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American States



NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

**Regional Workshop on
Metrology and Technology Challenges of
Climate Science and Renewable Energy**

**April 14 - 15, 2015
Jamaica Pegasus Hotel
Kingston, Jamaica**



**Taller Regional de
Metrología y Retos Tecnológicos en las Ciencias del Clima
y la Energía Renovable**

**14-15 de abril, 2015
Jamaica Pegasus Hotel
Kingston, Jamaica**





Tuesday, April 14, 2015

Day 1 : Session A – Opening Ceremony & Technical Workshop
Theme: Energy Efficiency in Buildings and Renewable Energy– Metrology and Technology Challenges?

8:30	Registration
9:00	<p>Welcoming Remarks/Opening Address</p> <p>Professor Winston Davidson, Chairman – Standards Council, BSJ, Jamaica Robert Medford, CARIMET Coordinator Jeanelle Van Glaanenweygel, OAS Representative in Jamaica Luis G. Moreno, U.S. Ambassador to Jamaica</p>
9:40	<p><u>National Energy Policy – Fuelling Growth</u></p> <p>Omar Alcock, Senior Economist, Energy Economics Unit, Energy Division, Ministry of Science Technology, Energy and Mining, Jamaica</p>
10:00	<p><u>Renewable Energy Policies in Trinidad and Tobago</u></p> <p>Mary Rose Narayane, Geologist, Renewable Energy and Energy Efficiency Team of the Energy Research and Planning Division, Ministry of Energy and Energy Affairs, Trinidad & Tobago</p>
10:25	<p><u>Energy Policy - The Interconnection Challenge</u></p> <p>Daryl Jackson, Managing Director, OWIA Energy Solutions, Antigua & Barbuda</p>
10:50	Break
11:15	<p><u>Energy Efficiency: Achievements, Equipment and Social Impact in the Dominican Republic</u></p> <p>Lewis Peña, Coordinator, Electrical Measurement Laboratory, INDOCAL, Dominican Republic</p>
11:40	<p><u>The Application of Renewable Energy Options to Off-set Climate Change and Sustainability Challenges in the Caribbean</u></p> <p>Earl S. Green, PMP, CAEETP, Latin America Energy Organization (OLADE), Jamaica</p>
12:05	<p><u>Interconnecting RETs into Island Grids - Technical and Financial Considerations</u></p> <p>Jusceno Jacob, Electrical Engineer-Renewable Energy, GRENLEC (Power Company), Grenada</p>
12:30	Lunch



Tuesday, April 14, 2015	
Day 1: Session B – Cont. Technical Workshop	
Theme: Energy Efficiency in Buildings and Renewable Energy – Metrology and Technology Challenges?	
13:30	<p><u>NIST Research: Energy and the Built Environment</u> David Yashar, Deputy Chief, Energy and Environment Division, Engineering Laboratory, NIST, USA</p>
14:00	<p><u>Energy Efficiency in Buildings (Another CARIMET Country)</u> Elliot Erwin Edwards, CEO, Atoms Solutions Inc., Barbados</p>
14:30	<p><u>Labeling Programs for Energy Efficiency Appliances - National and Regional Approaches for Implementation and Testing</u> Ana Maria Carreño Hoyos, Manager, Global Best Practices, CLASP, USA</p>
15:00	Break
15:30	<p><u>Energy Efficiency and Climate Impacts of Stationary Air Conditioning and Refrigeration Systems</u> John Telesford, Consultant and In-Country Expert, Grenada</p>
16:00	<p><u>Capacity Building for a Renewable Energy Workforce in Jamaica - The Role of Academia</u> Ruth Potopsingh, Associate Vice President, Sustainable Energy, University of Technology, Jamaica</p>
16:30	<p><u>Panel Discussion on Renewable Energy and Climate Science (3-5 min each)</u> Representatives from the CARIMET Region D.Boodlal & Mary Narayane(Trinidad & Tobago), Lewis Peña (Dominican Republic), Earl Green (OLADE), Daryl Jackson (Antigua & Barbuda), Jusceno Jacobs (Grenada), Ruth Potopsingh (Jamaica)</p> <p>Q's to be addressed:</p> <ul style="list-style-type: none"> • What are the current policies of your country about renewable energy, building efficiency systems, smart grid, and climate science? • What are the current or pending regulations about Greenhouse Gas (GHG) Emissions and Renewable Energy? • Do the countries have the infrastructure in place to meet these policies? <p><i>Moderator: Hratch Semerjian, NIST, USA</i></p>
17:15	<p><u>Summary of First Day Discussions</u> Jose Trejo, Director, Belize Bureau of Standards Alan Michael, Standardization Officer, Antigua & Barbuda Bureau of Standards</p>
18:30	Networking Reception



Wednesday, April 15, 2015	
Day 2: Session A – Technical Workshop	
Theme: Renewable Energy & Smart Grids – Metrology and Technology Challenges?	
8:30	<i>Registration</i>
9:00	<i>Welcoming Remarks</i> Claire Saundry, Director, International and Academic Affairs, NIST
9:10	<u><i>Smart Grid as an Infrastructure Platform</i></u> David Wollman, Deputy Director, Smart Grid and Cyber-Physical System Program Office, Engineering Laboratory, NIST, USA
9:40	<u><i>Hurdles and Opportunities of Renewable Energy and Smart Grid in Rural Areas</i></u> Orlando Olmberg, CEO of Guguplex Technologies SAC, Suriname
10:10	<u><i>The Merits of Integrating Renewables Using Smarter Grid Systems</i></u> Mr. Ricardo Case, SCADA/EMS Manager, Jamaica Public Service Company
10:40	<i>Break</i>
11:10	<u><i>Diversifying in Energy Production: Producing Bio-Electricity and Bio-Ethanol From Sugarcane, A Natural Resource of Belize</i></u> Glenford Eiley, Co-Founder & President, GSR Energy Limited, Belize LLC
11:40	<u><i>Renewable Energy Technology (Photovoltaic Systems)</i></u> Kenroy Questelles, Head of Engineering Department, St. Vincent and the Grenadines Community College & Chairperson of the St. Vincent and the Grenadines Bureau of Standards Technical Committee for Electrical and Electro-technical Standards (St. Vincent & Grenadines)
12:10	<u><i>A New Manufacturing Center For Solar PV Panel Systems And Design-Build of Solar PV Power Plants in Belize, Central America</i></u> Reuben Chow, CEO, CE-CAM Energy, LTD
12:40	<i>Lunch</i>



Wednesday, April 15, 2015	
Day 2: Session B – Technical Workshop	
Theme: Climate Science – Metrology and Technology Challenges?	
13:30	<i>Climate Change and Renewable Energy – A US Perspective</i> James Whetstone – Special Assistant for Greenhouse Gas Measurements, NIST, USA
13:50	<i><u>Air Quality Measurement in Jamaica</u></i> Jody Ann Marston, Acting Coordinator, Pollution, Monitoring & Assessment Branch, National Environment and Planning Agency, Jamaica
14:10	<i><u>Greenhouse Gas Measurement and Management: A case study for Trinidad</u></i> Donnie Boodlal, Lecturer, University of Trinidad and Tobago (TT)
14:30	<i><u>Climate Change Measurement: A review of rainfall and temperature measurement standards in Guyana</u></i> Odessa Shako, National Ozone Manager, Ministry of Agriculture, Guyana, and Lyndon Alves, Meteorologist and Head of the National Weather Watch Center of the Ministry of Agriculture, Guyana
14:50	<i><u>The Impact of and Response to Climate Change from the Perspective of the Trinidad and Tobago Electricity Commission</u></i> Courtenay Mark, Assistant General Manager, Trinidad and Tobago Electricity Commission, Trinidad & Tobago
15:10	<i>Panel Discussion on Climate Science ; GHG/Air Quality Measurement</i> Donnie Boodlal & Courtenay Mark (TT), Odessa Shako & Lyndon Alves (Guyana), Jody Marston (Jamaica) Questions: Does your country currently make a report of emissions to the UNFCCC? If so, are there questions related to measurements or reference data (emission factors) Does your country have GHG management issues? What are these? <i>Moderator: James Whetstone, NIST, USA</i>
16:00	<i>Break</i>
Session C - Closing Session	
Theme: Planning for the Future – Training and Collaboration Needs?	
16:30	<i><u>Panel Discussion- Development of an Action Plan for the CARIMET Countries</u></i> Jose Trejo (Belize), Robert Medford (Grenada), Alan Michael (A&B) Richard Lawrence (Jamaica) Q's to be addressed: <ul style="list-style-type: none"> • Is your country prepared to meet Metrology and Technology Challenges presented by Renewable Energy, Building Systems, Smart Grid and Climate Science Policies? • Does your NMI have the necessary metrology and technology capabilities to meet these challenges? • What type of assistance would be most useful for your NMI (specific areas, equipment needs, training needs, etc.)? Would regional cooperation be productive? <i>Moderator: Hratch Semerjian, NIST, USA</i>
17:30	<i>Summary and Action Items for the Future</i> <i>H. Semerjian, NIST, USA</i>
17:45	<i>Closing Remarks</i> Professor Winston Davidson, Chairman – Bureau of Standards Jamaica



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Acronyms/Definitions

ABBS - Antigua and Barbuda Bureau of Standards

BSJ- Bureau of Standards Jamaica

BNSI - Bahamas Bureau of Standards

CLASP- Collaborative Labeling and Appliance Standards Program (CLASP), an international nonprofit organization

GHG- Green House Gases

GEI - Gases de Efecto Invernadero

GSR Energy Limited -A Sustainable Energy Start-Up Company in Belize

Guguplex Technologies SAC - A solar engineering company in Suriname.

IAAO- International and Academic Affairs Office

INDOCAL - Dominican Institute for Quality/Instituto Dominicano de la Calidad

MEEI - Ministry of Energy and Energy Industries

MSTEM- Ministry of Science, Technology, Energy and Mining

NIST- National Institute of Standards and Technology, US

OAS - Organization of American States

OLADE- Latin American Energy Organization/Organización Latino Americana de Energía

SAC-South America and Caribbean

SLBS - Saint Lucia Bureau of Standards

SSB - Suriname Metrology Unit

TTBS - Trinidad and Tobago Bureau of Standards