



IEEE Region 10 Humanitarian Technology Conference 2018

SUSTAINABLE TECHNOLOGIES FOR HUMANITY



Plenary Session on Humanitarian Energy

Contents

Introduction of Humanitarian Technologies in the context of ADB Operations (South Asia) by *Francesco Tornieri*

This focus on the critical importance of the energy sector, an underpinning network technology/system, by presenting the scope and key findings of a publication on: [Energy Technology Innovation in South Asia: Implications for Gender Equality and Social Inclusion](#). It also highlights that the commitment -for the future- is to bring the gender equality, social inclusion and energy linked program to a new level -taking it beyond the established energy access practices to address: the GESI gap in 'smart' energy technology development; the GESI implications of energy technology innovation and development; and the GESI determinants of the market uptake of new energy technologies and their potential to transform women's and disadvantaged groups' lives and relations. A 10-minute video on the SARD experience in South Asia is to shown as a part of the presentation.

Renewable energy technologies as “Disruptive Technologies” by *Jaimes Kolantharaj, Ranishka Wimalasena and Yoojung Jang*

Renewable energy technologies as “disruptive technologies” can transform how energy is produced, distributed, and consumed. Distributed systems such as mini-grids can provide solutions for inclusive energy access. This presentation showcase three major ADB projects:

- a) Preparing Outer Islands for Sustainable Electricity Development Project,
- b) Supporting Electricity Supply Reliability Improvement Project and Productive Energy Use for Small Isolated Island and Rural Communities and
- c) Bangladesh Power System Enhancement and Efficiency Improvement Project (Rupsha 800-Megawatt Combined Cycle Power Plant Project; Southwest Transmission Grid Expansion Project).

These projects present critical features of the approach to 'Inclusive Technologies' which is to support women's equitable access to Science, Technology, Engineering, and Mathematics (STEMs), which is complemented by a broad range of skills development projects.

Energy Equity – a concept, known to everybody, non-comprehended by most by Narendra de Silva

Energy generation, distribution, and services are dominated by engineers and economist conversantly using their technical and economic tool kit in developing energy solutions to the society. However, increasingly it is seen that their solutions are too rigid to handle the social requirements of the equity and distributive justice in energy. Energy as a resource is not distributed in the society equitably. The use of natural resources for the generation of energy does not give due recognition to the inter-generational equity. Polluters do not pay and energy sector is not precautionous. In general, the energy sector does not give due recognition to energy equity.

Equity is a concept natural to the human mind. It refers to reasonableness and justice. The concept of equity in each individual's mind, in general, refers the same thing. However, it is seen that the concept is not identical in each mind, when we try to develop practical applications of it. Therefore, reconciliation among the stakeholders becomes almost impossible, when we attempt to develop policies and applications in enforcing energy equity. Equity is a generally understood but particularly uncomprehended territory. How do we achieve reconciliation under these circumstances? Legal system embraced the concept of equity and incorporated it in to their body of laws very effectively during the development of human civilisation. Probably there are lessons, we can learn by studying how the legal system precipitated the natural concept of Equity into their corpus of law.

It is rather interesting to see that the very same methodology the engineers use in absorbing the concepts of science into their books was used in early 13th century by jurists in absorbing concepts of equity into law. We engineers always got our set of theories and equations in describing our problems. However, as no theory can describe the nature in totem, there are multitude of instances where our theories mismatch circumstances. These we treat as exceptions. We coin another law or rule, mostly empirical; to describe frequently occurring exception and incorporate it to our repository of theories. The same process was used to precipitate the concepts or equity in to law.

In early 13th century, the civil law was harsh and inflexible. A new stream of decisions, case by case basis, given in personal to individuals, invoked by petition to the king, at the chancellor's court, called 'equity in personam' evolved into a new source of law called equity law. Today equity in law operates in two modes, once at the higher courts applied in person as a law of equity, and at lower courts certain elements of law sourced by equity.

Application of equity in energy may also be developed in the similar manner. The energy sector may develop their equitable solutions to individual issues in isolation, as the first entry to equity. Over the time, once such a matrix of solutions are coined, the energy expert can develop techno-economic theories in generalizing these isolated solutions. Sector should develop new institutions and liberalize decision-making in existing institutions, permitting the development of such individual solutions. The capacity of the decision makers is required to be developed in developing their concepts of justice and equity. The stakeholder awareness and the public participation in decision making needs to be reinforced. There shall be a parallel mechanism to generalize such solutions in forming equity policies so that equity will be incorporated in to sector decision making.

Tentative Program

- 10:00 – 10:05 Welcome and Introduction to the session by Session Coordinator
- 10:05 – 10:10 Introduction by ADB
- 10:10 – 10:30 “Introduction of Humanitarian Technologies in the context of ADB Operations”,
- 10:30 – 11:00 Renewable energy technologies as “Disruptive Technologies” by Jaimes Kolantharaj, Ranishka Wimalasena and Yoojung Jang
- 11:00 – 11:20 “Energy Equity – a concept, known to everybody, non-comprehended by most” by Dr. Narendra de Silva
- 11:20 – 12:00 Discussion

Resource Persons



Francesco Tornieri

*Principal Social Development Specialist
Portfolio, Results and Quality Control Unit
Office of the Director General
South Asia Department
Asian Development Bank*

Francesco has been working passionately for over 20 years in social development, at the Asian Development Bank (ADB) since 2004- as the South Asia Region (SARD) Gender Equality and Social Inclusion focal point and previously at the World Bank, Africa Region. The importance of energy access for poverty reduction and the nexus between gender, social inclusion and energy have led me to engage deeply in the energy sector by building strategic partnerships with sector colleagues and practitioners. Driven by evidence-based research, SARD's operational approach in the energy sector has adopted the inspirational motto of Going Beyond the Meter and the following principles: (i) gender equality and social inclusion (GESI) norms determine women's and disadvantaged groups' ability to access energy sources and participate in South Asia's energy sector development; (ii) a GESI approach is necessary to expand women's and disadvantaged groups' access to energy and electrification, services and uptake of technologies; and (iii) renewable energy presents new and distinct opportunities to promote women's involvement in the energy sector, by enhancing their employment options, livelihood opportunities and income generation.



Narendra de Silva

*Head of Engineering
Lanka Electricity Company Private Limited*

Narendra did his undergraduate studies in University of Moratuwa, in 1995, Post graduate Diploma in University of Trondheim in 1999, Norway, PhD in Power Electronics in University of Heriot Watt in 2006, UK, and Bachelor of Laws in year 2015 at OUSL Sri Lanka. He was initially working as an engineer in transmission and generation projects prior to his post graduate studies and moved as the Head of Engineering in Lanka Electricity Company in year 2007, after a short period in the University of Moratuwa as an academic. He has been holding the same post to date and is responsible for the design, planning, and development of LECO, one of the distribution companies in Sri Lanka.



Jaimes Kolantharaj

*Energy Specialist,
South Asia Department
Asian Development Bank*

Jaimes is an Energy Specialist, ADB, South Asia Department (Energy Division) currently working on energy sector projects in India, Bangladesh, Maldives and Sri Lanka. He has a Master's degree in Power Engineering from Nanyang Technological University (NTU), Singapore and a bachelor's degree in Electrical & Electronics Engineering, from Madras University, India.

Before joining ADB, he was a Project Manager in Singapore Power Grid (SPPG) for EHV transmission projects (400kV & 230kV voltage class) responsible for reviewing technical specifications and project implementation of EHV transmission equipment. As an R&D Engineer II in Vestas Wind A/S, he wrote technical specifications for the HV equipment used in the wind turbines (2MW & 3 MW). He is also experienced in substation Automation specifically using ABB MicroScada. Earlier in his career, he

worked in Kerala State Electronic Board as a Substation Engineer where he was in-charge of the 110/66kV substation and carried out operation & maintenance of the substation.

He was a member of transformer and Switchgear expert group in Singapore Power and was actively involved in reviewing the technical specifications based on technological advancements and operational needs.



Ranishka Wimalasena

*Senior project officer (Energy)
Sri Lanka Resident Mission
Asian Development Bank*

Ranishka is the senior project officer (Energy) in ADB Sri Lanka Resident Mission. He has 13 years of professional experience in Energy sector, Project Management and Industrial Engineering. Prior to joining ADB, he had mainly worked with the private sector. He holds a Masters degree in Energy Planning and Policy from the University of Technology in Sydney, Australia; and Bachelors in Electrical Engineering from the University of Moratuwa, Sri Lanka



Yoojung Jang

*Social Development Specialist
South Asia Department
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Yoojung is a Social Development Specialist in South Asia Department of ADB and working on energy sector projects in terms of social safeguards and gender. She has 14 years of professional experience in environmental and social management. Before joining ADB, she worked for the Export Import Bank of Korea responsible for private sector projects' environmental and social due diligence. She holds degrees in Environmental Engineering and Business Administration from the Seoul National University, Korea and in Environmental Health from the KNOU, Korea.