

Residential, commercial and industrial efficiency: Revisiting the Michigan Climate Action Plan

[View Abstract](#)

- **Energy efficiency in building codes**
Pat Hudson, Energy Office, Michigan Department of Labor & Economic Growth and [Tim Mrozowski](#), Construction Management, MSU.
- **Demand side management**
Jon Allan, Executive Director of Environmental Policy and Intergovernmental Affairs, Consumers Energy
- **High performance buildings**
[Guy Bazzani](#), President, Bazzani Associates
- **Changing energy efficiency behaviors**
[Dr. Thomas Dietz](#), Environmental Science and Policy Program and Sociology, MSU

Moderated by Mike Beaulac, Michigan Department of Natural Resources and Environment

PRESENTATION ABSTRACTS:

Energy efficiency in building codes

This presentation will include a review of the policy recommendations that were a result of the Residential, Commercial & Industrial (RCI) sub-group from the Climate Action Plan. The discussion will include reference to the greenhouse gas metrics that those policy recommendations have targeted. Target policy recommendations of the Climate Action Plan will then be compared to the existing Michigan Uniform Energy Code (MUEC) as well as the current revisions to the commercial and residential energy codes in Michigan. Current revisions to the MUEC are expected to reflect the 2009 International Energy Conservation Code (IECC) for residential and the 2007 American Society of Heating, Refrigerating & Air-Conditioning Engineers (ASHRAE) 90.1 standard for commercial. These code revisions will represent progress, but this effort falls short of the "2030 Challenge" recommended in the Climate Action Plan (the towards-zero-energy-home path that American Institute of Architects (AIA) and ASHRAE are supporting). The MSU Construction Management program has been instrumental with delivering energy code training to building code officials and other building practitioners in the State. Professor Mrozowski will discuss how the energy code training component is important to having MI structures actually comply with the code. Included in this discussion will be exploration into national trends for future codes including International Code Council's (ICC) "green" code development and other relevant national trends and efforts that are taking place, indicating the direction of energy codes development nationally.

2) Demand side management

This presentation will include Consumers Energy's approach to the complex issue of demand-side management. There are two primary areas where this is addressed, through our Energy Optimization (EO) and Smart Grid (SG) programs.

Our EO programs, launched in 2009 as Consumers Energy's Saving Solutions, are the result of the Clean, Renewable, and Efficient Energy Act of 2008. The six-year plan aims to reduce electric use by 5.5 percent and natural gas use by 3.85 percent. The presentation will cover the initial success of this program.

Consumers Energy's Smart Grid program planning began in 2007. The company has taken a methodical approach to this "game changing" technology of two-way communicating "smart meters." Our emphasis continues to be on getting proper security and operational standards in place prior to mass meter deployment. While mass deployment is scheduled to begin during 2012, we have had smart meters deployed in a Jackson County pilot since 2009. This summer, we are launching two residential-focused pilots in the Jackson and Grand Rapids areas to gauge customer response to efforts to reduce their electric use. The program's long-term goals are to lower energy use, provide more rate options, increase billing accuracy and reduce the duration of customer outages.

3) High performance buildings

Initially, we will discuss the overall view of sustainable design and construction from a triple bottom line perspective. The impact of the built environment will be covered as well as the findings of the Michigan Climate Action Council, discussed using the graph of the 2025 Annual GHG Reduction Potential of MI Policy Options.

We will introduce three case studies of commercial urban infill projects which attained LEED Certification. The projects discussed are catalysts in their respective neighborhood business districts, with two of them being Cool Cities projects. This discussion will cover holistic design and implementation strategies used to achieve a sustainable final product. During each of these case studies we cover design, construction, and stormwater management including green roofs and rain gardens. The energy audit of the project is presented which is compared to the energy companies' average consumption data. We will discuss LEED Certification and some pending legislation to incentivize the construction of sustainable buildings.

4) Changing energy efficiency behaviors

Most climate change policy attention has been addressed to long-term options, such as inducing new, low-carbon energy technologies and creating cap-and-trade regimes for emissions. We use a behavioral approach to examine the reasonably achievable potential for near-term reductions by altered adoption and use of available technologies in U.S. homes and nonbusiness travel. Effective interventions vary by type of action and typically combine several policy tools and strong social marketing. National implementation could save an estimated 123 million metric tons of carbon per year in year 10, which is 20% of household direct emissions or 7.4% of U.S. national emissions, with little or no reduction in household well-being. The potential of household action deserves increased policy attention, and needs to be addressed by considering behavioral, economic and engineering elements.

BIOSKETCHES

Pat Hudson

Pat Hudson is residential energy specialist at the Michigan Bureau of Energy Systems. His duties include advancing energy efficiency policy and programs in conjunction with other Michigan agencies such as the Bureau of Construction Codes, Public Service Commission, Michigan State Housing Development Agency and the Bureau of Workforce Transformation. Patrick also serves as grant manager for various grant programs addressing residential energy efficiency, green building practices, and renewable energy applications. He was previously executive director of Urban Options Energy Demonstration Facility (now Michigan Energy Options). He has an Associates degree in Horticulture from Ferris State University, a B.S. in Communications with a Minor in Environmental Studies from Western Michigan University, and a Masters degree in Public Administration from Western Michigan University.

Tim Mrozowski

Tim Mrozowski is a professor of Construction Management in the School of Planning, Design and Construction, Michigan State University (MSU) and co-directs the Center for Project Performance Assessment and Improvement (C2P2ai) which is a collaborative research group of MSU Construction Management faculty researchers, whose mission is to pursue research that can improve construction performance and delivery. He is a licensed architect with teaching, research and industry experience in architectural design, energy analysis, sustainable design, LEED®, energy codes structural design, project delivery, construction contracts and project management. He is the Project Director for the "Michigan Energy Code and Standards Implementation and Training Project" and was director for the "Energy Efficiency in University Housing" Rebuild Michigan project.

Jon Allan

Jon is Executive Director of Environmental Policy and Intergovernmental Affairs for Consumers Energy Company where he has responsibility for development and integration of the Utility's environmental strategy and its relationship to governmental and regulatory affairs. He has been with the company for more than sixteen years. Jon was previously Manager of Environmental and Laboratory Services Department where he oversaw corporate environmental compliance and prior to that was Manager of Next Generation responsible for technical, planning and policy work related to the development of new generation assets. He was also responsible for coordination of corporate policy related to the State's Capacity Needs Forum and the State's 21st Century Electric Energy Plan.

Guy Bazzani

Guy Bazzani is President/CEO of Bazzani Associates, a sustainable design, construction, and development firm. He is an active leader in the triple bottom line movement that balances economic vitality, social responsibility, and environmental stewardship. With more than 25 years of experience in the industry, Guy and the Bazzani team of LEED Accredited Professionals are committed to creating high-performance buildings, adaptive re-use of historic properties, and the application of sustainable building and design principles.

Tom Dietz

Thomas Dietz (Professor) holds a Ph.D. in Ecology from the University of California, Davis, and a Bachelor of General Studies from Kent State University. At MSU he is associate vice president for environmental research and appointed in the Department of Sociology and Environmental Science and Policy Program. Dr. Dietz is a National Associate of the National Academy of Sciences, a Fellow of the American Association for the Advancement of Science, and has been awarded the Sustainability Science Award of the Ecological Society of America, and the Distinguished Contribution Award of the American Sociological Association Section on Environment, Technology and Society.