



Geographic Information Science and Technology

CoNNECT: Citizen Engagement for Energy Efficient Communities

Despite the progress in developing energy efficient building technologies, domestic appliances, and lighting equipment, curtailing residential energy usage is still a challenge. It has been consistently found that energy use can differ by 200% - 300% in identical homes, occupied by people with similar demographics. The prime reason for this difference is the lack of consumer access to their energy usage data in a useful and actionable way that promote conservation. To address this gap, we have developed a community-focus framework for energy efficiency called Citizen Engagement for Energy Efficient Communities (CoNNECT). CoNNECT is a multi-partner platform established to facilitate consumer engagement for energy efficiency. It is a unique partnership between Oak Ridge National Laboratory, utility companies, city council, community leaders, service organizations, and landlord associations.

The premise of CoNNECT is to use energy usage data with utilities to unleash the forces of energy efficiency innovation in homes. The CoNNECT framework has two interfaces – the utility view and the public view. The *utility view* provides utility analysts additional insights about their customer in order to better serve their customers and optimize rebate/incentive programs for conserving energy. The *public view*



enhances customers' access to (and understanding of) their consumption data; provides computational framework for customers to benchmark themselves against their peers and neighbors; and allows citizens to evaluate future energy technologies such as solar energy. The capabilities developed within the CoNNECT framework will (i) accelerate adoption and market penetration of EERE technologies, (ii) promote a community engagement through user generated content, (iii) provide maximum flexibility and transparency to the data owners, (iv) enable regional economic growth, and (v) foster public awareness, education, and outreach that could overcome pervasive institutional, market, and financial barriers to energy efficiency.

Publications:

- Omitaomu, O.A, Bhaduri, B.L., Kramer, I.S., Kodysh, J.B., Lapsa, M.V., New, J.R., Matheson, M.A. 2012. "A Framework for Establishing Energy Efficient Communities – A Case Study of a Multi-Partner Initiative in Knoxville, Tennessee." *Journal of Sustainable Cities and Society*.
- Omitaomu, O.A and Bhaduri, B.L. 2012. "A Spatial Analysis of Residential Energy Consumption Patterns and Implication for Energy Efficiency Initiatives." *Journal of Applied Energy*.

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