



Office of Energy & Infrastructure
Bureau for Economic Growth, Education and Environment

2014 USAID Infrastructure Workshop
A Decade of Building Partnerships
December 15-19, 2014

Academy Hall | 1825 Connecticut Ave. NW, 8th floor | Washington, DC 20009

Monday, December 15

8:00 - 9:00 Sign-in and Registration

9:00 - 9:30 Welcome Remarks, Introductions and Housekeeping
Kevin Brownawell, Darren Manning and Ellen Dragotto

9:30 - 10:30 Panel Briefing: Construction Assessment Results & Implications

POC: Cynthia Clapp-Wincek, cclapp-wincek@usaid.gov

Key findings and recommendations from the Construction Survey conducted in 2013 by Agency staff. The survey found a broad and rich array of construction activities: throughout the world; very large to very small; primarily construction as well as minor infrastructure in awards intended to accomplish something else; newly constructed and rehabilitated; in areas with varying degrees of conflict. There will be an opportunity to ask questions of Bureau leadership about recommendations and next steps.

9:30- 9:45 Cindy Clapp-Wincek – Snapshot of the Portfolio

9:45-10:00 Charles North – Priorities and Need for Collaboration, potential impacts on policy, staffing, reporting and improving risk management practices.

10:00-10:30 Q&A, Cindy Clapp-Wincek will moderate

10:30 - 11:00 Coffee Break

11:00 - 11:45 Panel: Beyond Construction; Building Sustainable Infrastructure Across all Sectors

Moderator: Jesse Gutierrez, jgutierrez@usaid.gov

In international development we have long recognized the imperatives of local ownership and capacity for sustainability of our projects. However well intended, if projects are not firmly rooted in the communities' social, economic and environmental priorities and needs, they become white elephants and a waste of scarce resources.

As environmentalist and entrepreneur Paul Polak notes, 90 percent of the engineers are working for 10 percent of the world's population. The goal of this plenary is to open a line of communication between the "90 percent of the engineers" and the "engineers working for the 90 percent of the world's population."

This session will provide a general overview of issues of infrastructure sustainability using 'outside' approaches and best practices from the World Bank, American Society of Civil Engineers, Institute of Sustainable Infrastructure, US Green Building Council and Academia. We will explore the applicability of tools developed by these organizations in the context of international development and humanitarian assistance.

This session will help attendees:

- Understand some of the pillars of sustainability of municipal infrastructure;



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- Learn how to identify traps and vulnerabilities that create long term costs and risks for the community in which the infrastructure project resides;
- Identify applicability of “outside” approaches to USAID funded infrastructure projects;
- Learn about Life Cycle Assessment Considerations;
- Understand the difference between “doing the project right” vs “doing the right project”;
- Learn about best practices for ensuring community buy-in.

Panelists

Michael Sanio, M. ASCE, ENV. SP

Matthew Jelacic, Franklin Fellow with The Lab, The Mortenson Center at the University of Colorado.

James Close, World Bank, Director of Climate Change Group

Jason Hercules, U.S. Green Building Council

11:45 - 12:30 Policy Panel: USAID Disability

POC: Bryan Pittman, bpittman@usaid.gov

USAID’s Coordinator for Disability and Inclusive Development will provide an overview of our Disability Policy and its implementation. The discussion will focus on disability-specific programs to address targeted needs and integrating disability into our infrastructure programs.

12:30 – 1:30 Lunch

1:30 - 2:15 Transformative Technology in Infrastructure

POC: Ryan Shelby, rshelby@usaid.gov

This session offers a real time commentary on current trends in the world of sustainable innovation and technology. Panelists will tell us about cutting-edge and transformative infrastructure currently changing the face of energy, communications, and cities around the world. The panel will discuss the transformation of systems, operations and service delivery through technology, and the infrastructure trends they are most excited about – and why.

2:15 - 3:00 Public-Private Partnerships in Infrastructure Development

POC: Stephen Matzie, smatzie@usaid.gov

As applied to infrastructure, public-private partnerships (PPP or P3) have a more specific meaning than USAID's global definition of "partnerships." PPP arrangements are a way to distribute risk for financing, implementing, and/or operating complex projects that might be beyond the capacity of a local service provider. They are an important tool for infrastructure development but are also imperfect and have mixed experiences. In this plenary session, learn the PPP basics, some examples of their use at USAID, and some of the required inputs for making them successful.

3:00 - 3:30 Coffee Break

3:30 - 4:45 World Café



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World Café Topics 2014:

Rebecca Carter - Academic Research Competition on Urban Poverty by this year's workshop

Pam Baldinger - New 100million Household Technology Guarantee

Natalie Ewell – Gender and Water

Michael Cain– New Energy Division Learning Tools

Harry Sullivan - Infrastructure and Biodiversity

Chad Blevin/Carrie Stokes - GeoCenter

Cynthia Clapp-Wincek- Evaluation and Monitoring for Construction Projects

Dan Kingsley- Participating and Building in a Digital Economy

4:45 - 5:00 Wrap Up

5:00 - 7:00 Welcome Reception for Workshop Participants



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Tuesday, December 16

Modules 1, 2, 3
9:00 am – 12:30 pm

Module 1: Models of Operation and Maintenance

POC: Jesse Gutierrez, JGutierrez@usaid.gov

Sound operations and maintenance (O&M) practices are central to ensuring the long-term success of any infrastructure investment. O&M concerns often center on technical and financial capabilities of recipients of infrastructure assets. However, social and administrative considerations also play a large role.

This session will provide a general overview of requirements and best practices to consider when planning and designing infrastructure projects. Our speakers will provide valuable perspectives on O&M issues and cover specific lessons learned from USAID A&E and Construction contracts. Additionally, this session will feature a presentation from a domestic (USA) public works agency on basic strategies to maintain infrastructure performance over time, a bit of O&M 101.

Topics:

- Best practices to conduct 611(e) Certification
- Planning projects with maintenance in mind
- Design of low maintenance-cost features - Role of the A/E designer
- Operator and Management Roles and Responsibilities
- Asset management to ensure sustainability and longevity
- Accountability mechanisms (O&M Plans and manuals and Documentation and Tracking Systems)
- Budgeting & Funding?

- 9:00 - 9:30** **O&M 101 - Operator and Management Roles and Responsibilities - The O&M Plan**
Thomas Jacobus, PE - General Manager, Washington Aqueduct, Baltimore District, US Army Corps of Engineers
- 9:30 - 10:00** **The American Standards and its applicability in International Development Projects**
Daniel J. Hartman, APWA
- 10:00 - 10:30** **Low Maintenance Water Line Design, Construction and O&M in Haiti**
David Plum, PE - Senior Manager, Municipal Engineering, RK&K - Virginia Beach
- 10:30 - 11:00** Coffee Break
- 11:00 - 11:30** **Planning for O&M in USAID Projects: The 611(e) Certification Process**
Ross E. Hagan, Director Office of Infrastructure and Engineering, USAID/Pakistan
- 11:30 - 12:30** **Panel Discussion including samples from the USAID Missions**



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To close the module, we will have a panel discussion between our O&M experts and engineers from USAID missions around the world. The goal of the session is to find similarities and best practices that can be used to improve USAID funded infrastructure projects.

Module 2: Water Supply & Sanitation

POC: Tony Kolb, akolb@usaid.gov

This module focuses on two emerging issues in USAID WASH programming: small piped networks and safe disposal of fecal sludge. Small piped systems are increasingly appropriate for the areas peripheral to the main utility service area, but require different considerations than traditional community water points. Likewise, as USAID increasingly grapples with sanitation concerns, it is no longer sufficient to build demand and provide access to household latrines. There has to be attention to how fecal sludge, once collected, is disposed of.

9:00 - 9:15 Moving Beyond Hand Pumps

Tony Kolb, USAID/E3

A brief introduction to challenges facing USAID programs investing in small piped water supply improvements.

9:15 - 9:45 Designing in Sustainability: Small Town Water Supply in Liberia

Alioune Fall, Tetra Tech

The USAID Liberia Municipal Water Project was designed to sustainably re-establish piped water supply access in three small provisional towns. The presentation will describe the approach used to establish cooperative oversight between the national utility and local stakeholders and low-cost operation and maintenance design considerations.

9:45 - 10:15 Multi-year Management Contracts as a Mechanisms for Community Management of Small Piped Systems in Rural Towns

Jonathan Annis, Sanitation Advisor, WASHPlus

Sustainable operations of piped water systems by communities themselves often proves challenging. Jonathan will discuss how this has been approached in Madagascar and elsewhere by the USAID NGO partners

10:15 - 10:30 Discussion

10:30 - 11:00 Coffee Break

11:00 - 11:30 Moving Beyond Latrines

Jesse Shapiro, USAID/GH

This is an introduction to challenges in urban sanitation and to recent efforts to conceptualize the challenge using the fecal flow diagrams. The presentation will describe some of USAID's recent efforts to solve this development challenge through mission activities and the new urban sanitation "Problem Set" under the leadership of the Global Development Lab.

11:30 - 12:00 Progress on Urban Sanitation in a Fast Growing City in Africa: Juba



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Barbara Senkwe, Tetra Tech

Early on after the end of the civil war, the new government in South Sudan laid out ambitious plans to fully capture and treat wastewater in its emerging urban areas. This dream died long ago. Instead, USAID has been working with municipal authorities to more incrementally and affordably improve access to sanitation and management of fecal sludge with a particular focus on sustained private sector participation.

12:00 - 12:30 Sharing Ideas on Innovative Approaches

Katy Beggs, USAID/E3 and Anand Rudra, USAID/India

Facilitated discussion on what is needed to fit together pieces of the urban sanitation puzzle in low resource settings. Innovative public private partnerships and building municipal leadership.

Module 3: Urban Governance and Services: Improving Utilities and Service Delivery

POC: Andy Golda, agolda@usaid.gov

Everyday approximately 180,000 people move to cities and over the next 15 to 20 years, many cities in Africa and Asia will more than double in size. Urban and local governments throughout the developing world cannot provide the services and governance required to keep up with this massive urbanization. Climate change also poses a major risk to cities in the developing world as more and more people move to climate-vulnerable localities. This module will familiarize participants with USAID's *Service Delivery in an Increasingly Urbanized World* policy and agency best practices in urban and local service delivery and governance as well as municipal approaches to climate change.

9:00 - 9:45 The Urban Future

Andrew Golda, Office of Energy and Infrastructure, USAID

Over the next four decades virtually all of the population growth in the world will take place in urban areas resulting in approximately 1.5 billion more people living in cities by 2030. This demographic shift is happening most quickly in Africa and Asia. The majority of cities that we will see by 2030 in both of these regions don't exist yet. This shift will change our understanding of poverty and create new challenges for our mission as an agency. At the same time, there are immense opportunities with the density and economies of scale presented by cities.

9:45 - 10:30 Cities and Climate Change: Mainstreaming Climate into Urban Development

Judit Deilinger and Elizabeth Strange, International City/County Management Association

The effects of urbanization and climate change are converging in dangerous ways. Cities are major contributors to climate change, while at the same time, cities and towns are heavily vulnerable to climate change. This session will look at examples of sub-national level responses to this twin challenge of climate change and urbanization highlighting promising practices from ICMA's guidebook developed under the CityLinks Program.

10:30 - 11:00 Coffee Break

11:00 - 11:45 Urban Sanitation and Governance: Implementing USAID's Urban Policy



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The Sanitation “Value-Chain” Approach in Nicaragua

Ben Feit, Senior Manager, Deloitte Consulting

Using Data and Public Participation to Improve Solid Waste Management in Peru

David Green, Senior Associate, Tetra Tech ARD

Tailoring Wastewater Treatment Solutions to Resource-Poor Communities in Jordan

Russ Misheloff, IDIQ Manager – Making Cities Work, ECODIT

11:45 - 12:30 Questions and Answers

Panel Moderator: Mike Keshishian, USAID’s Center for Excellence in Democracy, Human Rights and Governance

12:30 – 1:30 Lunch

Modules 4, 5, 6
1:30 - 5:00 pm

Module 4: Greening the Grid

POC: Jennifer Leisch, jleisch@usaid.gov

Countries throughout the world are endorsing aggressive renewable energy targets as a critical source of domestically sourced, low-carbon electricity. At high penetration levels, the increased variability and uncertainty of wind and solar generation affect how the power system is operated. This module will provide an overview of the impact of wind and solar energy on the grid, and pathways of action that countries can take to change how they plan for and operate the power system. It will include real-world examples of grid integration, and a discussion with experts from the National Renewable Energy Laboratory showcasing new "Greening the Grid" tools and assistance for achieving renewable energy goals.

1:30 - 2:15 Renewable Energy Grid Integration

Jaquelin Cochran, National Renewable Energy Laboratory

Variable renewable energy, such as wind and solar, provides a clean, carbon-free source of power. At high penetration levels, however, wind and solar variability, uncertainty, and geographic concentration can affect the planning and operation of the power system. In this session, we discuss the solutions that policy-makers, regulators, and grid operators have taken to integrate wind and solar and meet RE targets. Come hear about the myths, misperceptions, costs, and options for scaling up grid connected RE.

2:15 - 3:00 Case Study: Mexico Grid Integration Roadmap

Michael Milligan and Jaquelin Cochran, National Renewable Energy Laboratory

USAID has worked with Mexico to develop a Renewable Electricity Grid Integration Roadmap, studies. The Mexican department of energy has adopted this roadmap to form an advisory group on grid integration, guide its funding decisions, and reform its wholesale electricity market. In this



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session, we will walk through this case study to understand how best practices for grid integration can be applied to a particular context.

3:00 - 3:30 Coffee Break

3:30 - 4:15 **Exercise: Interpreting Grid Integration Studies**

Jennifer Leisch, USAID/E3/GCC and Michael Milligan, National Renewable Energy Laboratory

What can a grid integration study tell us? How is wind and solar resource assessment data developed and used? How does adding more wind and solar into the grid impact the generation profile of thermal units? What new types of resources (e.g., demand response, storage) might be cost-effective to add? In this hands-on session, learn how to interpret an integration study and use it as a basis for assessing gaps and opportunities to help a country move forward in reaching renewable energy targets.

4:15 - 5:00 **Greening the Grid: Designing a New Grid Paradigm**

Jennifer Leisch, USAID/E3/GCC and Michael Milligan and Jaquelin Cochran, National Renewable Energy Laboratory

Many countries are interested in making improvements to their power system—from improving forecasting to adding storage. Learn about what resources are available to you and your country partners to prioritize and implement actions to support RE grid integration. Come prepared with questions about how to address challenges specific to your countries, and we can as a group see how implementation would vary in different contexts.

Module 5: Cost-Benefit Analysis of Investments in Commercialization of Water and Sanitation Systems

POC: Kristen Shubert and Caroline Smith, kshubert@usaid.gov

This module will demonstrate how financial and economic analysis (using cost-benefit analysis – or CBA) can be used to effectively design investments in municipal water systems and measure key trade-offs that USAID confronts in its infrastructure projects that affect sustainability and cost-recovery. This module can also be useful for power projects, since the methodology is very similar. CBA of infrastructure projects is being used by Bureaus and Missions worldwide as a tool to design better projects and to improve resource allocation.

1:30 - 2:00 **Cost-Benefit Analysis of Infrastructure Programs: An Overview**

Kristen Schubert, Economist, USAID/E3

What is Cost-Benefit Analysis? How can this tool help answer critical questions about sustainability, viability, and stakeholder incentives? What are the risk variables and how do we mitigate them?

2:00 - 2:50 **Fundamentals of water project CBAs**

Caroline Smith, Economist, USAID/E3

In many countries, improvements to the municipal water sector will be extremely beneficial. But which improvement demonstrates the best and most efficient use of funds relative to alternative interventions? We will discuss how to use financial and economic CBAs to address this question.



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2:50 - 3:00 **Introduction to the CBA Case Study**
Kristen Schubert, Economist, USAID/E3

3:00 - 3:30 Coffee Break

3:30 - 4:40 **Participants analyze a CBA case study**

Participants will break into small groups of 4-5 people to analyze a CBA of a municipal water project in Afghanistan. Each group will have access to a computer to critically examine key project and risk variables and discuss the strengths and weaknesses of this hypothetical project design.

4:40 - 5:00 **Participants report on the results of the CBA Case Study**

General discussion about the key design features and trade-offs of the water sector case study.

Module 6: G2G Funding for Infrastructure

POC: Bob Macleod, rmacleod@usaid.gov

The G2G module will focus on the Agency's progress on meeting USAID's Forward Objective 1: Strengthen Partner Country Capacity to Improve Aid Effectiveness and Sustainability, related to investments in infrastructure. This module will look at current programs in the Philippines, Pakistan, Haiti and Ghana that provide good examples towards the achievement of this goal. This session will cover the needed checks and balances to provide due diligence in construction oversight such as third party quality assurance contracts, ensuring that G2G transactions are transparent and accountable, and it will include a panel discussion of the benefits and challenges of G2G agreements.

1:30 - 2:15 **ADS 220 & Government-2- Government Infrastructure Construction**
Ross E. Hagan, USAID/Pakistan, Islamabad-Office of Infrastructure and Engineering

ADS 220, "Use and Strengthening of Reliable Partner Government Systems for Implementation of Direct Assistance" is discussed including the following topics: Financing G2G Projects, Contracting & Agreement Officers' Role; Fixed Amount Reimbursement (FAR)- outputs or associated milestones, Cost Reimbursement procedures, Cost Realism Analyses and Cost Escalation Adjustment

2:45 - 3:30 **Pakistan Infrastructure program**
Zaki Saad, USAID/Pakistan, Islamabad-Office of Infrastructure and Engineering

This presentation highlights the effect of getting a local IQC and being involved in the concept, design, and to show outcome, differences and related benefits. Hands-on training on construction management in partnership with the federal highway agency will be presented too.

3:30 - 4:00 Coffee Break

4:00 - 4:45 **Using FARA Procedures in Designing and Construction of Schools in Ghana -USAID/ Ghana Education Office**



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Nana O. Akumia, noakumiajnr@usaid.gov), support from Jacob Greenstein (E3/E&I)

The FARA procedure was implemented to design and construct 15 District Education Offices, 49 Junior High Schools, 50 Kindergarten blocks and 45 Toilet Blocks in 159 sites in all the ten Ghana districts. The primary objective is to construct safe and functionally efficient facilities to reduce the infrastructure deficit confronting the education sector of Ghana. Issues and lessons learned are presented, including how to support the implementation of the design and construction quality control, and quality assurance activities to produce reliable costs and to accelerate the construction activities.

4:45 - 5:30

How to accelerate infrastructure reconstruction works and support FARA-using innovative performance based procurement procedures for construction contracts

Jacob Greenstein, USAID/E3/E&I

Common innovative contracting/procurement procedures include Performance-Based Lump-Sum (PBL) Contracting or fixed cost contracts are useful for the implementation of Fixed Amount Reimbursable Agreement (FARA) using Host Country Contracting systems. Innovative PBL construction contracts include: Geo-Hazards & Construction Risk Management and Risk Sharing; A (cost) + B (time or other incentives) Bidding; Pay Equation & Value Engineering; Lane, Shoulder, Airside Rental; Construction and Maintenance Warranties, and Urgent/Emergency Job Order Contracting, to be discussed in the presentation.



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Wednesday, December 17

Modules 7, 8, 9
9:00 am - 12:30 pm

Module 7: Global Climate Change Mitigation and Infrastructure

POC: Jennifer Kane, jkane@usaid.gov

This module will cover the latest developments in low emission development strategies (LEDS) with a special focus on clean energy infrastructure. Participants will also learn more about current developments in integrating gender and clean energy infrastructure and the latest on USAID's Global Climate Change indicators for clean energy infrastructure reporting. Importantly, participants will have a chance to explore how their work in developing countries relates to a country's LEDS.

9:00 - 9:30 Low Emission Development Strategies and Infrastructure in 2014

Jen Leisch, USAID/E3/GCC

Countries around the world are transitioning from Low Emission Development Strategies (LEDS) planning to LEDS action. Hear the latest developments in low emission development strategies with implications for infrastructure.

9:30 - 10:30 Activity: Integrating Low Emission Development and Infrastructure

Becky Chacko, USAID/E3/GCC and Jenny Kane, USAID/E3/GCC

Low emission development is not just for Global Climate Change programming! Explore how low emission development and your country's LEDS relate to your work in this interactive session.

10:30 - 11:00 Coffee Break

11:00 - 12:00 Gender and Clean Energy Infrastructure

André Mershon, USAID/E3/GCC, Eric Adams, SUWASA Kenya, Natalie Elwell, USAID/E3/GENDEV

Through the Gender Equality for Climate Change Opportunities (GECCO) initiative, USAID and the International Union for Conservation of Nature (IUCN) are exploring the intersection of gender and renewable energy. Learn more about recent developments and momentum at the intersection of gender and clean energy infrastructure, including the integration of gender into the water utility sector in Kenya and applications for the energy sector.

12:00 - 12:30 Global Climate Change Indicators for Clean Energy Infrastructure Reporting

Kate Faulhaber, USAID/E3/GCC and Kathryn Stratos, USAID/E3/GCC

Greenhouse gas emissions reductions and finance leveraged are important outcomes for clean energy programming. Learn the latest updates on Global Climate Change indicators for clean energy infrastructure reporting.



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Module 8: Green Infrastructure

POC: Darren Manning, dmanning@usaid.gov

Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier community environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to storm water management systems that mimic nature by soaking up and storing water. This session will review the use of green infrastructure in both the US and developing countries, and will address such aspects as its multiple benefits, where it has been used successfully, and aspects such as cost, maintenance and operations.

9:00 - 9:15 Introductions and Agenda Overview

Darren Manning, USAID/E3 Urban Development Officer

This session will introduce the audience to the increasing use of green infrastructure concepts in the United States, current Green practices in USAID's work, and opportunities for a broader application in developing countries.

9:15 - 9:25 Video and discussion

A brief video presentation of Green Infrastructure Initiatives in American Cities.

9:25 - 10:30 Panel discussion: Current Best Practices in Green Infrastructure

Panel participants will discuss the benefits, challenges, and technical requirements in planning for Green infrastructure and how current initiatives can incentivize its greater from the national to the community level.

Panel Participants:

Sarah Woodhouse Murdock, The Nature Conservancy

Hope Herron, Tetra Tech

Marcus Lee, World Bank

Jason Berner, EPA

Clark Wilson, EPA

10:30 - 11:00 Coffee Break

11:00 - 11:40 The District Department of the Environment (DDOE) Riversmart Program

Peter Hill, Program Director, DDOE Riversmart Program

DDOE's RiverSmart programs help to reduce storm water runoff that harms the District's waterways and the Chesapeake Bay. RiverSmart programs provide financial incentives to help District property owners install green infrastructure such as rain barrels, green roofs, rain gardens, permeable pavement, shade trees, and more. These practices allow rainwater to stay on site and soak into the ground, where natural processes help remove pollutants



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11:40 - 12:30 Walking tour of Green Infrastructure projects near FHI 360

Module 9: Effective Management of Water for Food

POC: Heather Skilling, hskilling@usaid.gov

Facilitator: Moffat Ngugi, USAID/BFS

This module looks at the critical linkage of water and food and the need to accurately understand and manage water for agricultural uses. This session starts with an approach to sustainable agricultural utilization of groundwater considering a watershed approach and concludes with examples of MCC and USAID programming seeking to responsibly increase use of water for food production in food insecure countries.

9:00 - 9:15 USAID Water and Development Strategy and Food

Chris Kosnik, USAID/E3/Water Office

A brief introduction to the Strategic Objective 2 of the USAID Water and Development Strategy including plans to track progress and initial guidance to the field.

9:15 - 10:30 Groundwater for Irrigation: Avoiding pitfalls through planning

Vince Uhl, UHL and Associates

Overview of the opportunities and constraints of shallow groundwater development for small-scale agricultural irrigation. A practical spreadsheet approach for managing these opportunities and constraints will be demonstrated via a pilot analysis of two watersheds in Ethiopia where irrigation from groundwater sources has begun in recent years. The importance of evaluating groundwater quality for irrigation usage will be addressed and changes in groundwater recharge and sustainability due to climate change will be examined particularly in the context of the two pilot watersheds in Ethiopia.

10:30 - 11:00 Coffee Break

11:00 - 11:45 Farm Water Conservation Practices in the Sahel

Kalim Hanna, USAID/Senegal

Soil water conservation (SWC) techniques like Zai planting, but also stone bunds (stone walls built along contours to help slow surface water runoff) not only help to increase food yields, but they help farmers to grow plants on otherwise degraded and non-productive land. Farmer-managed natural regeneration (FMNR) is a low-cost, sustainable land-restoration technique that involves the systematic regeneration and management of trees and shrubs from tree stumps, roots and seeds. FMNR can be used to restore degraded forests, thereby reversing biodiversity loss and reducing vulnerability to climate change.

11:45 - 12:30 MCC Experience with Irrigation

Robert Fishbein, Water Group MCC



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MCC has an extensive irrigation portfolio with large infrastructure investments (valued at USD 917.5 million in eight countries). With five projects completed and three more under implementation, MCC works to develop its knowledge of what works and what doesn't. MCC recently deepened its knowledge by commissioning an evaluation of its irrigation portfolio.

12:30 - 1:30 Lunch

Optional Lunchtime Events:

In-person CLEER Tool Help Desk

Greg Carlock (ICF International)

The Clean Energy Emission Reduction (CLEER) Tool has been developed for reporting on the required standard indicator for clean energy projects: greenhouse gas emissions, estimated in metric tons of CO2 equivalent, reduced, sequestered, and/or avoided as a result of USG assistance. Come try out various emissions reductions calculators and receive one-on-one assistance on using them, including for infrastructure projects and programs with greenhouse gas reductions goals.

Haiti Video

Modules 10, 11, 12

1:30 - 5:00 pm

Module 10: Global Climate Change Adaptation and Infrastructure

POC: Jennifer Kane, jkane@usaid.gov

This module will provide a brief update on the newly released Climate Resilient Development Framework and Executive Order on climate-resilient development, and their implications for infrastructure. Participants will have a chance to explore the intersection of adaptation and infrastructure through an extended activity and will learn lessons from the Climate Resilient Infrastructure Services Pilots. Participants will also receive an introduction to the issue of energy resilience in the face of increasingly extreme weather and options for improving the stability and reliability of power.

1:30 - 1:40 Adaptation and Infrastructure in 2014

Becky Chacko, USAID/E3/GCC and Jonathan Cook, USAID/E3/GCC

The past year has seen the release of the Climate Resilient Development Framework and a new Executive Order on climate-resilient development, which will affect USAID's work across sectors. Hear a brief update on these developments in adaptation with implications for infrastructure.



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1:40 - 3:00 Adaptation Game: Integrating Adaptation and Infrastructure

Wendy Jaglom, ICF International

This game, “Accelerating Adaptation: A Game on Fast-Track and Long-Term Choices,” will give participants the opportunity to practice making decisions under climate uncertainty and to explore the costs, benefits and tradeoffs between different infrastructure adaptation options.

3:00 - 3:30 Coffee Break

3:30 - 4:00 Climate Resilient Infrastructure Services Pilots

Joanne Potter, ICF International

The Climate Resilient Infrastructure Services Program is in its final year of operation in countries such as the Dominican Republic, Mozambique, Peru, and Vietnam. Hear lessons learned from the intersection of adaptation and infrastructure in coastal cities around the globe.

4:00 - 5:00 Energy Resilience

Stephen Hammer, World Bank

As climate change increases the frequency and intensity of severe weather, more severe hurricanes, winter storms, heat waves, and floods are already testing the resilience of energy systems. Learn about energy resilience and options to improve the stability and reliability of power, such as hybrid mini/microgrids, clean energy generation, smart grid technology, and energy storage.

Module 11: Energy Infrastructure: Turning Around Troubled Utilities

POC: Allen Eisendrath and Simone Lawaetz, aeisendrath@usaid.gov, slawaetz@usaid.gov

Many electricity utilities in developing countries are bankrupt - unable to generate enough revenues to cover their costs and instead rely heavily on government subsidies to plug the deficit. There are a number of reasons why utilities are in the red and unable to maintain their existing infrastructure much less expand their networks and invest in clean energy. Using a user-friendly, utility financial model, participants will assess the impact of changes to tariffs, collection efficiency, generation costs and other expenses on the financial viability of a utility. This module will also provide a more in-depth look at how Governments and utilities can contract with the private sector for developing new power plants, and how these procurement processes can impact the price of power.

1:30 - 2:15 Best Practices for Developing Private Power Generation Projects

Adrian Rouse, Deloitte

A successful Independent Power Producer (Program) can expand electricity supplies for developing countries while providing investors with a fair return on their investment and encourage future private investment. Drawing from previous experiences with IPP programs - both successes and failures - this session will explore the necessary factors for effectively designing, negotiating and implementing an IPP.

2:15 - 3:00 Modeling the Financial Viability of the Haiti Caracol Industrial Park (CIP) Utility

Simone Lawaetz, USAID and Liz Pfeiffer, Deloitte



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As part of the USG post-quake response, a new mini-utility was developed in the north of Haiti with the support of USAID to provide power to a new industrial park and surrounding communities. It's now operating deep in the red, requiring ongoing financial subsidies from the USG and the Government of Haiti. Using a financial model, participants will explore how changes in the cost of generation, billing and collections, number of customers, and other variables can dramatically impact the tariff that would need to be charged by the CIP utility to achieve financial sustainability.

3:00 - 3:30 Coffee Break

3:30 - 5:00 **(Continued) Modeling the Financial Viability of the Haiti Caracol Industrial Park (CIP) Utility**
Simone Lawaetz, USAID and Liz Pfeiffer, Deloitte

Module 12: Transportation and Road Systems

POC: Jacob Greenstein, jgreenstein@usaid.gov

This Module will highlight best practices of roads investment and maintenance works; Gender and climate change considerations in roads/transport projects; successful farm to market roads planning and/or implementation projects, PPP of transport projects; cost reliability and cost effectiveness considerations of transport investment; and transportation research topics including safety, logistics, sustainable, intelligent and implementation of high risks transport projects.

1:30 - 2:15 **Best Practices of roads planning and implementation projects**
Jacob Greenstein, USAID

Best practices of roads investment and maintenance projects, considering gender, climate changes, and environmental and development effectiveness challenges in design, construction and maintenance works of roads and bridges.

2:15 - 3:00 **Best practices for Public Private Partnership (PPP) for Transport Infrastructure Development**
Mauricio Gutierrez, Chemonics

PPP for transport development is a key development tool to address the lack of basic infrastructure which is a major constraint for economic growth and poverty alleviation in the developing world. This presentation shows how using PPP's can support mobilizing private capital needed to accelerate the implementation of transport projects, support the provision of operation and maintenance, increase efficiency of the execution of infrastructure projects, and enhance the technical and institutional capacity of government agencies.

3:00 – 3:30 Coffee Break

3:30 - 4:15 **Trial Low Volume Sealed Roads (TLVSR): Gumbo to Rajaf feeder road, Central Equatoria State, Republic of South Sudan**
Richard Nyarsuk, USAID/South Sudan



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This presentation will discuss recent research from South Sudan on how to improve the performance of low cost rural roads using a thin layer of black-top road surface materials including Cheap Seal, Otta Seal, premix surfacing, Sand Seal, Cape Slurry seals, Single chip seal, Penetration Macadam and Otta Sea, to produce durable and impervious road surfacing.

4:15 - 5:00 Innovative transportation topics related to procurement, development, and economic growth-lessons learned from LAC countries

This presentation will address innovative topics including how to accelerate transport infrastructure reconstruction works using innovative performance based procurement procedures for transport construction contracts and how best to use: Host Country Contracting procedures including Geo-Hazards & Construction Risk Management and Risk Sharing procedures, A (cost) B (time or other incentives) Bidding procedures, Pay Equation & Value Engineering, Lane, Shoulder, Airside Rental procedures, Construction and Maintenance Warranties and Urgent/Emergency Job Order Contracting

Thursday, December 18

Modules 13, 14, 15
9:00 am - 12:30 pm

Module 13: Health Infrastructure – USAID Programming Challenges

POC: Tony Kolb, akolb@usaid.gov

This module aims to establish a community of practice around USAID’s significant on-going investments in the rehabilitation and construction of health facilities. The morning session will summarize recent research on the extent of these investments and concerns among staff and other stakeholders regarding key implementation challenges and sharing of lessons learned from recent activities in Ethiopia.

9:00 - 10:00 USAID and Health Infrastructure

John Gavin, CDM-Smith

A summary of research into the extent of USAID investments in health infrastructure and the concerns of USAID staff and partners regarding this work.

10:00 - 10:30 Lessons: Project Design

Roger Sydney, USAID/Ethiopia

The Ethiopia Health Infrastructure Project (EHIP) includes design and construction of 10 medical storage warehouses, 28 new, and 50 renovated health clinics and the first full-service blood collection and treatment center in Ethiopia. The talk will focus on lessons learned regarding project design and procurement, construction (project management, quality control, and value engineering), and project closeout.



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10:30 - 11:00 Coffee Break

11:00 - 11:30 **Lessons: Construction Oversight**

FNS Engineer, USAID/Ethiopia

Discussion of the EHIP continues with lessons learned regarding construction oversight (project management, quality control, and value engineering) and project closeout.

11:30 - 11:45 **Discussion**

11:45 - 12:15 **Improving Facility Design: The Participatory Approach**

Ed Galindo, CDM-Smith

Sharing of approaches to ensuring that facility designs meet stakeholder needs in a cost effective manner.

12:15 - 12:30 **Discussion**

Module 14: Innovations and Best Practices from Decentralized Energy Initiatives:

POC: Ryan Shelby, rselby@usaid.gov

The expansion of access to reliable and affordable electricity service is considered to be a key component in maintaining human well-being and increasing the economic growth of a country. However, it is estimated that ~18.5% (1.27 billion people) of the world's population still lack access to electricity in 2010. In general, there are two main electrification strategies: centralized and decentralized electricity grids and systems. This module examines the business models, financial models, technical designs, and regulatory environment needed to support the design, implementation, reliability, and scaling of energy systems in urban, rural, and remote areas. Participants will receive an overview of the best practices and lessons learned from decentralized energy systems as well as gain an understanding of aggregate technical & commercial losses, site selection, customer identification, resiliency, and other design issues to consider when evaluating electrification project proposals.

9:30 - 10:00 **Decentralized Energy Systems: An Overview**

Ryan Shelby, USAID

Outline of the entire session, and discussion of why there is an interest in decentralized energy systems in urban, rural, and remote areas. Participants will be introduced to different approaches to electrification strategies, and gain a broad understanding of technological, economic, and policy factors that are considered in the design and selection of electrification systems.

10:00 - 10:30 **Millennium Challenge Corporation's (MCC) Investments in the Power Sector**

Brandon Tracy, MCC

This presentation discusses MCC investments in the power sector, using the Indonesia, Malawi, and Tanzania compacts as examples. Participants can expect to understand better how the MCC



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develops investments in the power sector and why such investments are often quite different in different countries.

10:30 - 11:00 Coffee Break

11:00 - 11:30 Financing Mini-Grid Systems in Emerging Economies

Gary A. Bojes, USDA

This section will provide an introduction to approaches that USDA has employed in the USA to design, finance, and install power generation systems in rural America.

11:30 - 12:00 Measuring Inferred Energy Access from Power Generation Systems

Sudeshna Ghosh Banerjee, World Bank

This section will provide an introduction to methodology that World Bank has created to estimate the number of new household connections that could have been supported by capacity generated by World Bank projects.

12:00 - 12:20 Practical Exercise

Ryan Shelby, USAID

Divided into groups, the participants will be given scenarios of sample communities and make determinations about what combination of power generation technologies and business models would be appropriate to pursue.

12:20 - 12:30 Questions and Answers

Ryan Shelby, USAID

Module 15: Digital Development and Best Practices

POC: Dan Kingsley, dkingsley@usaid.gov

The digital development module will focus on the program priorities outlined in the Agency's new Digital Development Team of the US Global Development Lab Office (LAB). The Digital Inclusion team from this office will showcase case studies, program successes, global alliances, and our work with local governments on National Broadband Plans, Universal Service Funds, Women programs, global alliances facilitating internet affordability, and mobile finance initiatives. The session will feature presentations, discussions, and examples of field successes, with ICT4D experts and Washington staff on connectivity, mobile finance, legal and regulatory policy, and issues related to broadband build-out for underserved and poor rural communities.

9:30 - 9:35 Introduction: The Digital Development Team and Digital Inclusion

Jonathan Dolan and Larissa Fast

9:35 - 9:45 What does it look like to have full participation in the digital economy?

Jonathan Dolan and Larissa Fast



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9:45 - 10:30 **Digital Inclusion: policies and practices for ensuring full participation in the digital economy**
 David Townsend

10:30 - 11:00 Coffee Break

11:00 - 12:30 **Participating in a digital economy: Three case studies on how digital technologies can enhance USAID projects.**

Pakistan Mission: Real-Time Mobile Data

Kanwal Bokharey and Nadeem Habib from the USAID Pakistan Mission will present on the Mission’s real-time mobile data work. They will highlight the Mission’s “smart meter” and “Public private partnership for technology, information, and financial mobile solutions” projects and upcoming digital initiatives.

Digital Infrastructure in Emergencies

Andrew Karlyn from the USAID Digital Development Team will talk about payment infrastructure, data collection, and physical infrastructure in emergencies, with a focus on the Ebola response in Liberia.

Global Development Lab: mWater

John Feighery from mWater will present their partnership with USAID’s Global Development Lab. mWater is a non-profit tech startup that created an app for mobile users to instantly test and analyze water quality from local sources and share this information on their global, open-source water monitoring database.

12:30-1:30 Lunch
Optional Lunchtime Event: FSO Backstop Breakouts
 Ag-10, ENG-25, ENV-40

Modules 16, 17, 18
1:30 - 5:00 pm

Module 16: Health Facilities and Contextual Design

POC: Tony Kolb, akolb@usaid.gov

This module continues the effort to establish a community of practice around USAID’s significant on-going investments in the rehabilitation and construction of health facilities. The afternoon session focuses on recent experiences with facility rehabilitation (including lesson from Ethiopia and work in Haiti to improve the reliability of power supplies) and issues of medical facility waste management.

1:30 - 1:45 **Recap of AM Session Highlights**
 John Gavin, CDM-Smith



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- 1:45 - 2:15** **Lessons: Rehabilitation Work**
Roger Sydney, USAID/Ethiopia

Summary of lessons learned regarding working with existing structures versus new construction in Ethiopia.
- 2:15 - 3:00** **Incremental Power Improvements: Wiring Rehab in Haiti**
Mark Oven, Tetra Tech

Rewiring and other improvements in existing buildings can be a low cost alternative to improving the utilization of power in some health facilities. Recent experience in Haiti will be highlighted.
- 3:00 - 3:30** Coffee Break
- 3:30 - 4:00** **Constituents of Medical Waste and Management Concerns**
Kristina Meson, EPA

An overview of the US experience with regulation and technology choice.
- 4:00 - 4:30** **Overview of the incineration and material handling processes for medical waste**
Scott Ackerson and Tom Layloff, PFSCMS

Flow charting of equipment used to incinerate medical waste.
- 4:30 - 5:00** **Case Study Discussion: Incinerator Challenges in Namibia**
Jerry Rubin, USAID/E3

Help us think about how USAID could have avoided the problems confronted at a Namibia hospital.

Module 17: Education Infrastructure

POC: Rebecca Carter, recarter@usaid.gov

Around the world, USAID's work with education, including the All Children Reading Grand Challenge for Development, offers exciting opportunities to better utilize technology to improve child literacy - a key aspect of development for many countries. But as cutting-edge technology is increasingly utilized to improve learning, how must school infrastructure change to support and accommodate it? Participants in this interactive module will explore this and similar questions by focusing on case studies of how the improvement of education resources and methodologies within schools requires shifts in infrastructure as well. This module will feature case studies of USAID's work in building infrastructure to promote education in Pakistan, Jamaica and Ghana.

- 1:00 - 1:15** **Introduction**
Rebecca Carter

The session will be introduced with an overview of USAID's Education Strategy, especially Goal 3, Increased equitable access to education in crisis & conflict environments for 15 million learners by 2015, and Result 3.1: Safe learning opportunities for children & youth provided, in part through the



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Rehabilitation/construction of temporary, semi-permanent, permanent infrastructure that is accessible to all. The introduction will also raise key questions regarding the ways that technology is shaping infrastructure for education around the world that will be answered through the presentations that follow.

1:15 - 1:45 The Role of Infrastructure in Primary and Secondary Education in Pakistan

Latif Ur-Rahman, USAID/Pakistan

USAID/Pakistan's multi-pronged school construction program targets school reconstruction after earthquakes, flooding, and conflicts, as well as the construction of new schools in underserved areas. While focusing on rebuilding schools to be safer and have improved facilities, the focus is also on improving school design to include sustainability and greener design and construction, as well as in improving community involvement in the school construction process. Lessons learned from the innovative Library Challenge, a community-led volunteer initiative, will also be shared.

1:45 - 2:15 Infrastructure and Higher Education

Shahid Mahmood, USAID/Pakistan

This session will re-visit Pakistan, but this time with a focus on USAID's higher education infrastructure work in the country, where dozens of schools have been improved. In contrast to the primary and secondary school projects discussed in the previous session, the focus for higher education expands to include research facilities, interactions with international universities, and ensuring that infrastructure is tailored for more specific purposes.

2:15 - 2:30 Questions and Answers for presenters

2:30 - 3:00 Focused discussion re: technology and school infrastructure

Discussants: Zaki Saad, Latif Ur-Rahman and Shahid Mahmood

3:00 - 3:30 Coffee Break

3:30 - 3:55 School Rehabilitation in Ghana

Nana Osei Akumia, Jr., USAID/Ghana

Here we will take a look at a program to construct schools in Ghana using government-to-government (G-2-G) agreements, in a seriously resource-constrained environment.

3:55 - 4:20 School Reconstruction in Jamaica

Jacob Greenstein, USAID/Washington

This session will continue with the themes of G-2-G mechanisms and resource constraints, but will look at reconstruction efforts after hurricanes and tropical storms in Jamaica.

4:20 - 4:35 Questions and Answers for presenters

4:35 - 5:00 Wrap-up discussion re: technology and school infrastructure



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Discussants: Sara Wessels, Nana Osei Akumia, Jr. and Jacob Greenstein

Module 18: Smart Utilities

POC: Louay Samouie, lsamouie@usaid.gov

Transformational solutions—many of which are enabled by “smart” grid technology—are helping utilities and communities around the world advance toward a radically different landscape for meeting their energy needs. However, the most successful utility of tomorrow will most likely need to operate with unprecedented highly-adopting, collaborative, responsive and efficient business models that unlock human potential while preserving the environment. This module will give you an overview on smart grid technologies, market segments, as well as its practical applications and trends in developing economies. The session will also explain the role that smart grids can play in transforming energy supply infrastructures and associated business models for “smart utility”.

1:30 - 3:00 Smart Utilities Presentation and Q&A

Louay Samouie, USAID/E3

3:00 - 3:30 Coffee break

3:30 - 4:00 Group activity on technology maturity model

The use of a maturity model allows an organization to have its methods and processes assessed according to management best practice, against a clear set of benchmarks.

4:00 - 5:00 Advancing Georgia's Energy Security

Nicholas Okreshidze, USAID/Georgia

Presentation objective: to present the status of Georgia’s energy sector 10 years ago, discuss legal and regulatory reforms implemented to commercialize the sector and present specific interventions that promoted power sector upgrades and greater utilization of smart grid technologies.

Friday, December 19

Modules 19, 20, 21, 22

9:00 am - 12:30 pm

Module 19:

Infrastructure in Post-Disaster Reconstruction

POC: Andy Golda, agolda@usaid.gov

USAID continues to play a major role in post-disaster infrastructure reconstruction. This module will focus on key principles and considerations for effectively planning and implementing infrastructure reconstruction programs in



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various sectors. The sessions will focus on best practices in roads and the WASH sectors as well as how to deal with post-disaster reconstruction in an urban environment.

9:00 - 9:15 The Post-Disaster Environment

Andrew Golda, Office of Energy and Infrastructure, USAID

A brief overview of post-disaster infrastructure reconstruction issues and the series of primers that are available to assist in disaster situations.

9:15 - 10:30 Urban Planning Principles for Post-Disaster Recovery

Wayne Hausser, Senior Project Manager, Parsons Corporation

Urbanization in the developing world means that increasingly cities are at risk during natural and manmade disasters. Following the initial phases of humanitarian assistance, USAID teams engage with municipal, regional, and state leaders with the mission to identify strategies and programs to develop and return the impacted regions' economic vitality. This session will identify urban planning principles and processes that are critical to effective reconstruction in urban areas.

10:30 - 11:00 Coffee Break

11:00 - 11:30 Reestablishing Road Services in Post-Disaster Circumstances

Jessica Forrest, Sheladia Associates

This presentation will identify the basic steps in the process of planning and executing post-disaster/post-conflict road reconstruction programs funded by USAID. It will include the steps, principles, and best practices to re-establish road services in a post-disaster / post-conflict situation. It provides a road map on how to develop a recovery program through planning, design and implementation.

11:30 - 12:00 Water and Sanitation in Post-Disaster Situations

Jessica Forrest, Sheladia Associates

This presentation will identify the immediate actions that should be taken for water supply and sanitation after a disaster or emergency occurs, who the key actors are in an emergency and how they can best be coordinated. It will also shed light on the recovery phase, (after the immediate response phase to a disaster) as well as providing information on how to link this intermediate, yet vital, stage to the longer-term transition to normalcy.

12:00 - 12:30 Questions and Answers

Moderator: Andrew Golda

Module 20: Urban Futures-How to Reach a Preferred Future of Cities (9:00 – 10:30)

POC: Nguyen K. Nguyen, USAID/LAB

The urban futures module will provide an overview of futures analysis and future trends related to urbanization. It will especially focus on the discussion among a dynamic group of leaders in Asia at the Urban Futures Workshop hosted by USAID in Bangkok in October 2014. Moreover, we will address how the knowledge of the trends can



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provide insights for USAID strategy and urban program planning process. Participants will gain new knowledge about futures analysis, explore how this tool has been used by other development organizations, and discuss its applications in USAID programs.

9:00 - 9:08 Futures Analysis and the Futures of Cities: an Overview

Nguyen K Nguyen, USAID/Lab

Outline of entire session; and give a brief review of the Asia Urban Futures Workshop in Oct 2014. Introduce futures analysis and why it is a good tool to urban and development professionals to use for our program. Introduce the speakers and the format of the panel.

9:08 - 9:20 The Future of Global Development in 2030

Jonathan Peck, Institute of Alternative Futures

Mr. Peck is a senior futurist who has been working with the Lab to create 4 futures scenarios of global development in 2030. Jonathan will set the stage to help the audience think about the future, present scenarios and think about the future of cities in these scenarios, especially the new thinking using social determinant factors as indicators for urban health.

9:20 - 9:33 The future of Cities in 2030

Cindy Frewen, University of Houston

Ms. Frewen is an architect, urban planner, and futurist who was invited to the Asia Urban Futures Workshop to speak at a similar section. Cindy will present the future of cities from both viewpoints as an urban professional and a futurist. She will address areas where futures analysis can complement the traditional urban planning approach, why it is essential that urban professionals should use futures as a tool, and how USAID staff can apply futures thinking in USAID strategies/programs.

9:33 - 9:45 Reflection from the Asia Urban Futures Workshop from an USAID staff and the Urban WASH program in India

Anand Rudra, USAID/India

Mr. Rudra is a project management specialist focus on Water. Anand will reflect thoughts about futures analysis and cities from the viewpoint of a development professional (on behalf of his director Anupama Rajaraman who attended the Asia Urban Futures Workshop). Anand will also share the Urban WASH program is now the Signature Effort that India Mission is working with the Lab & how futures analysis can be a good tool for planning this program.

9:45 – 10:00 Urbanization from the policy and international view

Andrew Reynolds, State Department

He will share his perspectives from the State department in working with other countries, UNs, and other sectors on issues related to urbanizations. From a policy practitioner's perspective, he can speak for how futures analysis can help inform policies and decisions.

10:00 - 10:30 Discussions + Q&A



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Audiences are encouraged to ask questions to the panelists. If time permits, we will take one question at a time. Otherwise, we will take multiple questions and let the panelists answer them at once.

Module 21: Country Case Study of Ukraine: Ensuring Electric Network Stability in Ukraine in the Face of Fuel Shortages, Conflict, and Degraded Infrastructure (10:30 – 12:00)

POC: William L. Polen

The conflict in eastern Ukraine is causing significant disruptions in electricity supply during the peak winter heating season. This case study will examine USAID's technical support to the Ukrainian state owned electric power transmission company in modeling and analyzing the electric grid's performance in response to fuel shortages, infrastructure damage to the electricity network, roads and railways, and the rising demand for electricity. It will highlight recommendation for remedial actions to preserve overall electric network stability and the human resource, technical and political challenges to their implementation.

Module 22: Facilitating Energy Sector Transactions

POC: Ellen Dragotto and Masood Malik, edragotto@usaid.gov and mmalik@usaid.gov

Power Africa, a presidential initiative launched in 2013, takes a transaction-centered approach that provides host-country governments, the private sector, and financiers with a focal point to galvanize collaboration around priority electricity generation, transmission and distribution transactions. Power Africa simultaneously helps governments to drive systemic changes and fundamental reforms in the power sector that will facilitate even greater private sector involvement and investment over the long term. This module will cover the main features of this approach, which are focused on late stage transactions, and provide examples of some projects that have been aided, as well as policy actions or changes undertaken, to enhance private sector participation. Participants will learn to appreciate how assistance must be tailored to each transaction, taking into account the country's specific circumstances, and actions being undertaken by private sector stakeholders and other donors.

9:00 - 9:10 Introduction and Overview

Session Chair: Agnes Dasewicz, Director PCGA

This presentation provides an overview of the presentations that will follow on how USG can facilitate transactions, help in improving enabling environment, promote enhancement of financing options, and develop special partnerships with the private sector.

9:10 - 9:55 How can large scale power transactions be facilitated

David Hunt, Senior Transactions Advisor in Nigeria

This will describe distinct features of large, late stage transactions ripe for intervention, types of interventions, and actual case studies/examples of interventions he has been involved with and the results of those interventions.

9:55 - 10:30 Gas Sector Transactions



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Alain Rosier, Nexant Team Leader Ghana Gas Sector Assistance.

This describes possible gas sector transactions that may underpin affordable and steady fuel supply for power sector, including LNG supply options. Will cover actual case studies/examples of gas supply impediments and how they were handled in practice, through USAID technical assistance.

10:30 - 11:00 Coffee Break

11:00 - 11:45 Interactive Session

David Hunt and Alain Rossier

This will highlight Key Issues in Determining if a Mission Can Get Involved in Supporting a Transaction and Possible Modes of Intervention. Hypothetical situations relating to various aspects of development of private sector energy projects will be presented and participants will be asked to speculate about the viewpoints of various stakeholders in one or more typical projects (project developer, off-taker utility, ministry of finance, financial institutions) and specific roles that USG could play to promote those projects.

11:45 - 12:00 Small Scale Transactions and Beyond the Grid Possibilities

Maria Hilda Rivera, USAID/Power Africa BTG Lead and PFAN/Small Scale Project Transaction Advisor

Review of approaches to a) promote small scale transactions, how these differ from larger transactions, and b) improving access through scaling up of commercially sustainable solar home system programs

12:00 - 12:30 Q & A and Concluding Remarks

Moderated by Agnes Dasewicz

Graduation Ceremony

12:30 - 1:00 Plenary: Closing Remarks, Diplomas, and Evaluations

1:00 - 2:00 Lunch