

**ESIP Summer Meeting 2013 (Washington, DC)  
Energy and Climate WG Breakout Sessions – Agenda  
July 11, 2013**

**Co-Chairs: Shailendra Kumar (Energy and Environment Consulting), and Richard Eckman (NASA)**

**July 11, 2013 Thursday**

**8:30 AM – 10:00 AM Energy and Climate WG Session I – Decision Support Tools Catalog and Community of Practice (DSTCCP): Platform, Applications and Collaborations**

- DSTCCP Overview and Update – Shailendra Kumar, Energy and Environment Consulting; Taber Allison, American Wind and Wildlife Institute; Laurie Allen and Sky Bristol, US Geological Survey
- DSTCCP Applications: NASA SERVIR, USAID, and International Collaboration (GEO) – Richard Eckman, NASA and Brian Wee, The National Ecological Observatory Network (NEON)
- ESIP Tools Catalog and Community role for Emergency Preparedness/Disaster Response in case of extreme weather and climate events – Open Discussion

**10:30 AM – 12:00 PM Energy and Climate WG Session II – Sustainability in the context of Energy-Water Nexus, Climate Change and Extreme Events: Part I**

- Extreme Weather and Climate Events: An Overview from 2013 National Climate Assessment Findings – Kenneth E Kunkel, Research Professor and Lead Scientist for Assessment, NOAA Cooperative Institute for Climate and Satellites (CICS), North Carolina State University and National Climatic Data Center
- Sustainability: A Cleantech Industry Perspective – Shailendra Kumar, Energy and Environment Consulting; Co-chair, ESIP Energy and Climate WG
- City Planning for Energy and Climate Future, and Extreme Weather/Climate Events - Scott Shuford, Development Services Department, City of Fayetteville, NC.

**12:00 – 1:30 PM Lunch Break**

**1:30 – 3:00 PM Energy and Climate WG Session III – Sustainability in the context of Energy-Water Nexus, Climate Change and Extreme Events: Part II**

- The New York City Shoreline: What do four centuries in the historic record show? - William F. Johnson, Geographic Information Officer, Office of the CTO, New York State (via WebEx)
- Community Reconstruction Planning and Hurricane Sandy Recovery – Barry Pendergrass, Office of Communities and Waterfronts, New York State (via WebEx)
- Cleanweb: Leveraging IT to drive Global Sustainability, Economic Prosperity, and Human Well-being – Chris George and Blake Burris, Cleanweb (via WebEx)



## **ESIP Summer 2013 Meeting: Energy and Climate WG Breakout Session Proposal**

### **Session I: Decision Support Tools Catalog and Community of Practice (DSTCCP): Platform, Applications, and Collaborations**

A prototype for the Decision Support Tools Catalog and Community of Practice (DSTCCP) platform will be reviewed, and demonstrated for Renewables Site Selection application with updates from developers and users. In addition, the similar on-line system can be applied for facilitating a catalog and community of practice for decision support tools designed for proactive planning of emergencies and disaster response in case of extreme weather/climate Events. In addition a similar system can be helpful in supporting NASA SERVIR and USAID Global Climate Change programs. Viability of such applications, ideas for collaboration and plans for moving forward will be discussed.

### **Session II: Sustainability in the context of Energy-Water Nexus, Climate Change and Extreme Events**

This session will focus on public and private sector concerns about sustainability in the context of energy, water and climate nexus for government and business operations, infrastructure (data centers, communications, transportation), resource planning, and emergency preparedness for the community in case of extreme weather/climate events. The discussion will revolve around what the related issues and challenges are, how various organizations are addressing them, and what the vision is regarding evolution of sustainability? A synthesis of data and information needs, and views from cleantech companies and stakeholders, corporations implementing sustainability in their operations, and environmentally sensitive organizations (NGOs) will be presented and discussed along with recent state and local government efforts to promote sustainability and ensure resilience.

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## **Extreme Weather and Climate Events**

*Kenneth E. Kunkel, Research Professor and Lead Scientist for Assessment, NOAA Cooperative Institute for Climate and Satellites, North Carolina State University and National Climatic Data Center*

### **Abstract**

Long-term trends in extreme weather and climate events were assessed for the 2013 National Climate Assessment report. These included heat waves, cold waves, extreme precipitation, severe convective storms, severe winter storms, drought, tropical and extratropical cyclones, and coastal winds and waves. Certain extreme phenomena have exhibited trends. Extreme precipitation events have increased nationally, with especially large increases in the Midwest and Northeast. Flooding frequencies have been upward in the northeast and central regions, downward in the southwest, and flat elsewhere. Drought has been more frequent and intense in the southwest. There is some evidence for an increase in storm frequency and intensity along U.S. coasts and an increase in extreme waves along the Pacific coast since the 1950s, but evidence along other U.S. shorelines is inconclusive.

Model simulations, backed by an understanding of certain basic physics principles, provide high confidence in future trends for certain types of extremes. One of these is extreme rainfall, which is likely to increase in frequency and intensity. A warmer atmosphere will contain more moisture and this will provide more “fuel” for weather systems that produce heavy rainfall. Higher water vapor content may also lead to more frequent intense hurricanes. There is a lesser understanding about future trends in other types of extremes.

## **Sustainability: A Cleantech Industry Perspective**

*Shailendra Kumar, Energy and Environment Consulting; Co-chair, ESIP Energy and Climate WG*

### **Abstract**

Several factors are at play to ensure sustainability in the face of increasing population and climate change – these include energy availability for continued economic growth while protecting the environment and ecosystem, efficient use of limited resources (water and energy), and building resilience to disasters and extreme events. Although regulatory compliance to reduce and report carbon footprint started out as the principal sustainability concern for most corporations, a new megatrend has emerged that links sustainability as the driver for innovation to increase profitability while ensuring corporate social responsibility.

Many multinational corporations and innovative startups are taking an active role in this “sustainability megatrend” and positioning themselves as first movers and market leaders. Here we take a look at the current issues, technological and political challenges, and some of the best practices these leaders are deploying with innovative and effective solutions in cleantech, mobility, social media, big data, and information systems. Opportunities for public-private partnerships are also explored for global sustainability.

## **Planning for a New Energy and Climate Future**

*Scott Shuford, Development Services Department, City of Fayetteville, NC.*

### **Abstract**

Tip O'Neill famously said, "All politics is local." That applies to climate change as well: All climate is indeed local. The wettest and driest parts of North Carolina are 50 miles apart: the dry mountain valley that contains Asheville is quite close to the dozens of waterfalls spawned by the 90 inches of precipitation Transylvania County receives on a normal year. Yet, despite its climatic and geographic diversity, North Carolina still suffered through the year 2007 in which all 100 counties were in a state of drought.

Local governments are the epicenter of climate change. It is at the local level where much climate mitigation will occur and where climate adaptation will be most personally and profoundly felt. It is at the local level where the most effective energy management will – or will not – manifest itself. This presentation will cover the local experience of climate change - from floods to droughts, from sea-level rise to wildfires - and what local governments will - or must - do to adapt to and mitigate climate change. We will talk about energy as well, peripherally, but as an important subset to climate change.

**DRAFT 6/26/13**

**The New York Shoreline: What do four centuries in the historic record show?**

*William F. Johnson, Geographic Information Officer, Office of the CTO, NYS Office of IT Services (ITS)*

**Abstract**

The shoreline of New York City has changed substantially over time. This presentation highlights the manmade changes on the Manhattan shoreline since Western settlement began in 1609, through overlays of historic maps obtained from the collection at the New York Public Library. Overlay of the Sandy storm surge shows that the flooding occurred largely in the manmade areas. A similar analysis of change in the Rockaway peninsula highlights primarily natural processes that have shaped this landscape feature, and how it was impacted by Sandy. These analyses were conducted for the NYS 2100 Commission created by Governor Cuomo to make long-term recommendations on infrastructure resiliency.

## **Community Reconstruction Planning and Hurricane Sandy Recovery**

*Barry Pendergrass , Coastal Resources Specialist , New York State Coastal Zone Management Program, New York State Department of State*

### **Abstract**

Hurricane Sandy caused widespread record coastal flooding in New York. Tide gages in the region recorded storm surges ranging from 6 to 12 feet above National Weather Service thresholds for major coastal flooding. Over 100,000 homes in New York were damaged, destroyed or severely flooded. The scale of damages necessitates a general planning framework for community recovery to help connect federal programs with state and local capacities and needs. The New York State Community Reconstruction Zone (CRZ) Program has been established to integrate certain federal assistance with community needs. The CRZs will provide reconstruction guidance integrating federal requirements with community priorities. New York State has allocated \$25 million in grants for community planning through the CRZ program. Additional funding for rebuilding and revitalization will be channeled by the recovery strategies identified in the CRZs. Eligible communities include those most severely affected by Hurricanes Sandy and Irene and Tropical Storm Lee. Implementation projects and activities are intended to restore communities and reduce the potential for future damage. The effectiveness of the program depends on underlying data, analysis and decision making tools. As the CRZ program goes forward New York State hopes to identify effective processes and information needs that will enable flood resilience planning to be extended to additional areas of the state.