

ASIA CLEAN ENERGY FORUM 2019

PARTNERING FOR IMPACT

17-21 June 2019 | Manila



Deep Dive Workshop

Friday 21 June 2019, 9:00 a.m. – 5:00 p.m.

Auditorium B

Regional Cooperation and Integration (RCI) for Cross-Border Energy Markets



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Background

Regional Cooperation and Integration (RCI) is a process by which a group of countries actively cooperate to achieve common goals for mutual benefit. This facilitates market-driven regional integration and the generation of regional public goods. The Asian Development Bank (ADB) and its development partners across Asia and the Pacific recognize that RCI can be a powerful mechanism for unlocking the vast energy and energy trade potential in the Asia and the Pacific for the benefit of its people. However, limited inter-country cooperation and integration of the region's energy sector constrains a greater supply of affordable and sustainable energy and thus broader economic development, yet there is an evolving experience of successful RCI in the context of the energy sector outside the Asia and Pacific Region. It is now timely for ADB and the region to consider how RCI can be applied more widely and successfully to the energy sector and energy trade, including renewable energy, for the benefit of the region's future development.

Objective

The objective of this one-day 'Deep Dive' workshop on RCI for cross-border energy markets is to develop clearer understandings and consider future directions in relation to:

- (i) emerging cross-border trends in the energy sector in Asia;
- (ii) experience/lessons-learned with cross-border energy markets in Asia and elsewhere;
- (iii) opportunities, challenges and priorities for further development of cross-border energy markets and energy trade in Asia, including conventional and renewable energy sources;
- (iv) planning, cooperating and scaling-up investment in new cross-border energy projects in Asia and the Pacific - roles of the public/private sectors and development partners; and
- (v) how to move forward implementing a stronger RCI/cross-border focus in ADB's operations in the energy sector.

ACEF 2019 participants will benefit from the knowledge and experience of select experts and resource persons in relation to a range of policy, institutional, technical, and investment opportunities for bringing greater regional cooperation and integration to the region's energy sector. ACEF 2019 participants will hear how other developing regions such as the Latin America and Caribbean and southern Africa established cross-border power markets. ACEF 2019 participants from the Asia-Pacific region will gain insights on policies, institutions, regulations, and technologies helpful for considering the establishment of power pools and expanding energy

trade, including renewable energy, within their respective subregions. And there will be opportunity to consider how ADB and other development partners could assist countries in the region to plan and implement an expansion of cross-border energy trade, for mutual benefit.

Agenda

9:00 – 9:15 a.m.	 <p>Welcome and Introductory Remarks to the Deep Dive Workshop</p> <p>Mr. Arjun Goswami, Chief, Regional Cooperation and Integration (RCI) Thematic Group, ADB</p> <p>Mr. Goswami holds a degree in Law (Juris Doctor) from the American University; a Master of Law degree (Public International Law) from Cambridge University; a Master of Arts degree (Modern History) from Oxford University; and a Master of Science Certificate in Financial Management from the School of Oriental and African Studies, London University. With 21 years in ADB in both operations and knowledge and a decade of RCI experience, he brings strategic direction and a focus on innovation and quality for future RCI work by ADB.</p>
9:15 – 9:25 a.m.	<p>Regional Cooperation and Uzbekistan in the Field of Energy</p>  <p>His Excellency, Mr. Sherzod Khodjaev Khikmatullaevich, Deputy Minister of Energy of the Republic of Uzbekistan</p> <p>Mr. Khikmatullaevich studied at the Tashkent State Technical University. He started his career at the Ministry of Energy in Uzbekistan as an engineer-programmer. Over the past two decades he has continuously assumed greater and more diverse responsibilities in more senior positions, becoming a Lead technical specialist, later Head of Department, Deputy Director and later Director, before becoming the Deputy Minister of Energy. He has been awarded the “25 years of Independence” pin.</p>
9:25 – 9:45 a.m.	<p>Session I: Emerging Cross-Border Trends in the Energy Sector in Asia</p> <p>This Session will present key findings of an ADB-supported Assessment of regional and global trends impacting the energy sector in the Asia-Pacific region, with a view to expanding cross-border energy markets and trade. It will identify some of the trend’s important implications for investing in new technologies, including ‘green’ technologies, as well the kinds of cooperation and collective action that are supportive of cross-border energy investment and trade.</p> <p>Presentation:</p>  <p>Mr. Yongping Zhai, Chief, Energy Sector Group, ADB</p> <p>Mr. Zhai has been working on energy development in Asia and Africa for more than 25 years. He is currently Chief of Energy Sector Group of Asian Development Bank (ADB), in charge of overall energy policy coordination and technical support to ADB energy sector operations. He is also in charge of developing energy sector knowledge work for ADB and interacts with worldwide energy sector partners.</p>
9:45 – 10:45 a.m.	<p>Session II: Experience/Lessons-Learned with Cross-Border Energy Markets</p> <p>This Session considers the experience of regions outside Asia (e.g., Latin America, Southern Africa) with establishment and management of cross-border energy markets and power pools, and identification of key lessons-learned from that experience. Panelists will draw upon their own experience with specific energy markets and power pool operations.</p> <p>Presenters and Panelists:</p>



Mr. Hans-Arild Bredesen, CEO, Nord Pool Consulting

Mr. Bredesen has extensive international experience from designing and implementing various power market design and trading arrangements since 1992 where he initially was involved in developing the first market systems at Nord Pool. He has been involved in developing new product offerings in a continuous evolving electricity markets worldwide. He has investigated international markets and had key roles in the development of strategies and detailed rules for Trading, Scheduling, and Settlement systems for regulators, power exchanges and system operators in more than 20 countries/regions worldwide. His main focus is the creation of new national and regional power markets for various clients around the world. He is also board member of NODES, the newly established European marketplace for trading local flexibility.



Mr. Salvador Rivas, International Energy Advisor and Consultant

International Energy Economic Expert, Dr. Salvador Rivas (Ph.D.), worked as researcher of the Institute of Energy Economics and the Rational Use of Energy in Germany. He was adviser for the Ministry of Economy of El Salvador, supporting the development of the Regional Electricity Market of the Electrical Interconnection System of the Countries of Central America (SIEPAC). Dr. Rivas was Regional Coordinator of the Energy and Environment Partnership (EEP) with Central America, in charge of the execution of renewable energy projects. Currently he is Project Developer & Energy Consultant for IRENA, UNDP, IDB, GIZ, EU, ECONOLER and other organizations.



Ms. Carmen Urizar, Founder and Director, Energy & Infrastructure Analysis Center (EIA Center)

Ms. Urizar is Former Minister of Energy and Mines in Guatemala (2007-2008). Former President of the Nacional Electricity Commission -CNEE- (2012-2016), Former President of the National Petroleum Commission and Vicepresident of the National Electricity Institute -INDE (2007-2008). During her tenure as Energy Minister she designed and launched Guatemala's first Energy Policy framework 2008-2015, that aims to transform the country's electricity matrix. Ms. Urizar holds an MA in Economics from Clemson University, South Carolina, a Diploma on Market Regulation from John F. Kennedy School of Government of Harvard University and several specialized studies on renewable energy from RENAC, Berlin and ICH Norway.

Key Issues for Discussion:

- (1) **How does a cross-border energy market or power pool begin?** What are the initial reasons or goals that originate cooperation on energy trade among countries? What is the scope of the 'knowledge base' or analyses that provide a rationale for starting a cross-border energy market or power pool?
- (2) **How does the cooperation process continue and be sustained?** What institutional or other collective action arrangements provide the 'leadership'? Are formal agreements among countries an early or later component of this process? Is 'pilot-testing' involved at this stage?
- (3) **What are the crucial factors for transitioning successfully from national markets to a regional energy market and power pool, and then maintaining its operation? What are the key risks, market and non-market risks?** How has 'success' been measured?
- (4) **What are some key lessons-learned from experience in Central America and Southern Africa?** How have those lessons been applied to improve future operational performance and sustain cooperation?

Moderator:



Mr. Diwesh Sharan, Deputy Director General, CWRD, ADB

Mr. Sharan is the Deputy Director General of the South Asia Department in Asian

Development Bank. Prior to this, he held various positions at the Bank including Director of Urban and Social Sectors Division in East Asia Department, and Director of Budget and Management Services Division in Budget, Personnel, and Management Systems Department. He has co-authored a number of ADB publications such as ADB's Infrastructure Operations: Responding to Client Needs and Energy for All: Addressing the Energy, Environment, and Poverty Nexus in Asia. He is an expert in policy formulation, planning, and operational work in a developing country context. He holds a doctorate degree in Economics from SUNY, Stony Brook, USA, where he also taught.

10:45 – 11:00 a.m.

Coffee/Tea

11:00 a.m. – 12:00 p.m.

Session III: Opportunities, Challenges and Priorities for Developing Cross-Border Energy Markets and Energy Trade in Asia

This Session will explore the potential and rationale for expanding cross-border energy markets and power pools in developing Asia, taking into account lessons-learned in other regions. It will identify needs for further studies and/or making more concerted use of available analyses for planning and decision-making in relation to subregional and intersubregional opportunities. The Session will consider types of cooperation mechanisms suitable for advancing cross-border energy initiatives in the region.

Key Issues for Discussion:

- (1) **What are the economic, technology, energy security and environmental reasons for further development of cross-border energy markets across developing Asia?** What specific priorities been defined? What are some of the gaps in information and analyses that inhibit countries from strategic consideration of cross-border energy markets and power pools?
- (2) **How might developing Asia begin to consider or apply--in a collective or cooperative way--some of the key lessons-learned from the establishment and operation of cross-border energy markets and power pools in other regions?**
- (3) **What opportunities exist for intersubregional cooperation on cross-border energy markets and power pools in developing Asia, for example, between Central Asia and South Asia, or between East Asia and Southeast Asia?** Would a new inter-subregional entity be the preferred mechanism to establish and manage intersubregional cross-border energy markets and power pools, or a new cooperation agreement among existing subregional or national entities entities?
- (4) **What other opportunities exist, or could be examined, to improve cross-border technology innovation and transfer, freer trade of technology goods and services, and easier cross-border movement of professional and other skilled labor to support cross-border energy markets and power pools?**

Experts Panel:



Mr. Matthew Wittenstein, Senior Electricity Analyst, IEA

Mr. Wittenstein joined the International Energy Agency's Gas, Coal and Power Markets Division in 2014. As a senior electricity analyst, he focuses on the economics of generation, the challenges of encouraging investment in clean energy technologies, and electricity market design. He was a lead co-author of the 2015 Projected Costs of Generating Electricity study, the Development Prospects of the ASEAN Power Sector report, and the IEA's 2016 Thailand Electricity Security Assessment. Mr. Wittenstein is currently leading the IEA's work on cross-border electricity security.



Mr. Hongpeng Liu, Director, Energy Division, UNESCAP

Mr. Liu, Director, Energy Division, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). He is currently leading the energy team in ESCAP to promote regional energy cooperation with focus on implementation of the Sustainable Development Goal 7 in achieving the 2030 Agenda for Sustainable Development and energy connectivity for regional

economic cooperation and integration. His work ranges from conducting policy studies, organizing intergovernmental meetings & policy dialogues and providing advisory services to facilitating regional cooperation on sustainable energy development in Asia and the Pacific. Mr Liu has over 30 years' experience on sustainable energy. Prior to joining the United Nations, he served as government official in charge of energy policies and plans, new and renewable energy industry development in the central government of China.



Mr. Andrew Jeffries, Director, Energy Division, SERD, ADB

Prior to joining ADB in 2007, Mr. Jeffries was a Senior Vice President in the New York office of Fortis Capital's Global Energy & Utilities Group. He joined Fortis from the Global Energy Division within GE Capital's Structured Finance Group, where he led the investment underwriting of equity investments and financings in the U.S. and internationally. Prior to GE, Mr. Jeffries worked at Caithness Energy, a project developer of geothermal, other renewable, and gas-fired independent power projects in the U.S. and Asia. He holds a Master's degree from Columbia University and a bachelor's degree from Bucknell University, U.S.A.



Mr. Kaoru Ogino, Principal Energy Specialist, EARD

Mr. Ogino is Principal Energy Specialist at the Asian Development Bank (ADB). He has over 25 years of professional experience in the energy sector, specializing in power, gas, oil, and renewable energy. At ADB, he has worked for energy sector projects that promote regional cooperation and integration, energy security, pollution reduction, climate change, and public-private partnerships across the Asia subregions including East Asia, South Asia, Southeast Asia, and West Asia. He holds a PhD in International Studies from the University of Tokyo and is a visiting research fellow at the University of Tokyo.



Prof. Jyoti Parikh, Executive Director, IRADe

Professor (Dr.) Parikh is Executive Director of Integrated Research and Action for Development (IRADe), New Delhi. She is a Member of the Prime Minister's Council on Climate Change-India and is a recipient of Nobel Peace Prize awarded To IPCC authors in 2007. She served as the senior professor and Acting Director of Indira Gandhi Institute of Development Research (IGIDR), Mumbai 1986-2003. IIASA, Austria for 8 years (1980-86, 76-78) and Planning Commission, as senior energy consultant at New Delhi (1978-80). She has been appointed as the advisor for Global commission on adaptation set up by UN Secretary General and Gates foundation managed by World Resources Institute. She was also a member of World Economic Forum's Global Agenda on Decarbonization of Energy Sector. She has served as energy consultant to the World Bank, the U.S. Department of Energy, EEC, Brussels and UN agencies such as UNIDO, FAO, UNU, and UNESCO, Environment Consultant to UNDP, World Bank and so on. She worked as an advisor to various ministries for the Government of India. Her analytical work spans over areas such as Climate change and environment, renewable energy, energy policy, impacts of climate change, natural resource accounting, sustainable development and Global Environment Facility (GEF), North-South issues in IPCC response strategies, Joint implementation of climate change projects: opportunities for North-South cooperation, trade and environment.

Moderator:



Ms. Cleo Kawawaki, Deputy Director General, SERD, ADB

Ms. Kawawaki is the Deputy Director General of the Southeast Asia Regional Department of the Asian Development Bank (ADB) and assumed office in July 2017. As one of the five regional departments, SERD covers the ASEAN countries with a portfolio of \$17.6 billion in loans/grant assistance. From large road and infrastructure projects to education and rural development projects, ADB has been a partner to developing member countries for over 50 years. Prior to this position, Ms. Kawawaki was the Director, Energy Division of the Central and West Asia Department. Responsible for business development and implementation of \$7 billion portfolio for the Central and West Asian countries.

Ms. Kawawaki has been with ADB since 2000. Starting as Commercial Cofinancing Officer, she implemented the largest bond (JPY 61.7 billion) guaranteed by ADB in Dec 2002 for Power Sector Asset Liabilities Management Corp (PSALM) of the Philippines and established the ASEAN+3 Asian Bond Market Initiative. As a Senior Private Sector Development Specialist she assisted in the creation of enabling environment and increase private sector investment in Indonesia and Philippines. In Central West Asia, as the focal point for Pakistan, she was responsible for Energy Sector's \$1.2 billion portfolio, policy dialogue, business development and portfolio oversight and was mission leader for milestone innovative projects in the energy sector totalling \$3.6 billion. Prior to ADB, she was with the Nomura Securities Co., Ltd. for over a decade. As underwriter (equity and financial structuring of bonds and syndication manager). Notable projects include the first UK privatization publicly offered in Japan and JBIC guaranteed bond for Philippines.

12:00 p.m. – 1:00 p.m. LUNCH (venue in ADB headquarters to be confirmed)

1:00 – 2:00 p.m. **Session IV: Scaling-Up Investment in New Cross-Border Energy Projects in Asia and the Pacific – Roles of the Private and Public Sectors, and Development Partners**

This Session will consider the respective/complementary roles of the private and public sectors and external development partners in advancing planning, financing and operating cross-border energy projects in Asia.

Key Issues for Discussion:


- (1) **What new or unique opportunities would cross-border energy markets and regional power pools offer the private sector? What are their interests, what opportunities do they see? What risks might concern them the most? Which form of participation would they prefer, what operating or business models?**
- (2) **What new or unique trade and regulatory reform/innovation opportunities as well as approaches to public-private partnership would cross-border energy markets and regional energy trade present to Governments? Are broader trade agreements and/or energy sector policy/regulatory harmonization or alignment 'pre-requisites' for establishing cross-border energy markets and regional power pools?**
- (3) **What roles could multilateral (and even bilateral) development partners play to foster and support strategic development and implementation of cross-border energy markets and power pools in the region? For example, project specific investment but also non-investment advisory services (e.g., facilitate inter-country dialogue, advising on an acceptable distribution of the gains, putting in place a common enforcement mechanism, preparation of inter-country agreements, and capacity building)?**

Experts Panel:



Mr. Hans-Arild Bredesen, CEO, Nord Pool Consulting

Mr. Bredesen has extensive international experience from designing and implementing various power market design and trading arrangements since 1992 where he initially was involved in developing the first market systems at Nord Pool. He has been involved in developing new product offerings in a continuous evolving electricity markets worldwide. He has investigated international markets and had key roles in the development of strategies and detailed rules for Trading, Scheduling, and Settlement systems for regulators, power exchanges and system operators in more than 20 countries/regions worldwide. His main focus is the creation of new national and regional power markets for various clients around the world. He is also board member of NODES, the newly established European marketplace for trading local flexibility.



Mr. Quan Nan, Representative of Southeast Asia Office, Global Energy Interconnection Development and Cooperation Organization (GEIDCO)

Mr. Nan is the Director of Southeast Asia - South Asia Office of GEIDCO, Chinese Society of Electrical Engineering Committee Member. His major is power system and automation. He has been working as a senior researcher at China Electric Power Research Institute and China Power Economic and Technological Research Institute of State Grid Cooperation of China for almost ten years. He has led an office of GEIDCO in Bangkok to promote the renewable energy development and energy interconnection in this region.



Ms. Carmen Urizar, Founder and Director, Energy & Infrastructure Analysis Center (EIA Center)

Ms. Urizar is Former Minister of Energy and Mines in Guatemala (2007-2008). Former President of the Nacional Electricity Commission -CNEE- (2012-2016), Former President of the National Petroleum Commission and Vicepresident of the National Electricity Institute -INDE (2007-2008). During her tenure as Energy Minister she designed and launched Guatemala's first Energy Policy framework 2008-2015, that aims to transform the country's electricity matrix. Ms. Urizar holds an MA in Economics from Clemson University, South Carolina, a Diploma on Market Regulation from John F. Kennedy School of Government of Harvard University and several specialized studies on renewable energy from RENAC, Berlin and ICH Norway.



Mr. Jackie Surtani, Director, Infrastructure Finance Division 2, Private Sector Department, ADB

Mr. Surtani was appointed Director of the Infrastructure Finance Division that covers East Asia, Southeast Asia and the Pacific Islands in April 2017. For the last three years, Jackie led the risk function of Siemens Financial Services' Asian commercial finance unit as their Regional Chief Risk Officer and was responsible for a team of 80 staff in China and India. Prior to joining Siemens, he was a Senior Investment Specialist for the same division at ADB responsible for project finance transactions in Indonesia, Malaysia and the Pacific Islands. He led the team that closed the US\$1.1 billion project financing for the Sarulla Geothermal Power Project in Indonesia which won several Deal of the Year accolades. He also secured two other mandates for geothermal projects and built a strong deal pipeline for ADB in Indonesia. Jackie began his career at Chase Manhattan Bank (now JP Morgan) as Director of Global Power and Project Finance; was a Director for Global Project Finance at Credit Suisse; and Head of Project Finance Asia Pacific at KBC Bank for 14 years. Mr. Surtani has over 27 years of successful experience in Asian infrastructure lending and advisory. He has a strong credit philosophy and sector and regional knowledge across the entire energy chain (i.e. power generation, renewable energy, LNG, petrochemicals), infrastructure and telecommunications. Mr. Surtani is a national of the United Kingdom. He obtained his Bachelor of Science Degree in Business Finance and Economics from the University of East Anglia in 1988 with a First Class Honours degree. He obtained his Master of Philosophy Degree in Management Studies from the University of Oxford in 1990.



Mr. Ashok Bhargava, Director, Energy Division, CWRD, ADB

Mr. Bhargava assumed the role of Director, Energy Division, Central and West Asia Department (CWRD) of the Asian Development Bank (ADB) on 30 October 2017. In this position, he oversees business development of energy sector lending and non-lending operations, and implementation of \$7.3 billion portfolio for Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Turkmenistan and Uzbekistan. Prior to joining CWRD, he was Director (Energy), East Asia Department for 7 years and responsible for energy sector operations in the People's Republic of China and Mongolia. He is an Electrical Engineer with a Master's Degree in Business Administration and, multiple management and leadership trainings from Cambridge University, Harvard Business School and Ross School of Business, Michigan.

He brings in more than 36 years of energy sector experience in a wide range of energy sector operations from hydropower, renewable energy, energy efficiency, low-emission coal, carbon capture and storage ultra-efficient urban heating and cooling to power transmission and substations across Asia and the Pacific region. He was leading ADB's flagship program of air quality improvement in one of the most important economic areas of Beijing-Tianjin-Hebei in the PRC. He has been instrumental in shifting

ADB's operations from conventional approaches to innovative and cutting-edge interventions in project design and financing that have generated many awards and recognitions. He has led policy papers and knowledge work in areas of power sector reforms, concentrated solar power tariff, CO₂ – enhanced oil recovery, capture ready fossil fuel plants, water-energy nexus, shale gas development in the Asia region etc.

Currently, he is also the Chair, Energy Sector Committee that provides leadership and guidance to ADB's energy sector operations. He is an Australian national. Prior to joining ADB, he worked with a large infrastructure consulting firm, a multinational power company in Australia, and a large public sector generation utility in India.

Moderator:



Mr. Nianshan Zhang, Deputy Director General, CWRD, ADB

Before assuming the position of Deputy Director General, Mr. Zhang was the Advisor and Head for the Portfolio, Results, Safeguards and Gender Unit in CWOD-PSG. His unit oversaw the implementation of ADB's safeguards policies, investment portfolio, financial management and gender equity of CWRD projects. He joined ADB in November 2002. Mr. Zhang has also held various positions, which included Senior Transport Specialist, and Senior Advisor to the Vice President, VPO1. In June 2011, he was appointed as Deputy Country Director in ADB's Pakistan Resident Mission. Mr. Zhang has in-depth operational knowledge of ADB's policies and practices. He is a national of the People's Republic of China who holds a master's degree in Economics from University of International Business and Economics, and a bachelor's degree in Economics from University of International Economics and Trade in People's Republic of China.

2:00 – 3:00 p.m.

Session V: The Role of Renewable Energy (Beyond Hydro) in Cross-Border Energy Markets and Power Pools

This Session will discuss the potential of renewable energy (beyond hydro) as an economic and environmentally beneficial category of energy for supporting cross-border energy trade, focusing on the challenges as well as opportunities that renewable energy presents to expanding cross-border energy trade in the region.

Key Issues for Discussion:

- (1) **Given Asia's strong, long-term demand for energy, how can cross-border trade and power pools help ensure that all types of energy—nonrenewable and renewable (including and going beyond hydro)—are made available in cross-border energy markets?**
- (2) **What could renewable energy (beyond hydro) contribute to the success and sustainability of cross-border energy markets and power pools? An expanded and more reliable supply of energy? Reduced price volatility? Superior technologies? Generate additional tradable carbon credits? How do such benefits compare to renewable energy's potential for strengthening national energy security through 'more localized' energy demand and supply?**
- (3) **What are some examples where inter-country cooperation and agreements on cross-border energy markets and power pools include targets or commitments for low-carbon/low GHG emissions, and thereby incentivize a more significant role for renewables? How could an increase in the share of renewable energy from diversified sources attract greater consumer and/or investor interest in cross-border energy trade?**

Experts Panel:



Mr. Matthew Wittenstein, Senior Electricity Analyst, IEA

Mr. Wittenstein joined the International Energy Agency's Gas, Coal and Power Markets Division in 2014. As a senior electricity analyst, he focuses on the economics of generation, the challenges of encouraging investment in clean energy technologies, and

electricity market design. He was a lead co-author of the 2015 Projected Costs of Generating Electricity study, the Development Prospects of the ASEAN Power Sector report, and the IEA's 2016 Thailand Electricity Security Assessment. Mr. Wittenstein is currently leading the IEA's work on cross-border electricity security.



Mr. Hongpeng Liu, Director, Energy Division, UNESCAP

Mr. Liu, Director, Energy Division, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). He is currently leading the energy team in ESCAP to promote regional energy cooperation with focus on implementation of the Sustainable Development Goal 7 in achieving the 2030 Agenda for Sustainable Development and energy connectivity for regional economic cooperation and integration. His work ranges from conducting policy studies, organizing intergovernmental meetings & policy dialogues and providing advisory services to facilitating regional cooperation on sustainable energy development in Asia and the Pacific. Mr Liu has over 30 years' experience on sustainable energy. Prior to joining the United Nations, he served as government official in charge of energy policies and plans, new and renewable energy industry development in the central government of China.



Mr. Dan Millison, Manager, Transcendery L.L.C.

Mr. Millison is the Manager of Transcendery L.L.C., a private consultancy established in 2008 to provide sustainable infrastructure solutions. He has helped mobilize well over \$10 billion investment in energy and transport infrastructure, including more than \$1 billion of co-financing from the Clean Technology Fund, the Scaling Up Renewable Energy Program, and the Green Climate Fund. He was formerly a senior energy specialist at Asian Development Bank, and previously worked in the environmental services and oil and gas industries. He holds a M.S. in Civil Engineering and a B.A. in Geological Sciences, both from Northwestern University in Evanston, Illinois.



Prof. Jyoti Parikh, Executive Director, IRADe

Professor (Dr.) Parikh is Executive Director of Integrated Research and Action for Development (IRADe), New Delhi. She is a Member of the Prime Minister's Council on Climate Change-India and is a recipient of Nobel Peace Prize awarded To IPCC authors in 2007. She served as the senior professor and Acting Director of Indira Gandhi Institute of Development Research (IGIDR), Mumbai 1986-2003. IIASA, Austria for 8 years (1980-86, 76-78) and Planning Commission, as senior energy consultant at New Delhi (1978-80). She has been appointed as the advisor for Global commission on adaptation set up by UN Secretary General and Gates foundation managed by World Resources Institute. She was also a member of World Economic Forum's Global Agenda on Decarbonization of Energy Sector. She has served as energy consultant to the World Bank, the U.S. Department of Energy, EEC, Brussels and UN agencies such as UNIDO, FAO, UNU, and UNESCO, Environment Consultant to UNDP, World Bank and so on. She worked as an advisor to various ministries for the Government of India. Her analytical work spans over areas such as Climate change and environment, renewable energy, energy policy, impacts of climate change, natural resource accounting, sustainable development and Global Environment Facility (GEF), North-South issues in IPCC response strategies, Joint implementation of climate change projects: opportunities for North-South cooperation, trade and environment.

Moderator:



Mr. Robert Guild, Chief Sector Officer, SDCC, ADB

Mr. Guild is Chief Sector Officer of the Asian Development Bank. He is responsible for ADB-wide technical collaboration, innovation, and knowledge management for sector groups in transport, energy, urban, water, education, health, and finance. He is also responsible for management and resource mobilization for 19 bank-wide trust funds covering all sectors. Dr Guild began his career as an engineer in the United States and has worked extensively for bilateral and multilateral agencies in international development. He has held faculty appointments at universities in the United States, the Pacific region, and New Zealand. Dr Guild holds degrees in civil engineering,

public administration, urban and regional planning, and international development. He has been with the Asian Development Bank since 2003.

3:00 – 3:45 p.m.

Session VI: Some Thoughts on the Way Forward:

Taking into account the deliberations in the preceding five Sessions, this Session will focus on delineating some concrete ‘next steps’ ADB and other development partners could consider to advance cooperation among ADB’s developing member countries for planning and expanding investment in cross-border energy trade in the region.

Key Issues for Discussion:

- (1) **How should the region move forward over the next few years with more concerted efforts to develop cross-border energy markets and power pools?** What might be some relevant ‘next steps’ undertaken, including with support from ADB and others—for example; feasibility studies, cross-border dialogue among countries, support for sector policy and institutional reforms, and identifying new technologies?
- (2) **What other advisory, capacity building, technical assistance, or investment support from development partners, such as ADB, would countries and/or relevant regional bodies likely request in order to begin and complete the ‘next steps’?** For example, pilot-testing small-scale cross-border energy operations on a timebound basis, including operations that introduce new technologies, operational management and financing modalities?
- (3) **In what ways could existing or new multilateral or bilateral cooperation mechanisms in Asia—for example, ADB’s established RCI subregional programs—foster and take forward a strategic expansion of cross-border energy markets and power pools in the region?** What types of ‘special purpose vehicles’—public or private—might need to be established, in some cases, to develop and implement cross-border energy markets and power pools?

Experts Panel:



Mr. Salvador Rivas, International Energy Advisor and Consultant

International Energy Economic Expert, Dr. Salvador Rivas (Ph.D.), worked as researcher of the Institute of Energy Economics and the Rational Use of Energy in Germany. He was adviser for the Ministry of Economy of El Salvador, supporting the development of the Regional Electricity Market of the Electrical Interconnection System of the Countries of Central America (SIEPAC). Dr. Rivas was Regional Coordinator of the Energy and Environment Partnership (EEP) with Central America, in charge of the execution of renewable energy projects. Currently he is Project Developer & Energy Consultant for IRENA, UNDP, IDB, GIZ, EU, ECONOLER and other organizations.



Mr. Safdar Parvez, Director, RCI Division, CWRD, ADB)

Mr. Parvez, a national of Pakistan, has more than 20 years of work experience including 15 years in ADB. He holds Master’s degrees in Economics from Cambridge University, United Kingdom and Quaid- E-Azam University, Pakistan. Prior to joining ADB, he was a Programme Manager/Economist at Aga Khan Rural Support Programme, Pakistan. He joined ADB in June 2002 as Programs Officer in the Pakistan Resident Mission (PRM). He was appointed as an Economist in PRM in July 2007 and was later assigned to the ADB Headquarters in the Central and West Asia Department’s Operations Coordination Division in July 2010. In October 2012, he transferred to the Strategy and Policy Department on a promotion as Senior Planning and Policy Economist and was promoted to Principal Planning and Policy Economist in April 2015. He was appointed Director for Central and Asia Department’s Regional Cooperation and Operations Coordination Division in November 2016.

Mr. Parvez is a senior economist who has broad experience in the Bank covering strategy and policy development, country programming and operations, economic and sector work, and supporting regional cooperation and project processing and implementation both in HQ and RM. He has been a

team leader on a number of strategy reforms and initiatives such as the Midterm Review of ADB Strategy 2020, Approach to Upper Middle-Income Countries, Reform of Country Partnership Strategy Business Process, and was a lead member of the team which prepared the ADB Strategy 2030. He has also led the preparation of country partnership strategies for Kazakhstan, Pakistan and Uzbekistan. Since assuming his position as Director, CWRC, he has led the formulation of the CAREC 2030 Strategy, the new long-term strategic framework for the CAREC Program leading to 2030 and supervised and led economic and sector work and preparation of country partnership strategies. He has extensive knowledge and experience in Central and West Asia region, and his operational and research background supports ADB's knowledge and regional cooperation work in the region.



Mr. Priyantha Wijayatunga, Director, Energy Division, SARD, ADB

Mr. Wijayatunga holds a degree in Electrical Engineering from the University of Moratuwa Sri Lanka and a Doctorate in Power Economics from Imperial College London where he was a Beit Scientific Research Fellow. He joined the Asian Development Bank in 2008 and he is currently the Director, South Asia Energy Division. 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 a key contributor to the Sri Lanka Electricity Act 2009 and Sri Lanka Sustainable Energy Authority Act 2007. He was a lead author of the Sri Lanka Energy Policies and Strategies. He was also 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 Chartered Electrical Engineer and a Fellow of the Institution of Engineers Sri Lanka. Also he is a Senior Member of the Institution of Electrical and Electronic Engineers (IEEE), US.



Mr. Arjun Goswami, Chief, Regional Cooperation and Integration (RCI) Thematic Group, ADB

Mr. Goswami holds a degree in Law (Juris Doctor) from the American University; a Master of Law degree (Public International Law) from Cambridge University; a Master of Arts degree (Modern History) from Oxford University; and a Master of Science Certificate in Financial Management from the School of Oriental and African Studies, London University. With 21 years in ADB in both operations and knowledge and a decade of RCI experience, he brings strategic direction and a focus on innovation and quality for future RCI work by ADB

Moderator:



Mr. Woonchong Um, Director General, SDCC, ADB

Mr. Um is Director General concurrently Chief Compliance Officer of the Sustainable Development and Climate Change Department (SDCC) – formerly the Regional and Sustainable Development Department (RSDD) in the Asian Development Bank (ADB). He assumed office in 1 June 2018. He leads ADB-wide knowledge management and innovation in various thematic and sector operation areas. He is responsible for developing sector and thematic policies, strategies, frameworks and operational plans, and developing new business ideas. He looks after ADB's compliance with environment and social safeguards. He oversees the administration of single/multi-donor trust funds, project cofinancing, and global funding initiatives and management of ADB-wide cofinancing data.

He is also a Professor of Sustainable Development Goals (SDGs) at Yonsei University. He has master's degree in Business Administration from New York University Stern School of Business and a Bachelor of Science degree in Computer Science from Boston College.

3:45 – 4:00 p.m.

Closing Remarks

Mr. Yongping Zhai, Chief, ADB Energy Sector Group, ADB

Mr. Arjun Goswami, Chief, ADB Regional Cooperation and Integration (RCI) Thematic Group, ADB

IMPORTANT NOTE: All Panelists are expected to base their participation/make their respective contributions drawing on their experience with studying, planning, developing, operating or managing, investing in, or evaluating cross-border energy markets and/or operating systems or networks (including technologies) in Asia or other major regions of the world. Panelists are also encouraged to provide, at the earliest possible time, links to online knowledge or other information resources that relate to their Sessions at the RCI Deep Dive Workshop. The Workshop organizers will post those links at the relevant location on the ACEF 2019 website in advance of the Workshop.