Cities*. Prosper.Net Policy Briefs, United Nations University, Tokyo.
- (Science-Society Journalism) **Dhakal, S.** (1 December 2016) *We can cut emissions in half by 2040 if we build smarter cities*. **The Conversation**, Australia. Republished by several news-outlets worldwide. <https://theconversation.com/we-can-cut-emissions-in-half-by-2040-if-we-build-smarter-cities-67499>;
- (Policy Brief) **Dhakal, S.**, Shrestha, S., Shrestha, A., Kansal, A., & Kaneko, S. (2015). *Towards a better water-energy-carbon nexus in cities* (APN Global Change Perspectives Policy Brief No. LCD-01). Kobe: Asia-Pacific Network for Global Change Research. <http://www.apn-gcr.org/2015/10/26/policy-brief-towards-a-better-water-energy-carbon-nexus-in-cities-lcd-01/>

### Selected keynotes and invited talks (115 talks including keynotes, invited speaker and panelist during 2023-2012- detailed list available)

- **Keynote Speaker** on “Why cities are crucial for the global climate change mitigation?”, Health in a Changing Climate Forum, Organized by Warrnambool City Council, Victoria State Government, and Barwon South-West Climate Alliance, Australia, 25 May 2023. <https://www.lighthouse theatre.com.au/health-changing-climate-forum>
- **Guest Speaker** on “Emissions and Mitigation Potentials of Cities in pathways towards the 1.5°C world”, The 2023 International Symposium on Just Transition towards Dec-carbonized Urban Systems, 11 February 2023, Organized by Academia Sinica and Future Earth Taiwan Hub, Academia Sinica Conference Hall, Taipei, Taiwan. <https://futureearth.org/event/2023-intl-symposium-of-just-transition-toward-de-carbonized-urban-systems/>
- **Keynote Speaker** on “Rapid Renewable Energy Transition: Where do we stand and how to move forward?”, International Conference 100% Renewable Energy Policy Practice and Experience, Organized by 100% RE multi-sector partnership and the Alternate Energy Promotion Center (AEPC), 18-19 December 2022, Kathmandu, Nepal.

- **Invited Speaker** on “Innovations and technology applications for clean and renewable energy transition in cities” at the International Conference on Innovation, Technology Transfer and Cooperation for Addressing Climate Change, Organized by Asian and Pacific Center for Transfer of Technology (APCTT) of UNESCAP, 6 December 2022, United National Conference Center, Bangkok.
- **Invited Keynote** Talk on “Role of transforming lifestyle for energy transition towards the net-zero-emissions world”, 38th United National University Global Seminar: Energy Sustainability in the Anthropocene- Transforming Lifestyles for Carbon Neutrality, 4 December 2022 13:00–13.30 (JST), Tokyo, Japan.
- **Invited Panelist** a global webinar by PLOS Climate Journal on “Dissecting the outcomes of COP27” (Panelists: Anjal Prakash- Bharti Institute of Public Policy, Indian School of Business, Géraldine Pflieger- Institute of Environmental Science, University of Geneva, Viktoria Spaiser- University of Leeds, Shobhakar Dhakal- Asian Institute of Technology, Nana Klutse- University of Ghana; Moderated by Emma Archer- PLOS Climate Editor-in-Chief and Jamie Males- PLOS Climate Executive Editor. Dec 2 Friday, 2022 11:00 AM in GMT.
- **Invited Speaker** at UNFCCC COP27 on “Global emissions trends amidst enormous mitigation challenges” at the side event titled Current status and future perspectives on greenhouse gas emission mitigation and impacts, 8 November 2022 (1300-1430 EET), Japan Pavilion, Sharm El Sheikh, Egypt. Organized and invited by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC)’s Research Institute for Global Change (RIGC).
- **Invited Speaker** on “Cross border trading potential of Nepal’s renewable electricity in the context of energy security and climate mitigation”. International Conference on Global Integrated Assessment Model (IAM) Development, organized by Yonsei University, October 14, 2022 at Korea Press Center, 18th Floor, The Seoul Foreign Correspondents' Club, Seoul.
- **Invited Seminar** on “Emission trends and call for action in the context of climate change - key messages from IPCC AR6” to Indian Institute of Technology Guwahati, 16 September 2022, 12 noon IST (online).
- **Invited speaker** for Global Leaders Forum 2021 on the session “Energy Transformation and Carbon Neutrality 2050”, Organized by TV CHOSUN and K-Policy Platform, South Korea. This is a very high level event ([http://glfchosun.com/en/sub/sub03\\_01.php](http://glfchosun.com/en/sub/sub03_01.php)) attended by Prime Minister of South Korea and major global policy makers, 23 November 2021, Seoul, South Korea(online).
- **Invited moderator** for online session on “Are universities doing enough to ensure climate resilience?”, Times Higher Education (THE) Campus Live Asia 2021, 14th December 2021 (Online).
- **Invited speaker** delivering talk on Interaction of Urban Energy Systems and Infrastructure with Climate Change Mitigation at session Energy Transition and Low Carbon Green Development of 7th Asia Pacific Sustainable Energy Forum, Invited

- and organized by Asia Pacific Sustainable Energy Center (APSEC) of Asia Pacific Economic Cooperation (APEC), 15-17 September 2021, Tianjin, China (online).
- **Invited speaker** on Climate Change Mitigation in the Decade to 2030, Osaka University Anniversary Lecture Series: Climate Science in the Context of the SDGs: What to expect in the next decade, Osaka University, Osaka, Japan, 8 June 2021 (online).
  - **Invited talk** on “Mitigation Potentials and Strategies for Urban Transport in Asia and the Pacific” Virtual Regional Workshop on Urban Mobility and Impacts of COVID-19 on Mobility, 25-26 November 2020, United Nations Economic and Social Commissions for Asia and the Pacific, Bangkok.
  - **Invited Guest Lecture** and Seminar on “Science-policy interface: the IPCC assessments delivering science for policy makers”, 24 September 2020, Dept. Of Built Environment and Energy Technology, Linnaeus University, Sweden (online).
  - **Invited talk** on “Mitigation potentials and strategies for transport in Asia and the Pacific”, Virtual Expert Group Meeting on Climate Change Mitigation and Adaptation in Transport, 22-23 September 2020, United Nations Economic and Social Commissions for Asia and the Pacific, Bangkok.
  - **Invited talk** on “Renewable Energy Development in Thailand”, Workshop on Energy Transition and Scaling-up Renewable Energy (Online Event), 10,00-16.40 hours, 17 September 2020, Organized by APEC Sustainable Energy Center at Tianjin University, China. Asia Pacific Economic Cooperation (APEC).
  - **Invited talk** on “High Proportion Solar PV Utilization: Thailand”. The Approach to Increase the Share of Solar PV Capacity in ASEAN Warm up Seminar for China-ASEAN Clean Energy Capacity Building Programme 2020, SNEC 2020 PV Power Expo, Shanghai, 8 August 2020 (14:00-17:30 pm (GMT+8) organized by China Renewable Energy Institute and ASEAN Energy Center.
  - **Invited Speaker** on “Perspectives on infrastructure financing in Asia” at the Asian Development Bank book launch event alongside ADB Vice President, Infrastructure Financing in Asia, Robert B. Banks Auditorium, Asian Institute of Technology, 25 November 2019, Thailand.
  - **Keynote speaker** on “Urban resilience: Challenges and future pathways in Asia” at Leaders Dialogue session ‘Urban Resilience: Safeguarding and accelerating the achievement of the SDGs at the 7<sup>th</sup> Asia Pacific Urban Forum, Setia SPICE Convention Center, Penang, Malaysia.
  - **Invited Speaker** on “Energy transition in the context of SDGs and the Paris Agreement and the need for an integrated planning approach” at The Fourteenth Policy Consultation Forum of the Seoul Initiative Network on Green Growth: Enhancing and implementing NDCs with ambition and transparency” Asia Pacific Climate Week, UN Conference Center, Bangkok, Thailand, 2-3 September 2019.
  - **Invited Speaker** on “Opportunities for Developing Activities in Urban Carbon Sphere”, Annual Steering Committee Meeting of the Global Carbon project and Urban Data Workshop, 23-27 June 2019, Humphrey School of Public Affairs, University of Minnesota, Minneapolis, USA.

- **Panelist** on “Solar Investment: The Trillion Dollar Opportunity” 28 May 2019, 12:30-14:30 hrs, Public Foyer, United Nations Conference Centre Bangkok, organized by International Solar Alliance (ISA). Panel discussions together with Regional Director and Representative of the UNEP Asia and the Pacific Office, Director, Energy Division, ESCAP, and Director of Southeast and South Asia, Global Energy Interconnection Development and Cooperation Organization (GEIDCO).
- **Invited Speaker** on “Connecting Asia: the benefits and challenges of regional grids”, Closed door parliamentary dialogue titled *Green grids: connecting Asia*, 28-30 March 2019, Organized by UK Foreign and Commonwealth Office and Climate Parliament, Wilton Park, Steyning, UK.
- **Invited Speaker** on “Developing Asia-Pacific regional capacity in energy and resource modeling”, Workshop on Energy Planning Tool and Asian-Pacific Integrated Resources/Energy Modelling Platform, Organized by UNDP and A UNDP, and KTH-Sweden in partnerships with UN-DESA and UNESCAP, 21 March 2019, UN Conference Center, Bangkok.
- **Panelist** on ‘Role of Digital Technologies and Blockchain for Climate Protection’. Consultation Workshop on Digital Technologies for Advancing Food Security, Climate Action and Environmental Sustainability, Organized by Asian Development Bank, Courtyard by Marriott Hotel, 14-15 March 2019, Bangkok.
- **Invited Talk** on Key Findings of the Energy Future and Security in HKH Assessment, Launching and Media Dialogue of the Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People, 4 February, 2019, Venue: Main Conference Hall, ICIMOD, Kathmandu.
- **Panelist** on Systems Transition for Deep Decarbonisation, IPCC-CEEW Conference on ‘Road to the IPCC Sixth Assessment Report: Fostering deeper engagement with industry, finance and civil society stakeholders’, 15 January 2019, Desire Hall, Le Meridian Hotel, New Delhi.
- **Keynote Presentation**, The Future of Urban Governance and Capacities for Resilient Cities, Expert Group Meeting on the Future of Urban Governance and Capacities for Resilience, Friday 23rd November 2018, Meeting Room A, United Nations Conference Centre, Bangkok, Thailand.
- **Invited panelist and statement**, *Climate science, IPCC and key issues for Asia*, Agenda Item 2: Environmental challenges in the context of the implementation of the 2030 Agenda for Sustainable Development (21<sup>st</sup> Nov), Committee on Environment and Development, Fifth Session, 21-23 Nov 2018, United Nations Conference Centre, CR2, Bangkok, Thailand.
- **Invited Talk**, *De-carbonization Benefitting from Improving Renewable Energy’s Economics and Better Knowledge on Co-benefits*, Tenth meeting of the Research Dialogue (RD 10) of SBSTA of UNFCCC, 3 May 2018, Dialogue Room Santiago de Chile, World Conference Centre Bonn, Germany.
- **Plenary Keynote Talk**: *Rapid transition to low carbon cities: reflections from past assessments*, Cities & Climate Change Science Conference, March 5-7, 2018, Edmonton, Canada (<https://citiesipcc.org/>)
- **Invited expert**, *Regional Partners Forum @Quito+1, Strategies and Priorities for the Implementation of the NUA in Asia and the Pacific*, 28-29 November 2017, Bangkok, Thailand, Hosted by UNESCAP and UN-Habitat.

- **Invited Talk** *Energy situation in the HKH: Results from the HIMAP Assessment*, Workshop on “Hydropower-based collaboration in South Asia: Socio-economic development and electricity trade”, Organized by Institute of Water Policy (IWP) of Singapore National University and International Centre for Integrated Mountain Development (ICIMOD), ICIMOD, Kathmandu, 21-22 November 2017.
- **Keynote Speech** on *Low Carbon Cities: Knowledge and Action Gaps and Opportunities for Asia*, 6th Annual Meeting of Low Carbon Asia Research Network (LoCARNet), Century Park Hotel Bangkok, 1-3 November 2017, Bangkok, Thailand
- **Organizer and speaker** on *Urban design and sustainable buildings*, Global Science, Technology & Innovation Conference, 23-25 October 2017, Belgium.
- **Plenary keynote** on *Deep De-carbonization in 1.5 Degree World: Why cities are crucial?* Climate and Cities Conference 2017, 19-21 September, Potsdam Institute for Climate Impacts Research, Potsdam, Germany.
- *Urbanization, cities and GHG emissions*, 16th Meeting of the Scientific Steering Committee, Global Carbon Project, 18-20 August 2017, Hotel City Oberland, Interkalen, Switzerland.
- **Panelist**, Workshop on Coal in Asia: The Challenge for Policy and the Promise of Markets, June 8th 2017, Singapore, Hilton Hotel, 581 Orchard Road, Singapore, Organized by King Abdullah Petroleum Studies and Research Center of Kingdom of Saudi Arabia.
- **Panelist and Speaker, High Level Panel on Sustainable Cities and Communities**, Vienna Energy Forum, Organized by UNIDO, IIASA, Austria Development Agency, SEE4ALL and Europe Integration Foreign Affairs of Republic of Austria, 11 – 12 May 2017, Hofburg Palace, Vienna.
- **Invited Expert** to deliberate on to prepare IPCC’s AR6 Scoping Document, AR6 Scoping Meeting, Inter-Governmental Panel on Climate Change (IPCC), 1-5 May 2017, Addis Ababa, Ethiopia.
- **Invited talk** on *Data sources for urban emissions*, Workshop on Decoupling in Workshop on Decoupling in Asia: An Infrastructure Transition Perspective, 15-17 March 2017, Organized by China-ASEAN Environmental Cooperation Center (CAEC) and the UN Environment’s International Resource Panel, Jintai Hotel, Beijing.
- *Green growth framework for national and city levels*, Workshop on Green Growth and Cities 16-18 January 2017, Institute of Advanced Studies, Lehmkuhlenbusch 4, 27753 Delmenhorst, Germany.
- *IPCC AR5: Key finding of AR5 for the ASEAN region*. IPCC Media Workshop and Press Conference, 14 October 2016. Novotel Siam Square Hotel, Bangkok. Organized by IPCC and Office of Natural Resources and Environmental Policy and Planning of Government of Thailand.
- **Panelist: Panel on Science-Policy Interface Dialogue on Actions and Implications**, IPCC Outreach Workshop on IPCC Role, Activities and Findings. 15 October 2016, Novotel Siam Square Hotel, Bangkok. Organized by IPCC and Office of Natural Resources and Environmental Policy and Planning of Government of Thailand.
- **Keynote Talk: 1.5° C Climate Stabilization: Needs for Science-Policy-Society interfacing**, The International Conference on Climate Change, Biodiversity and

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- Ecosystem Services for Sustainable Development Goals: Policy and Practice, 27-29 June 2016, The Sirindhorn International Environmental Park, Cha-am, Thailand
- **Panelist:** *Media's role in addressing climate change in an unprecedented era*, Panel Discussions on Climate Change Adaptation: Media for Disaster Literacy, 2<sup>nd</sup> Media Summit on Climate Change and Disaster Risk reduction, Asia Pacific Broadcasting Union, 12-14 May 2016, Krabi, Thailand