

# ESMAP 2012 Knowledge Exchange Forum



## ESMAP 2012 KNOWLEDGE EXCHANGE FORUM

### ABOUT ESMAP

The Energy Sector Management Assistance Program (ESMAP) is a global knowledge and technical assistance program administered by the World Bank. It provides analytical and advisory services to low- and middle-income countries to increase their know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth. ESMAP is funded by Australia, Austria, Denmark, Finland, France, Germany, Iceland, Lithuania, the Netherlands, Norway, Sweden, and the United Kingdom, as well as the World Bank.

## **ESMAP Knowledge Exchange Forum 2012**

Monday - Wednesday, May 7-9, 2012  
1225 Connecticut Ave., NW | Room C8-150  
Washington, DC, 20433

The ESMAP Knowledge Exchange Forum is an opportunity for energy sector practitioners and policymakers from developing countries to join with global experts to share experiences and views about pressing global energy challenges. The Forum is designed to facilitate the exchange of knowledge across sectors and regions, and between representatives from client countries and ESMAP donors.

As in previous years, the 2012 ESMAP Knowledge Exchange Forum focuses on “frontier” issues – issues of emerging importance to developing countries across the world. This year, the Forum will focus on three such themes:

### **Results-Based Approaches in Energy: Learning from Other Sectors (May 7)**

Results-based approaches are receiving increasing interest from client countries and donors, but their deployment in the energy sector has been limited compared to other sectors. ESMAP has embarked on a two-year work program that aims to assess how results-based approaches can be used to improve outcomes and scale up financing for energy sector development.

### **Energy Access for the Urban/Peri-Urban Poor (May 8)**

Rapid urbanization is putting new pressures on many developing countries to deliver reliable, clean energy services to urban populations. This is especially true in slum areas and informal settlements that have long been characterized by a lack of modern energy services. ESMAP and the Cities Alliance are partnering with city authorities and urban planners to identify solutions to this challenge that can be replicated in urban and peri-urban communities around the world.

### **Renewable Energy Resource Mapping (May 9)**

Mapping national renewable energy resources is a crucial step in providing the information needed for governments and regulatory authorities to develop strategies and policy frameworks to support the sustainable expansion of renewable power generation. This session is aimed to facilitate sharing of experience between countries that have successfully completed such work and those that are just starting.

The Knowledge Exchange Forum will wrap up on May 9 with a showcase of ESMAP tools designed to support low carbon development planning.

Day 1 | Monday, May 7

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## RESULTS-BASED APPROACHES IN ENERGY – LEARNING FROM OTHER SECTORS

8:30 REGISTRATION & CONTINENTAL BREAKFAST

9:00 **Welcome** | Vijay Iyer, Director, Sustainable Energy Department, World Bank (WB)

9:15 **Setting the Stage | Panel Discussion on Results-Based Approaches**  
Chair | Andrew Steer, Special Envoy for Climate Change, WB

Panelists

- Nancy Birdsall, Center for Global Development
- Joseph Nganga, RE Ventures, Kenya
- Carmen Nonay, Senior Infrastructure Specialist, Global Partnership for Output-Based Aid, WB
- Fadia Saadah, Manager, Operations Policy and Country Services, WB

10:30 BREAK

11:00 **Results-Based Financing in the Health Sector**

- Experiences in the Health Sector: An Overview | Benjamin P. Loevinsohn, Lead Public Health Specialist, WB
- Performance-Based Financing in the Public Sector in Rwanda and Burundi | Gyorgy Fritsche, Senior Health Specialist, and Rigobert Mpendwanzi, Consultant, WB

12:00 **Performance-Based Contracting in the Roads Sector**

- Output and Performance-Based Contracting for Roads Development: Application in Liberia Road Asset Management Project | Kulwinder Rao, Senior Highway Engineer, WB

12:45 LUNCH

1:45 **Results-Based Approaches in the ICT Sector**

- Output-Based Aid Experiences in the ICT Sector | Doyle Gallegos, Lead ICT Policy Specialist, WB
- Innovative PPP for Tax Modernization: The eGhana Project | Mavis A. Ampah, Senior ICT Policy Specialist, WB

2:45 **Results-Based Financing in the Water and Sanitation Sector**

- Brazil REAGUA: First Comprehensive RBF Scheme in a Bank-financed Project | Carlos Velez, Lead Economist, WB

3:30 BREAK

4:00 **Results-Based Approaches for the Energy Sector | Panel Discussion**  
Chair | Rohit Khanna, Program Manager, ESMAP, WB

Panelists

- Gevorg Sargsyan, Program Coordinator, Climate Investment Funds, WB
- Dirk Sommer, Sr. Investment Officer, IFC
- Kilian Reiche, Consultant, Africa Electrification Initiative, WB
- Juan Manuel Rojas, Bidas Corporation

5:15 **Final Remarks** | Rohit Khanna, Program Manager, ESMAP

## ENERGY ACCESS FOR THE PERI-URBAN/URBAN POOR

1:30 REGISTRATION

2:00 **Welcome** | Rohit Khanna, Program Manager, ESMAP

2:15 **Access to Electricity** | **Moderated Panel**

Introduction of Panelists | Gabriela Elizondo Azuela, Task Team Leader, WB

### Panelists

- The Urban and Periurban Challenge | William Cobbett, Manager, Cities Alliance
- Problem in the Making: India's Urban and Periurban Poor | Pratima Joshi, Shelter Associates
- Documentary: "Umeme Kwa Taifa" and Kenya's Success in Progress: "Stimaloan" Credit Facilities | James Njuguna, Customer Relations & Marketing Manager, Kenya Power
- Enabling Conditions for Sustainability: Lessons from Brasil | José Cavaretti, Manager, Eletropaulo (Brazil)

### Emerging Issues and Best Practices

Moderator | Connie Smyser, Smyser Associates

3:40 BREAK

4:00 **Access to Clean Fuels** | **Moderated Panel**

Introduction of Panelists | Venkat Putti, Program Team Leader, ESMAP

### Panelists

- Economics of LPG in Developing Countries | Masami Kojima, Lead Energy Specialist, WB
- Clean Fuel Substitution: Serving the Needs of Consumers | Alex Evans, Energy Transportation Group
- Sustainability: Replicable Business Model for LPG | Renzo Bee, VP LPG Business Line International, TOTALGAZ
- Successful Kerosene Conversion to LPG | Gusrizal Taib, Senior Vice President, Corporate Investment and Business Development, Pertamina
- Documentary: "Connecting the Poor to Natural Gas in Colombia" | Elvira Peynado Vengoechea, Promigas
- Successful Innovative Partnerships | Luis Tineo, Senior Operations Officer, WB

### Emerging Issues and Best Practices

Moderator | Connie Smyser, Smyser Associates

5:20 **Wrap Up** | Venkat Putti, Program Team Leader, ESMAP

## Day 3 | Wednesday, May 9

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### RENEWABLE ENERGY RESOURCE MAPPING AND ENERGY ASSESSMENT TOOLS

- 8:00 CONTINENTAL BREAKFAST
- 8:30 **Welcome** | Rohit Khanna, Program Manager, ESMAP  
Instructions | Michael Randel, Moderator
- 8:45 **Renewable Energy Resource Mapping**  
- Introduction to Mesoscale and Microscale Wind Resource Mapping | Jake Badger, DTU  
Wind Energy, Technical University of Denmark  
- CEM Wind and Solar Global Atlas | Nicolas Fichaux, IRENA (United Arab Emirates)
- 9:30 **Wind | Moderated Panel**  
- Pierre El Khoury, Lebanese Center for Energy Conservation  
- Dr. S. Gomathinayagam, Executive Director, Centre for Wind Energy Technology (India)  
- Joseph Tawiah Quayson, Planning Engineer, Ministry of Energy (Ghana)  
- Sixtus Tohlang, CEO, Lesotho Energy Generation Authority
- 10:30 BREAK
- 11:00 **Solar/Hydropower/Biomass | Moderated Panel**  
- Hosni Ghedira, Director, Research Center for Renewable Energy Mapping, Masdar Institute  
(United Arab Emirates)  
- Niyibizi Mbanzabigwi, Sustainable Energy Development Project, Energy Water and Sanitation  
Authority (Rwanda)  
- Ajwad Musthafa, Deputy Director, Maldives Energy Authority  
- Taposh Kumar Roy, Additional Secretary, Power Division, Ministry of Power, Energy and Mineral  
Resources (Bangladesh)  
- Vore Veve, Director Energy Division, Department of Petroleum and Energy (Papua New Guinea)
- 12:00 **Renewable Energy Resource Mapping Providers/Vendors**  
- Wind | Daran Rife, GL Garad Hassan (USA)  
- Solar | Riaan Meyer, Stellenbosch University (South Africa) and Harsh Goenka, GeoModel  
Solar (Slovakia)  
- Small Hydropower | Doug Hall, Idaho National Laboratory (USA)
- 1:00 **Wrap Up** | Oliver Knight, Senior Energy Specialist, ESMAP
- 1:15 LUNCH
- 2:15 **Showcase | ESMAP Tools to Support Low Carbon Development Planning**  
Overview of ESMAP's Tools | Pedzi Makumbe, Energy Specialist, ESMAP  
- TRACE | Feng Liu, Senior Energy Specialist, ESMAP  
- MACTool | Andreas Mästle, Consultant  
- EFFECT | Pedzi Makumbe, Energy Specialist, ESMAP  
- ETOAG | Sameer Shukla, Senior Energy Specialist, ESMAP
- 3:45 **Closing Remarks** | Rohit Khanna, Program Manager, ESMAP

Day 1 | Monday, May 7

## RESULTS-BASED APPROACHES IN ENERGY – LEARNING FROM OTHER SECTORS

### Session 1

#### **Nancy Birdsall**

Nancy Birdsall is the Center for Global Development's founding president. From 1993 to 1998, she was executive vice president of the Inter-American Development Bank, the largest of the regional development banks, where she oversaw a US\$30 billion public and private loan portfolio. Before that she worked for 14 years in research, policy, and management positions at the World Bank, including as director of the Policy Research Department. Prior to launching the Center, she served for three years as Senior Associate and Director of the Economic Reform Project at the Carnegie Endowment for International Peace where her work focused on globalization, inequality and the reform of the international financial institutions. She is the author, co-author, or editor of more than a dozen books and many scholarly papers. Her most recent publications include *Cash on Delivery: A New Approach to Foreign Aid* and *New Ideas on Development after the Financial Crisis*, co-edited with Francis Fukuyama. Shorter pieces of her writing have appeared in dozens of US and Latin American newspapers and periodicals. Birdsall received her PhD in economics from Yale University and an MA from Johns Hopkins School of Advanced International Studies.

#### **Carmen Nonay**

Carmen Nonay is currently the Acting Program Manager for Global Partnership on Output-Based Aid (GPOBA). Before that, she was the Lead for the Center of Expertise and for the New Business Group, two of the four main operational groups at GPOBA. She has also been Task Manager for OBA projects in the health and energy sectors and for GPOBA's Knowledge & Learning Program. Ms. Nonay joined the World Bank Group (WBG) in 1997 and has worked at the World Bank, IFC and MIGA. At IFC, she led financial sector projects and received the IFC FY06 Corporate Award for her work with the Mexico Housing Team. At MIGA, she held several positions at headquarters and in the field as Senior Underwriter for projects in energy, finance, oil, gas and mining. Prior to joining the WBG, Ms. Nonay worked for the trading company of Nippon Steel in both the US and Japan. Ms. Nonay received an MBA with honors from Thunderbird and a Bachelor's in Business Administration from the University of Texas (Austin) and two Bachelor's Degrees in Sociology and in Political Science from the Universidad Complutense de Madrid (Spain).

#### **Fadia Saadah**

Fadia Saadah is a Manager in the Operations Policy and Quality department in the Operations Policy and Country Services vice presidency (OPCS) at the World Bank. Her responsibilities include investment lending, Program-for-Results as well as reporting and delivery management. She has led the efforts to develop the Program-for-Results lending instrument that was approved by the Board of Directors in January 2012 and the overall reform of investment lending instruments and processes. She has broad operational, managerial and leadership experience. She has worked on development projects in Indonesia, Lebanon, Philippines, and the Pacific. Prior to her appointment to her current position in September 2008, she was sector manager in the Human Development Sector of the East Asia and Pacific Region. Her studies focused on environmental health, epidemiology, biostatistics, demography, health policy and financing. She holds a PhD in Population Dynamics and a Master of Health Science from Johns Hopkins University and science degrees from the American University of Beirut.

#### **Joseph Nganga**

Joseph Nganga is CEO of Renewable Energy Ventures, a renewable energy and energy efficiency project development and advisory firm with offices in Kenya, Uganda, Zimbabwe and Mozambique. As a consultant to infoDev at the World Bank, he played a key role in developing the US\$15 million Kenya Climate Innovation Center business plan and raised the funds to implement it. In the advisory role, Joseph works with companies, government and development agencies in identifying ways to accelerate the scale up of renewable energy in Eastern Africa. Mr. Nganga also leads business development work for Carbon Africa, a carbon asset origination and trading company based in Nairobi with offices in Eastern Africa and Washington DC. He is also on the steering committee of the Africa Renewable Energy Alliance. Prior to founding Renewable Energy Ventures, Mr. Nganga founded and ran a trading business operating in seven countries in Africa. Prior to his entrepreneurial pursuits, Joseph worked in investment banking for Bank of America in Charlotte, North Carolina.

## Session 2

### **Benjamin P. Loevinsohn**

Benjamin Loevinsohn is a Canadian physician and a lead public health specialist at the World Bank, which he joined in 1999. He is currently the health, nutrition, and population cluster leader for 15 countries in central Africa. He worked for many years as team leader for health sector activities in Afghanistan and Pakistan. Prior to joining the World Bank, Dr. Loevinsohn worked as a senior health specialist at the Asian Development Bank (1993-1999), advisor to Philippine Department of Health (1990-1993); Technical Officer, UNICEF, Sudan (1987-1989); and Primary Care Physician, Government of Nicaragua (1984-1985). Dr. Loevinsohn did his medical training at McMaster University in Canada and studied public health at Harvard University. He is the author of more than 25 articles in peer reviewed journals. His particular interests are in monitoring and evaluation (M&E), contracting for health service delivery (he is the author of a book on contracting entitled Performance-Based Contracting for Health Services in Developing Countries – A Toolkit), results-based financing, and health system strengthening in post-conflict settings.

### **Gyorgy Fritsche**

Gyorgy Fritsche is a medical doctor, a Dutch national, specializing in tropical medicine, with a postgraduate degree in Health Policy, Planning and Financing from the LSHTM/LSE. For the past eighteen years he has been living and working as a practitioner, public health manager and advisor in Zambia, Senegal, Afghanistan, Kenya, South-Sudan and Rwanda. For the past ten years he has been closely involved in designing, implementing and scaling up supply-side Results Based Financing programs in Afghanistan, Rwanda, Burundi, Kyrgyzstan and Nigeria. Since 2009 he has worked for the World Bank in Washington DC as a Senior Health Specialist. He advises colleagues and governments in appropriate design and implementation issues related to Results-Based Financing (RBF) programs.

### **Rigobert Mpendwanzi**

Rigobert Mpendwanzi is a health financing and RBF expert. A Rwandan national, from 1999 to 2005 he was in charge of the Health Management Information System at the Ministry of Health in Rwanda, where he was also Contract and Financing Manager for Performance Based Financing in 2005-2010. He is currently working with the World Bank as the RBF specialist located in Burundi, providing technical assistance to the Burundi health system for PBF implementation. Rigobert holds a Bachelor of Business Administration from the Kigali Institute of Science, Technology and Management and a Masters of Public Health from the National University of Rwanda.

## Session 3

### **Kulwinder Rao**

Kulwinder Rao is a professional engineer with over 26 years of post graduate experience. He has worked at the highest level in a government road administration in India. He has also held senior management position in private sector before joining the Bank. He is currently Senior Highway Engineer working for the Africa Region at the World Bank, managing all roads portfolios in Liberia and Mozambique and also supporting OPRC contracts in Andhra Pradesh, India.

## Session 4

### **Doyle Gallegos**

Doyle Gallegos is the Global Practice Leader for Connectivity Infrastructure in the ICT Sector Unit of the World Bank. In this role Mr. Gallegos leads the Bank's telecommunications policy and regulatory agenda, regional backbone and rural connectivity programs, and implementation of PPPs in client countries. Prior to joining the World Bank he worked as a consultant with Booz Allen Hamilton as a Senior Advisor and as a Senior Manager in Deloitte Consulting throughout the Middle East, Latin America, Europe, and the US. Mr. Gallegos also has held VP-level positions with telecom start-ups and emerging business enterprises. Mr. Gallegos has an MBA in Finance from the Wharton School and an undergraduate degree in Economics from Columbia University.



### **Mavis A. Ampah**

Mavis Ampah has been with the World Bank Group since 2003. She is a Senior ICT Policy Specialist with the Transport, Water and ICT Group where she is leading the Bank's ICT programs in several countries in the Africa (Ghana, Sierra Leone, Burkina Faso) and Caribbean (Grenada, St. Lucia, St Vincent and the Grenadines) regions. Prior to joining the World Bank, she worked in South Africa for two years as Chief Executive of the African Connection Program, a World Bank/Infodev Program to stimulate investment and coordinate ICT policies and regulatory frameworks in Africa. Ms. Ampah has also previously run her own telecom consulting company - Spectrum International. A Ghanaian national, she holds a Bachelors degree in Economics from the University of Massachusetts, Amherst (US) and a Master's degree in Public Policy from Harvard University's Kennedy School of Government (US).

## **Session 5**

### **Carlos E. Velez**

Carlos E. Velez (Lead Economist, LCSUW) has extensive operational experience in the water sector where he has been responsible for preparing and implementing a large number of projects. His areas of expertise include public policy design, sector planning, project design, public finance, tariff setting and regulation of public services. Before joining the Bank 24 years ago, Mr. Velez managed a marginal cost pricing of water and power program at the Inter-American Development Bank, served as the Executive Secretary of Colombia's National Tariff Board for Public Services, and managed the Economics Unit of Empresas Públicas de Medellín, Colombia. Mr. Velez is a Management Engineer from the National University of Colombia and has a Master of Science in Economics from the London School of Economics and Political Science.

## **Session 6**

### **Gevorg Sargsyan**

Gevorg Sargsyan is currently the Program Coordinator for the Climate Investment Funds (CTF and SREP) at the Sustainable Energy Department of the World Bank. During his 11 years of experience he has led energy and infrastructure programs in India, Russia, Sri Lanka, Maldives, Armenia, and Georgia. During 2008-2010 he also led a renewable energy and energy efficiency business line in the South Asia Region. Prior to joining the Bank, he worked as a senior manager in various private and public sector organizations. He has been the author and co-author of a number of publications and papers in the area of clean energy and infrastructure finance.

### **Dirk Sommer**

Dirk Sommer is a Senior Investment Officer with the International Finance Corporation and coordinates IFC's Performance-Based Grant Initiative. He has been extensively involved with private sector involvement in infrastructure provision in emerging markets, across utilities, transport and healthcare sectors, over the last 15 years and is advising client governments on both policy aspects of PPPs as well as the design and implementation of individual transactions.

### **Kilian Reiche**

Kilian Reiche is a lead advisor to the World Bank's Africa Electrification Initiative (AEI) and several renewable energy funds and programs run by donors and commercial banks. He is the managing director of iiDevelopment, a small advisory firm specialized on private participation in infrastructure for developing countries. Since 1993, he has designed and/or implemented RE funds and transactions totaling >€500M and co-initiated several renewable energy start-ups. Since 1999, he has been working continuously for the World Bank Group, first as a staff member and recently as a senior consultant.

### **Juan Manuel Rojas**

Juan Manuel Rojas currently works as Senior Manager for Business Development at Bidas Corporation, a leading Argentinean oil and gas company. Previous to joining Bidas, Mr. Rojas worked for five years as Director for Business Development of Sideco Americana, where he was in charge of the design, project development and organization of renewable

and non-renewable power investment programs. During the past ten years, Mr. Rojas has also been consultant of private infrastructure companies, multilateral organizations and governments, in the design of tender processes related to power generation and of universal access programs, rural electrification funds and electrification master plans, in countries such as Colombia, China, Bolivia, Honduras, The Gambia, and Tanzania. Mr. Rojas was a Vice-Minister (undersecretary) of Energy and Gas of the Republic of Colombia, where he played a leading role in rural electrification projects. He also chaired the Energy and Gas Regulatory Commission of Colombia. He earned his BA in Economics and a Master in Economics from the Universidad de los Andes and a Master in Public Policy from Harvard University.

**Day 2 | Tuesday, May 8**

## **ENERGY ACCESS FOR THE PERI-URBAN/URBAN POOR**

### **Session 7**

#### **William (Billy) Cobbett**

William Cobbett has been Manager of the Cities Alliance since May 2006. He joined the Cities Alliance in March 2001 from the United Nations Human Settlements Programme in Nairobi, where he had designed and launched the Global Campaign for Secure Tenure. Born in South Africa, Billy was overall coordinator of Planact, an urban NGO providing policy and technical support to civic organizations and trades unions. He moved to the African National Congress (ANC) headquarters in 1992, where he was National Coordinator of the Department of Local and Regional Government, and Housing. After the 1994 General Election, he was appointed Director General of the National Department of Housing, reporting to Minister Joe Slovo. Prior to joining the United Nations, he was Director of Housing for Cape Town.

#### **Pratima Joshi**

Pratima Joshi is an architect and one of the founding member of the NGO Shelter Associates, where she has been working since its inception in 1993. Within Shelter, Pratima has worked intensively to co-ordinate all projects ranging from actual implementation of housing and sanitation projects to poverty mapping and related research projects. In October 2005 the BBC identified her as one of the leading slum Architects of India and included her in their 'India Week' program which was launched on the BBC website. In 2006 she was the recipient of the global 'Ashoka' Fellowship in recognition of her work as a Social Entrepreneur.

#### **James Njuguna**

James Njuguna is the Customer Relations and Marketing Manager at Kenya Power. He holds a Bachelor of Arts Degree in Administration, a Postgraduate Diploma in Mass Communication, an MBA majoring in Marketing and is currently pursuing a PhD at the University of Nairobi. He is a Council Member of the Marketing Society of Kenya, Member of Public Relations Society of Kenya and Founder Member of the University of Nairobi Alumni MBA Chapter. Over the years, James has spearheaded several successful initiatives to improve Kenya Power's business. He has coordinated innovations and new product development in alternative bill payment solutions, electronic and mobile phone billing, prepayment, call centre and customer service. The marketing programs he has initiated have among other solutions enabled Kenya Power to become a leader in the African continent in annual connectivity, which this year expected to reach 300,000 new connections, bringing the total number of customers connected to the electricity grid to two million.

#### **José Cavaretti**

José Cavaretti has worked in AES Eletropaulo for 30 years, where he is responsible for new products and services, energy efficiency program and projects for low income communities. He is also professor at FGV University on strategic and business planning with a focus on delivery to the "bottom of the pyramid". He graduated in 1980 as Electrical Engineer, and completed a post-graduate degree in 1994. He obtained a Master Title in 2005 at São Paulo University.

### **Connie Smyser**

Connie Smyser is majority owner and partner in Smyser Associates. She has over 30 years' experience in clean energy policy and program development and implementation in both the international and domestic arenas. Recently she has specialized in improved access to and affordability of energy in slums and peri-urban areas and non-technical loss reduction, including recommendations for LIGHT, Rio de Janeiro, on improving urban electricity access in the marginalized low income areas of the city; development and implementation of a prepayment and electricity efficiency program for existing customers in low income urban areas in Monrovia, Liberia; and for USAID, supported the development of an optimal feeder technology toolkit for distribution companies with theft problems in low income urban areas.

## **Session 8**

### **Masami Kojima**

Masami Kojima, Lead Energy Specialist, SEGOM, works mainly on energy poverty, petroleum sector reform, environment (indoor and outdoor air pollution from biomass and fossil fuel combustion), and transport. Her publications include "Who Uses Bottled Gas? Evidence from Households in Developing Countries" (2011), "Expenditure of Low-Income Households on Energy" (2010), "Coping with Oil Price Volatility" (2008), "Considering Trade Policies for Liquid Biofuels" (2007), and "Reducing Air Pollution from Urban Transport" (2005). Ms. Kojima has also been active in public outreach through publication of short briefing notes, including Petroleum Sector Briefing Notes and South Asia Urban Air Quality Management Briefing Notes.

### **Alex Evans**

Alex Evans has served as President and Chief Operating Officer of Energy Transportation Group (ETG) since 2008. Prior to this, Mr. Evans served as President of ETG International, and previously, as ETG's head of Global Technology Ventures. Before serving as an ETG executive, he served as Chief Operating Officer of Notifact Corporation, an ETG company in wireless networking and information management focused on improving efficiency in industrial and service-industry supply chains. Mr. Evans concurrently serves as the chief operating executive of the Global LPG Partnership, a public-private partnership coordinated with the United Nation's Sustainable Energy for All initiative. Mr. Evans received an MBA degree with high distinction (Baker Scholar) in 1993 from Harvard University and the BS degree cum laude in Electrical Engineering in 1985 from Yale University.

### **Renzo Bee**

Renzo Bee is the Director, International, for the LPG Business Line at Totalgaz, covering Asia, Africa, Europe and Latin America, representing 46 countries. He has 30 years' experience in the petroleum industry, of which 12 years were in the retail sector and 11 years working on LPG. He was involved in the merger of the Total LPG activity in Morocco, in the creation of Totalgaz Honduras and El Salvador and in the negotiation of a joint venture in China's Henan Province. Previously he was director member of the board of Elfgaz Saigon, Commercial Manager of Elf Nigeria, MD of Total Honduras, of Total El Salvador, of SDBP of Morocco (LPG), Director of Salamgaz (Morocco), Ouargaz (Morocco), Gazber (Morocco) and Ismailiagaz (Morocco). He is a member of the CEDS Auditors Members, Centre d'Etudes Stratégiques et Diplomatiques, of Paris. Mr. Bee holds a degree in Engineering, Arts & Métiers, postgraduate studies in Business Administration from IAE Paris, as well as a post-graduate degree in Strategy & Diplomacy from CEDS Paris.

### **Gusrizal Taib**

Gusrizal Taib is a Senior Vice President, Corporate Investment and Business Development, at Pertamina (Persero). He has held various senior positions at Pertamina since 2006. He holds a bachelor's degree in Mechanical Engineering, from the Institute Teknologi Bandung, Indonesia and a Masters in Shipping Management, from the World Maritime University, Malmo, Sweden.

### **Elvira Peynado Vengoechea**

Elvira Peynado Vengoechea is Promigas' Investments Coordinator. As such, Ms. Peynado, who joined the company in 2001, is responsible for leading the Assets Management portfolio of 35 companies in Latin America. During her time at Promigas, she has had experience in tariff negotiation for various natural gas transportation and distribution companies as well as in mergers, acquisitions and spin-off processes. Ms. Peynado has also led the structuring and implementation of projects such as the Public Partnership Project with the Dutch government and the Global Partnership on Output Based Aid. Through these projects more than 45,000 low income families in Colombia were benefitted with a subsidy to the fee for natural gas connection. Ms. Peynado earned a degree in business management from Universidad del Norte.

### **Luis Tineo**

Luis Tineo is a Senior Operations Specialist with the Global Partnership on Output-Based Aid. He has been staff of the World Bank since 1998, where he has worked extensively on the regulatory and contractual aspects related to the provision of public services in energy, water and sanitation, and transport. Luis is a member of GPOBA since its early inception stages, and has contributed to the design and implementation of various OBA projects in different regions, including Latin America, Africa, South East Asia, and South Asia. Currently he is part of the GPOBA team of advisors to governments interested designing and setting up national OBA facilities. Before joining the Bank, he worked at the Office of the Chief Economist of the Inter-American Development Bank, and served as General Counsel in the Ministry of Finance in Venezuela.

## **Day 3 | Wednesday, May 9**

### **RENEWABLE ENERGY RESOURCE MAPPING AND ENERGY ASSESSMENT TOOLS**

#### **Session 9**

##### **Jake Badger**

Jake Badger has carried out research and development within numerical wind resource assessment methodologies for over 11 years. He has been principle modeler in more than 15 international wind resource study projects. He is expert in application of the mesoscale modeling output (numerical wind atlas data) in microscale models (including WASP) for site specific verification and feasibility studies. His research goals include improving accuracy of resource assessment, obtaining reliable uncertainty estimation, and modeling of wake effects and application of satellite derived winds in resource assessment systems.

##### **Nicolas Fichaux**

Nicolas Fichaux is currently a program officer at the International Renewable Energy Agency (IRENA) based in the United Arab Emirates where he is leading work on the Global Wind and Solar Atlas in conjunction with the Clean Energy Ministerial. He was previously Head of Policy Analysis at the European Wind Energy Association, and prior to that he worked at the French Environment and Energy Management Agency, ADEME, covering renewable energy R&D.

#### **Session 10**

##### **Pierre El Khoury**

Pierre El Khoury is the Manager of the Lebanese Center for Energy Conservation at the Ministry of Energy and Water in Beirut, Lebanon. His main duties include overseeing strategies and programs related to the development of energy efficiency and renewable energy markets in Lebanon. Mr. El Khoury is the main author of the National Energy Efficiency Action Plan for Lebanon 2011-2015. The plan was adopted by the Government of Lebanon in November 2011, making Lebanon the first country in the Arab World to adopt such a plan. He also worked on the development of the National Energy Efficiency and Renewable Energy Action (NEEREA) with the Central Bank of Lebanon. Mr. El Khoury holds a Bachelor degree in Electrical Engineering and a Master degree in Engineering Management, both from AUB. El Khoury is a member of the Order of Engineers and Architects in Beirut.

### **Dr. S. Gomathinayagam**

Dr. Gomathinayagam is Executive Director at the Centre for Wind Energy Technology (CWET), an autonomous research and development institution under the Ministry of New and Renewable Energy, Government of India. A civil engineering graduate of the Regional Engineering College, Tiruchirapalli (Madras University), he obtained his post-graduate and doctoral degrees from IIT-M. After serving as project associate at IIT-M, he joined Structural Engineering Research Centre, Madras, in 1983 as a scientist and became deputy director and project leader of field experiments in wind engineering. He is one of the members of the team which won the CSIR Technology Shield in 2000 and AS Arya - UOR Disaster Prevention Award in 2001 for their contribution towards cyclone disaster mitigation. He has published over 80 interdisciplinary technical papers in national and international journals, conferences and seminars.

### **Joseph Tawiah Quayson**

Joseph Tawiah Quayson is a Rural Electrification Planning Engineer for the Ghana Energy Development and Access Project (GEDAP) of the Ministry of Energy, Ghana. His duties include extension of and management of electricity to rural communities in Ghana, and preparation of GIS mapping for electrification planning, including incorporating resource maps being prepared by the Energy Commission of Ghana. Mr. Quayson has BSc and MSc degrees from the Moscow Power Engineering Institute, Russia. He previously worked for the Electricity Company of Ghana (ECG) as a Design Engineer and a Project Engineer for the Rural Electrification division.

## **Session 11**

### **Hosni Ghedira**

Dr. Hosni Ghedira is Director of the UAE Research Center for Renewable Energy Mapping and Assessment at Masdar Institute, United Arab Emirates. He is also an Associate Professor at the Water and Environmental Engineering program at Masdar Institute. Before moving to the UAE, Dr. Ghedira spent six years at the City University of New York as an Assistant Professor and Research Associate Professor. He also acted as Director of the Environmental Remote Sensing and Image Processing Laboratory at the NOAA Cooperative Remote Sensing Science & Technology Center in New York for more than four years. Dr. Ghedira's current research interests include: application of remote sensing in environmental monitoring; solar and wind potential mapping; water resources management in water-scarce regions; satellite image processing; and remote sensing algorithm development. Dr. Ghedira has authored and co-authored more than 60 publications in peer-reviewed journals and referred conference proceedings.

### **Niyibizi Mbanzabigwi**

Niyibizi Mbanzabigwi is the project focal person of the Sustainable Energy Development Project, Rwanda. The project, co-financed by GEF and the World-Bank, aims to strengthen and consolidate the Rwandan renewable energy market, through strengthening policy, efficient utilization of biomass resources, sustainable development of micro-hydro resources, and development of solar energy and energy efficiency. Mr. Mbanzabigwi previously worked as a renewable energy expert in charge of solar and wind energy in the Rwandan Ministry of Infrastructure. He was also a lecturer in the Physics Department of the Kigali Institute of Science and Technology from 2003 to 2008. He was educated at the National University of Rwanda and the University of Le Havre (France), where he was awarded an MSc in Energy and Environmental Studies in September 2007.

### **Ajwad Musthafa**

Mr. Ajwad Musthafa is the Deputy Director of the Planning and Market Development Division of the Maldives Energy Authority (MEA). MEA is the energy regulatory body affiliated to Ministry of Environment and Energy. With expertise in the policy, regulatory, technical and environmental aspects of the energy sector, Mr. Musthafa acts as the focal point for many energy sector development projects in the Maldives. He holds an MSc in Energy Economics and Policy from the University of Surrey.

## Session 12

### Daran Rife

Daran Rife serves as Head of Mesoscale Modeling at GL Garrad Hassan where he leads global efforts to develop and implement mesoscale-model-based products and services. He has more than 20 years experience in mesoscale modeling and downscaling. Prior to joining GL Garrad Hassan, Daran worked at the National Center for Atmospheric Research, in Boulder, Colorado from 1999-2012, as a Project Scientist. He has served as a Principal Investigator on numerous US federally-funded projects focusing on topics ranging from short-term weather prediction to wind energy. He is the recipient of numerous awards from the National Weather Service, and has been Associate Editor of the scholarly journal *Weather and Forecasting* since 2009.

### Riaan Meyer

Riaan Meyer is the head of the Centre for Renewable and Sustainable Energy Studies at Stellenbosch University, South Africa. His main focus is solar resource assessment (both on site ground measurements and satellite derived data) and solar technologies including CSP, PV and CPV. He teaches various post graduate modules e.g. Renewable Energy Systems, Solar Energy and Conventional Energy Systems. He holds a B.Eng in Electrical Engineering and an MSc (Eng) in Mechanical Engineering.

### Harsh Goenka

Harsh Goenka is responsible for business development at GeoModel Solar, a consultancy firm based in Slovakia dealing with the planning, financing, and operation of solar energy systems. He holds a B (Eng) in Electrical and Electronics Engineering from the University of Bristol.

### Douglas G. Hall

Douglas Hall is the Water Energy Technical Lead of the Idaho National Laboratory's Wind and Water Power Program. INL is a US Department of Energy laboratory that supports the Department's Office of Energy Efficiency and Renewable Energy. INL also performs research for other federal and private organizations. Mr. Hall has led studies of the hydropower potential of US and Brazilian natural streams, the costs of developing and operating US hydropower projects, US hydroelectric plant ownership, and most recently studies of sites in the Pacific Northwest for stream obstructing dams and their dimensions and opportunities for new US pumped storage plants using natural waterbodies as auxiliary reservoirs. He holds a Masters Degree in Aeronautical and Astronautical Engineering from Ohio State University.

## Session 13

### Sameer Shukla

Sameer Shukla is a Senior Energy Specialist who joined the Bank in June 1996 in the South Asia Region. He is currently Program Team Leader for the Energy Assessments and Strategies Program at ESMAP. Prior to moving to ESMAP, he worked in the Sustainable Development Department of the Europe and Central Asia Region, where he was the team leader for the electricity and gas sector program in Turkey. He was responsible for preparing, appraising and supervising projects in renewable energy, energy efficiency, electricity transmission and distribution, generation rehabilitation, and gas transmission investments. Recent work includes leading the Private Sector Renewable and Energy Efficiency Project, which is the first project to be approved for the Clean Technology Fund (CTF). From 1994 to 1996, he worked in the Corporate Finance division of Price Waterhouse, focusing on consulting and financial advisory work in the energy sector. He holds an MBA (Finance) from the Indian Institute of Management Calcutta, India.

### Andreas Mästle

Andreas Mästle is an economist specializing in economic and financial modeling. He was previously with KfW in Germany in the Asia division as task manager for infrastructure projects and has worked in KfW's Export-Credit and Project Finance department. Andreas Mästle holds a PhD from Hamburg University.

**Pedzi Makumbe**

Pedzi Makumbe has the day-to-day responsibility for ESMAP's analytical tools in energy efficiency and low carbon development. He joined the World Bank's Sustainable Development Unit in 2010 as a Young Professional. He joined the World Bank from Gard Global Group, a Boston-based renewable energy consultancy where he was responsible for managing client relationships and leading internal teams responsible for covering the north eastern part of the United States. Prior to that, Dr. Makumbe conducted post-graduate research at Harvard University after completing his engineering PhD from the Massachusetts Institute of Technology.

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