Webinar Series

Disease Resilient and Energy-Efficient Centralized Air-Conditioning Systems

Session Coordinated by ADB TA 6563

Webinar 1 - Disease Resilience and Indoor Air Quality

Date:1st September 2021
Time: 4.00– 5.30 PM
(Manila Time – GMT +08.00 Hours)

Background

Studies show that transmission of viruses, such as the coronavirus causing COVID-19, can be prompted by air-conditioned ventilation. In developing member countries (DMC), the risks of virus transmission are higher because of poor hygiene including the use of old air-conditioning equipment, lack of regular maintenance, and overcrowding in closed spaces. Additionally, inefficient centralized air-conditioning (CAC) systems in many DMCs account up to 50% of energy consumption in public buildings. Advanced air-conditioning systems with energy-saving technologies used in combination with demand-side management techniques could bring up to 45% energy savings. CACs also rely heavily on hydrofluorocarbons (HFCs), a greenhouse gas potentially thousands of times more potent than carbon dioxide. Proper management of HFCs are critical to addressing greenhouse gas emissions from CAC systems.

The Asian Development Bank (ADB) is implementing a knowledge and support technical assistance (TA), Regional Support to Build Disease Resilient and Energy Efficient Centralized Air-conditioning Systems, to promote disease-resilient clean energy development in developing member countries of ADB. The TA supports DMCs of ADB to improve energy efficiency, mitigate the risks of virus transmission, and ensure safe working conditions in public buildings by deploying efficient, clean, and smart CAC systems. This webinar series on Disease Resilient and Energy-Efficient Centralized Air-Conditioning Systems is one of the activities supported by this TA.

Objective

First among the webinars in this series, this Webinar 1 – Disease Resilience and Indoor Air Quality aims to increase awareness towards strengthening disease resilience and indoor air quality in buildings with centralized air-conditioning systems in ADB developing member countries. Speakers will talk about health and indoor air quality in buildings, technologies, regulations, and other approaches to ensure safety in indoor spaces in ADB developing member countries especially during a pandemic.

Registration of the event

https://adb-org.zoom.us/webinar/register/WN_FKgzC78sSS6v6eetlZmQrw

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Agenda

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Time	Topic	Speaker
4.00-04:05	**Opening Session:** Welcome Address	Priyantha Wijayatunga, Chief of Energy Sector Group, ADB
4.05-04:15	**Introduction to TA 6563:** Introducing TA-6563: Regional Support to Build Disease Resilient and Energy Efficient Centralized Air-conditioning Systems	Jinmiao Xu, Energy Specialist, Energy Sector Group, Sustainable Development and Climate Change, ADB
4.15-04:30	**Expert Address 1:** Overview of Disease Resilient and Energy Efficient Centralized Air-conditioning Systems	Richie Mittal, Managing Director, Overdrive Engineering Pvt Ltd
4.30-04:45	**Expert Address 2:** Indoor Air Quality in Buildings	Donald M Weekes Previous Partner at InAIR Environmental Ltd
4.45-05.00	**Expert Address 3:** Indoor Air Quality Health and Control Technologies – Active and Passive	William Bahnfleth Professor, Architectural Engineering, Pennsylvania State University
5.00-05:15	**Expert Address 4:** Indoor air quality, a regulatory "no man's land"– how to change this?	Lidia Morawska Distinguished Professor, Queensland University of Technology,
5:15-5:30	**Question and Answer Session:** Question and Answer from participants, Closing Remarks	Yashkumar Shukla, Executive Director, Center for Advanced Research in Building Science and Energy, CEPT University

Speakers

Priyantha Wijayatunga
Chief of Energy Sector Group,
Asian Development Bank

Dr. Priyantha D C Wijayatunga holds a degree in Electrical Engineering from Sri Lanka and a PhD in Power Economics from Imperial College London where he was a Beit Scientific Research Fellow. He joined the Asian Development Bank in 2008 and was Director of South Asia Energy Division before he was appointed as the Chief of Energy Sector Group in August of 2021. He has contributed extensively in energy sector policy and regulatory activities over 25 years and has co-authored over 75 publications. He was the founder Director General of the Public Utilities Commission of Sri Lanka and was a lead author of the Sri Lanka Energy Policies and Strategies and the Sri Lanka Initial National Communication on Climate Change. He served as a Senior Professor of Electrical Engineering and the Chairman of South Asia Forum for Infrastructure Regulation. He is a Member of Institute of Engineering Technology (IET), London, a Fellow of the Institution of Engineers Sri Lanka. He is also a Senior Member of the Institution of Electrical and Electronic Engineers (IEEE).

Jinmiao Xu
Energy Specialist,
Energy Sector Group, Sustainable Development and Climate Change, ADB

Mr. Xu has more than 16 years of experience in energy field. He is responsible for CCUS related work in Energy Sector Group of Sustainable Development and Climate Change Department (SDSC-ENE) and process and administer regional technical assistance, focusing on CCUS, low carbon energy technical roadmap and advanced centralized air conditioning system. His expertise includes energy and environmental technologies, policies, and programs. He received BS (2005) in Environmental Engineering from North China Electric Power University, and MS (2011) in Thermal Engineering from Tsinghua University.

Richie Mittal
Managing Director, Overdrive Engineering Pvt Ltd

Richie Mittal is Director of OVERDRIVE Engineering Pvt Ltd, a company specializing in Energy Efficient Design, Passive and Engineering in Air conditioning and cooling system, Indoor Air Quality and Geothermal for ENCLOSED FACILITIES., Energy Audit, Green Building, Third Party Commissioning and TAB (Testing, Adjusting & Balancing). He is Graduate engineer from BIT Mesra in 1983 and Master of Engineering from Delhi College of Engineering in 1984.

He has experience of 37 years in this industry and also is guest lecturer in many Engineering colleges including IIT.

Presently, he is Director & Regional Chair (Region at Large) at ASHRAE, Board of Director – Indoor Air Quality Association Inc (USA), Immediate Past President of

	ISHRAE , Founder Member – International Ground Source Heat Pump Association (USA)- India Chapter IGSHPA, Chair– Research in ASHRAE for TC 5.7 for Evaporative Cooling, Member - R&D Project Sectorial Appraisal Committees (RDSPAC) for Ground Source Heat Pumps (GSHP's) of MNRE (Ministry of New & Renewable Energy), Technical Committee – GRIHA and Ttechnical Advisor in TERI.
	William Bahnfleth Professor, Architectural Engineering, Pennsylvania State University William Bahnfleth is a professor of architectural engineering at the Pennsylvania State University. He held previous positions as Senior Consultant for ZBA, Inc. in Cincinnati, OH and Principal Investigator at the U.S. Army Construction Engineering Research Laboratory in Champaign, IL. He holds BS, MS, and PhD degrees in Mechanical Engineering from the University of Illinois and is a registered professional engineer. At Penn State, Dr. Bahnfleth teaches undergraduate courses in HVAC fundamentals and system design, and graduate courses in district cooling systems and indoor air quality. His research interests cover a wide variety of indoor environmental control topics including chilled water pumping systems, stratified thermal energy storage, protection of building occupants from indoor bioaerosol releases, and ultraviolet germicidal irradiation systems. He is the author or co-author of more than 170 technical papers and articles and 14 books and book chapters. Dr. Bahnfleth is a fellow of ASHRAE, the American Society of Mechanical Engineers (ASME) and the International Society for Indoor Air Quality and Climate (ISIAQ). He served as President of ASHRAE in 2013-2014 and currently chairs its Epidemic Task Force. His ASHRAE honors include the Louise and Bill Holladay Distinguished Fellow Award, E.K. Campbell Award, and F. Paul Anderson Award. He is also a recipient of the Penn State Engineering Alumni Society's World-Class Engineering Faculty Award and a Penn State Exemplary Designation for Faculty Outreach.
	Donald M Weekes Previous Partner at InAIR Environmental Ltd Mr. Weekes has over forty-five (45) years of comprehensive consultation expertise and project experience in the implementation and management of inspections for hazardous materials in numerous buildings throughout Canada and the United States including universities, colleges, governmental offices, and commercial and residential buildings. During the course of Mr. Weekes' career, he has served in numerous senior management positions in both the consulting and insurance industries. He has provided consultation services, including health and safety audits and environmental air sampling, to a wide variety of facilities in the utility, chemical, petroleum, petrochemical, and pharmaceutical industries. He has also worked with numerous governmental entities at local, state, provincial, and federal levels. As a Certified Industrial Hygienist (CIH) and a Certified Safety Professional (CSP), Mr. Weekes has served as an environmental health and safety professional for various international corporations. He has worked as a consultant for firms in the United States, Canada, Great Britain, Germany, France, Finland, and Switzerland.

	His extensive capabilities in health and safety audits have enabled him to work in facilities involved with manufacturing, warehousing and logistics. Mr. Weekes has retired from consulting on a full-time basis. In his career, Mr. Weekes has provided expert guidance on all of the technical aspects of projects involving occupational health and safety assessments, indoor air quality, asbestos, LEED IEQ credit certification, lead paint, mould, and drinking water sampling.
	Lidia Morawska Distinguished Professor, Queensland University of Technology, Lidia Morawska is Distinguished Professor at the Queensland University of Technology in Brisbane, Australia, and the Director of the International Laboratory for Air Quality and Health at QUT, which is a Collaborating Centre of the World Health Organization on Research and Training in the field of Air Quality and Health. Lidia also holds positions of Adjunct Professor, Institute for Environmental and Climate Research (ECI), Jinan University, Guangzhou, China, of Vice-Chancellor Fellow, Global Centre for Clean Air Research (GCARE), University of Surrey, UK, and is a co-director of the Australia-China Centre for Air Quality Science and Management She conducts fundamental and applied research in the interdisciplinary field of air quality and its impact on human health and the environment, with a specific focus on science of airborne particulate matter. She is a physicist and received her doctorate at the Jagiellonian University, Krakow, Poland for research on radon and its progeny. An author of over eight hundred journal papers, book chapters and refereed conference papers, Lidia has been involved at the executive level with a number of relevant national and international professional bodies, is a member of the Australian Academy of Science and a recipient of numerous scientific awards.
	Yashkumar Shukla Executive Director, CARBSE, CEPT University Dr. Yashkumar Shukla is Executive Director at Centre for Advanced Research in Building Science and Energy (CARBSE) at CEPT University, India. He has more than fifteen years of international experience in building energy-efficiency research and serves as a lead on several groundbreaking energy-efficiency research projects at CARBSE. He currently serves as a team lead of the technical assistance (TA) program by the The Asian Development Bank (ADB) that supports developing member countries to improve energy efficiency, mitigate the risks of virus transmission, and ensure safe working conditions in public buildings by deploying efficient, clean, and smart centralized air-conditioning (CAC) systems.

About the Organizer

Asian Development Bank

The Asian Development Bank (ADB) was conceived in the early 1960s as a financial institution that would be Asian in character and foster economic growth and cooperation in one of the poorest regions in the world. ADB assists its members, and partners, by providing loans, technical assistance, grants, and equity investments to promote social and economic development. ADB is composed of 68 members, 49 of which are from the Asia and Pacific region.

About the Technical Assistance Donors

High-Level Technology Fund

The High-Level Technology (HLT) Fund is a multi-donor trust fund established in 2017 with the Government of Japan as the first donor. It provides grant financing to promote the integration of HLT and innovative solutions into ADB-financed and administered sovereign and nonsovereign projects throughout the project cycle—from identification to implementation and operation. The fund encourages more widespread adoption of HLT to address development challenges in ADB developing member countries.

Clean Energy Fund (CEF) under the Clean Energy Financing Partnership Facility

The Clean Energy Fund (CEF) under the Clean Energy Financing Partnership Facility (CEFPF) was established in 2007 to help developing member countries of the Asian Development Bank (ADB) improve their energy security and decrease the rate of climate change through increased use of clean energy. The CEF is supported by the Governments of Australia, Norway, Spain, Sweden, and the United Kingdom.