



CENTER FOR CLIMATE
AND ENERGY SOLUTIONS

Cooperative Institute
for Climate and Satellites



CLIMATE IMPACTS AND RESILIENCE WORKSHOP JULY 16, 2014, WASHINGTON, DC

SUMMARY

The Center for Climate and Energy Solutions (C2ES) and the Cooperative Institute for Climate and Satellites – North Carolina (CICS-NC), which is largely supported through a grant from NOAA’s National Climatic Data Center (NCDC), hosted the Climate Impacts and Resilience Workshop in Washington, DC, on July 16, 2014. The workshop focused on types of climate-related risks and opportunities for the private sector. The workshop featured presentations from the climate science community, companies actively working to address risks and develop solutions to build resilience, and agency representatives looking to partner with private sector companies to pursue resilience in a sustained manner.

We provide a brief description of the presentations below:

Climate Impacts in the United States – An Overview from the National Climate Assessment

Ken Kunkel, Research Professor and Lead Scientist for Assessment, NOAA CICS, North Carolina State University, and NCDC

The [Third National Climate Assessment](#) projections for the 21st century include continued warming, more frequent and intense heat waves, more frequent and intense extreme rainfall events, exacerbation of drought impacts in some areas, and rising sea levels. These climate changes will have implications for infrastructure, water resources, agriculture, and human health and well-being.

Climate Data Initiative

Bina Venkataraman, Senior Advisor on Climate Change Innovation, Executive Office of the President

Developed as part of the President’s Climate Action Plan, the Climate Data Initiative focuses on transforming available, federally collected data streams into actionable information for communities, businesses, and researchers trying to manage climate risks. The Initiative was launched in March 2014 with a beta phase data site, Climate.data.gov. Resources on the site are currently focused on coastal flooding and sea level rise, but will expand to cover food resilience, human health, and energy infrastructure. Various partnerships have been forged with private sector companies (such as Intel, Esri, and Microsoft) to share climate data, create visualization tools, and develop other relevant climate data resources.

Examples of Corporate Resilience Activities

Stephen Harper, Global Director, Environment and Energy Policy, Intel

Bill Brady, Director, Corporate Environmental Strategy, Exelon

Jim Chelius, Engineering Director Corporate Planning, American Water

Representatives from three companies provided examples of corporate resilience planning. Intel is hosting a Chesapeake Bay Hackathon event in August 2014 to bring together developers, designers, and subject matter experts to focus on creating software-based solutions to climate adaptation and planning in coastal communities. This effort is in support of the White House Climate Data Initiative.

Exelon is working to make the grid more efficient and resilient to extreme weather events. They are also assessing climate impacts on their cooling water supplies. Bill Brady described their Braidwood Water Study, in which Exelon used downscaled climate projections coupled with a watershed model to better understand how changes in temperature and precipitation might affect the reliability of the water supply.

As the nation's largest investor-owned drinking and wastewater utility, American Water maintains a large collection of infrastructure spread over 30 states and 370 distinct water systems. Jim Chelius described their approach to assessing risks, outlining American's Water's prioritization of critical assets, and the need to place climate risks in context with other hazards. The company is also reviewing the adequacy of engineering standards in the face of climate change, as well as expected levels of service during both "normal" and extreme events.

Tools for Corporate Resilience Planning

Alastair Baglee, Director of Acclimatise Interactive

Acclimatise is a consulting, communications, and digital application company with expertise in climate change adaptation and risk management. Acclimatise provides various tools relevant for corporate resilience planning. Alastair Baglee demonstrated Acclimatise's [Aware](#) tool, which is an online-accessible climate risk screening platform that companies can apply to their projects or investments.

Partnerships and Clearinghouses

James McMahon, Senior Consultant, LMI, National Partnership for Resilience

Craig Zamuda, Senior Policy Advisor, Office of Energy Policy and Systems Analysis, U.S. Department of Energy (DOE)

The National Partnership for Resilience is an effort to bring together public agencies, private companies, and academia to promote climate resilience. The Partnership is planning to host a launch event in December 2014 in Washington, DC.

In addition to assessing climate change impacts on the nation's energy sector and supporting White House climate initiatives, DOE is also developing a voluntary partnership with companies in the electricity sector focused on building resilience to extreme weather and climate change. This partnership will follow the model of existing voluntary programs, such as DOE's Better Buildings Challenge. The partnership will allow for stakeholders to share best practices and lessons learned, information and decision-making tools for assessing risks and opportunities, innovative technologies, metrics for measuring success, technical resources, and

policies to incentivize resilience actions. Possible near-term efforts may include guidance on tools and methods for translating climate information to energy sector impacts, case studies of how energy companies have used climate data to inform risk assessment and management decisions, and analyses of the costs and benefits of investment in resilience.

ATTACHMENT 1: AGENDA

WEDNESDAY, JULY 16, 2014
12:00 – 1:00 PM LUNCH
1:00 – 1:10 PM WELCOME <i>Janet Peace and Joe Casola, C2ES</i>
1:10 – 1:45 PM CLIMATE IMPACTS IN THE UNITED STATES – AN OVERVIEW FROM THE NATIONAL CLIMATE ASSESSMENT <i>Ken Kunkel, Research Professor and Lead Scientist for Assessment, NOAA CICS, North Carolina State University, and National Climatic Data Center</i>
1:45 – 2:15 PM CLIMATE DATA INITIATIVE <i>Bina Venkataraman, Senior Advisor on Climate Change Innovation, Executive Office of the President</i>
2:15 – 2:45 PM EXAMPLES OF CORPORATE RESILIENCE ACTIVITIES <i>Stephen Harper, Global Director, Environment and Energy Policy, Intel</i> <i>Bill Brady, Director, Corporate Environmental Strategy, Exelon</i> <i>Jim Chelius, Engineering Director Corporate Planning, American Water</i>
2:45 – 3:00 PM NETWORKING BREAK
3:00 – 3:45 PM TOOLS FOR CORPORATE RESILIENCE PLANNING <i>Alastair Baglee, Director of Acclimatise Interactive</i>
3:45 – 4:30 PM PARTNERSHIPS AND CLEARINGHOUSES <i>Craig Zamuda, Senior Policy Advisor, Office of Energy Policy and Systems Analysis, DOE</i> <i>James McMahon, LMI, National Partnership for Resilience</i>
4:30 PM ADJOURN

ATTACHMENT 2: ATTENDEE LIST

COMPANY / ORGANIZATION	NAME	TITLE
<i>Acclimatise</i>	Peter Adams	Climate Risk Consultant
<i>Acclimatise</i>	Alastair Baglee	Director of Acclimatise Interactive
<i>Air Products & Chemicals</i>	Wendy Graham	Clean Energy Market Manager
<i>American Gas Association</i>	Rick Murphy	Managing Director, Sustainable Growth
<i>American Water</i>	Jim Chelius	Engineering Director, Corporate Planning
<i>Bank of America</i>	Kaj Jensen	Public Policy & Global Corporate Affairs
<i>Bank of America</i>	Michael Mondshine	Vice President, Sustainability & Energy, WSP
<i>BP</i>	David von Hoogstraten	Director of Regulatory Affairs
<i>Business Council of Fairfield County</i>	Joe McGee	VP, Public Policy and Programs
<i>Business Council of Fairfield County</i>	Megan Saunders	Executive Director, Stamford 2030 District
<i>CBRE</i>	David Pogue	Global Director of Corporate Responsibility
<i>DOE</i>	Craig Zamuda	Senior Policy Advisor, Office of Energy Policy and Systems Analysis
<i>Duke Energy</i>	Venu Ghanta	Federal Environmental and Energy Policy Director
<i>Duke Energy</i>	Kevin Leahy	Managing Director, Environmental and Energy Policy
<i>Entergy</i>	Rick Johnson	Manager, Corporate Environmental Operations, Environmental Strategy & Policy Group
<i>Entergy</i>	Catherine Pereira	Intern
<i>Executive Office of the President</i>	Bina Venkataraman	Senior Advisor on Climate Change Innovation
<i>Exelon</i>	Bill Brady	Director, Corporate Environmental Strategy
<i>Exelon</i>	Al Picardi	Environmental Performance Improvement Manager

COMPANY / ORGANIZATION	NAME	TITLE
<i>General Accountability Office</i>	Anne Hobson	Senior Policy Analyst, Natural Resources & Environment
<i>General Accountability Office</i>	Barb Patterson	Assistant Director, Natural Resources & Environment
<i>HP</i>	Nate Hurst	Global Director, HP Energy and Environment
<i>Information Technology Industry Council</i>	Chris Hankin	Senior Director, Environment & Sustainability Policy
<i>Intel Corporation</i>	Alanna Conant	Intern
<i>Intel Corporation</i>	Steve Harper	Global Director, Environment and Energy Policy
<i>LMI, NOAA/NCDC</i>	James McMahon	Consultant to the Director of NCDC, LMI
<i>NOAA/NCDC</i>	Jonathan Brannock	Operations and Systems Analyst
<i>NOAA/NCDC</i>	Ken Kunkel	Research Professor and Lead Scientist for Assessment
<i>Schneider Electric</i>	Paul Hamilton	VP, Government Affairs
<i>Shell</i>	David Hone	Chief Climate Change Advisor
<i>StatOil</i>	Kevin Massy	Director of International Affairs
<i>Toyota</i>	William Chernicoff	Manager, Energy & Environmental Research
<i>US Global Change Research Program</i>	Emily Cloyd	Public Participation and Engagement Coordinator for the National Climate Assessment
<i>C2ES</i>	Joe Casola	Staff Scientist, Director of Science and Impacts
<i>C2ES</i>	Lia Cattaneo	Science and Impacts Intern
<i>C2ES</i>	Katy Maher	Science and Impacts Fellow
<i>C2ES</i>	Janet Peace	Vice President, Markets & Business Strategy
<i>C2ES</i>	Steve Seidel	Senior Advisor

Remote Participants

NOAA/NCDC EMPLOYEES AND AFFILIATES
Jake Crouch
Chris Fenimore
Karin Gleason
Stephanie Herring
Richard Heim
Stuart Hinson
Tamara Houston
Ed Kearns
Ellen Mecray
Ana Pinheiro Privette
Jeff Privette
Glenn Rutledge



CENTER FOR CLIMATE
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The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit 501 (c) (3) organization working to promote practical, effective policies and actions to address the twin challenges of energy and climate change.

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