

Thursday, August 25, 2016

ACEEE Summer Study at Asilomar, California

Transportation's Role in Low-Income Households' Energy Burden



Shruti Vaidyanathan, Senior Transportation Researcher

Low-income communities in the United States carry a disproportionate energy burden. On average, the percentage of income that low-income households pay for home energy consumption is more than three times what their higher-income counterparts pay. Energy efficiency can go a long way to reduce the energy-related costs incurred by low-

income households and communities. But to fully understand the magnitude of this burden and create an effective set of strategies to respond, it's important to include transportation energy costs. Heating and electric bills alone don't tell the whole story.

In many metropolitan regions, climbing housing prices have pushed many low-income households out into suburbs that are chronically underserved by public transit and rarely located near prime job centers. As a result, these households may rely on personal vehicles, and incur excessive fuel expenditures, in order to get to work. If we factor in other vehicle-related expenses such as monthly loan payments, insurance, and maintenance, this burden

becomes even more significant. These total transportation costs for low-income households often amount to as much as 30% of overall household income.

The amount a household spends on transportation is determined by factors that include the location of their home and work, access to public transit, and local gasoline prices—factors that are largely out of household control. One way to shelter low-income families from an overwhelming transportation burden may be a targeted set of policies that focus on the interrelation of the built environment and transportation. Land-use changes that support and encourage compact, transit-oriented development (TOD) help to increase the feasibility of public transit and non-motorized transportation. In areas developed under TOD, residents can reduce their reliance on driving. Importantly, these developments should ensure that housing stock around transit hubs is financially accessible to low-income households. Streets should be connected and accessible to pedestrians, bicyclists, and public transit as a complement to TOD to give residents even more travel options and control over their transport expenses.

More research is needed to characterize the combined household and transportation energy burden for low-income

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Profile of Asilomar's Sustainability Program

The Grapevine staff, keen to learn more about the place we've called home for the week, recently met with Jill Heymsfield, the Environmental Sustainability Coordinator for the Asilomar conference center. Jill has been at Asilomar since 2014.

Certification. Aramark maintains an ISO 14001 certification. Managers from most departments participate in the monthly "green team" meetings in which environmental progress is reported, compared, and fine tuned. "Our contract with the State requires us to maintain our 14001 certification," Jill noted, "but we integrated the 14001 requirements into our standard staff meetings."

Aramark has set a goal of reducing the overall energy consumption at Asilomar by at least 3% per year. Heymsfield noted that

they met that goal last year, and that they're likely on track to do so this year. "If we don't make our goals, we'll do an assessment and see what else we can improve," Jill said. "It can be challenging. We have done so much already – our management team is dedicated to the program – but the future will be harder after we do the easy things. What's next is renewables, but that will take some assessment."

Water recycling and water heating. One of the biggest initiatives that Aramark has recently undertaken is the installation of a water recycling system for the laundry facility. Installed by local startup WaterCity, the system processes all the laundry wastewater and reportedly has recycled 83% of that, or more than 100,000

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Fuel Economy, continued

communities across the US. This would help us understand how the combined burden varies for different communities. Then we'd be better prepared to develop a coherent policy approach that addresses total energy burden.

Aramark, continued

gallons per month for reuse. The agreement with WaterCity is modeled after the commonly-used solar power purchase agreements (PPAs), with WaterCity installing, maintaining, and retaining ownership of the equipment.

Solid waste. Asilomar has achieved 70% overall diversion of solid waste from the landfill, and they are always looking to do better. For example, compostables go to an anaerobic digester at the local solid waste handler where the gas is used for space heat at the facility. "We also recycle soap from the guest rooms. It gets donated to an organization called Clean the World – it gets sanitized, reshaped, packaged, and sent out to the developing world."

Food. Local and organic food gets good attention, too. They follow the Seafood Watch standard for sourcing of fish, and follow guidelines that favor sourcing of other foodstuffs from within 150 miles. Jill found it almost amusing how easy local sourcing has been given the agricultural bounty of the area around Monterey, "We live in the middle of a lot of farms! Our chefs are in touch with our local farmers, too. They'll often call and ask what they would LIKE to sell us. We then adjust our menus as needed."

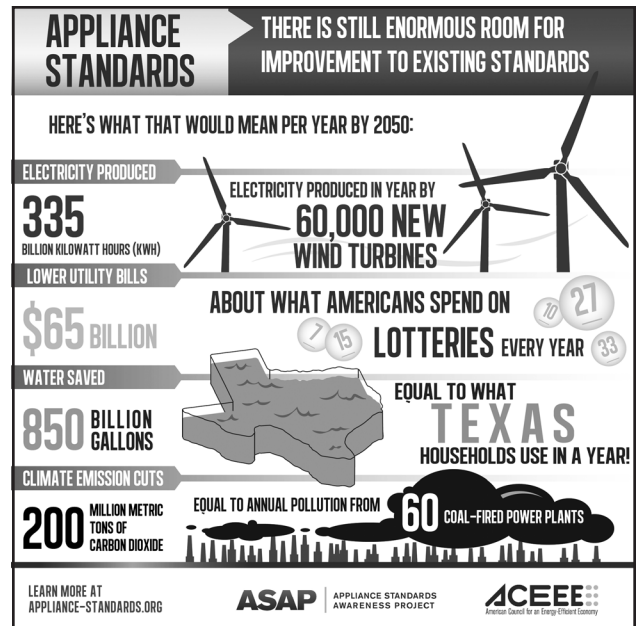
Renewables. Electric and gas at the facility are provided by PG&E. Jill said that Aramark has considered purchasing renewable electricity off-site, but she noted that the State may likely place limitations on the installation of PV equipment on the historic buildings at Asilomar.

Heating. The majority of buildings are heated by hydronic systems that are served by local boilers serving one to several buildings each. The controls are all local. "We would like to have central controls, but our heating consumption is minimal anyway." Monterey experiences about 3200 heating degree days per year.

Transportation. All on-site vehicles are either electric or propane-powered. Additionally, there are two electric vehicle charging stations at Asilomar for use by guests.

Housekeeping. In addition to the common practice of not washing linens and towels unnecessarily, staff are trained to turn off lights, close windows, and turn down thermostats in unoccupied rooms.

Landscaping. The landscaping at Asilomar is mostly managed by the State Parks. Given that most of the plantings are native species, there is no water used for irrigation, except for spot application of water on some new plants.



There will be a session on Friday morning with **Andrew deLaski** and **Joanna Mauer** of ASAP: *Next Generation Standards: Opportunities to Broaden the Impacts of Federal Appliance Standards*. Triton (panel 5).

Come Surf the Ride Board!

Are you looking for a ride after Summer Study? Can you offer someone else a ride? Some of The Latham Scholars, for example, could use a lift to the SF Bay Area, and you'd love the company!

Please visit the Ride Board in **Surf and Sand**

About Jill Heymsfield. Jill did a good job of answering our sometimes complex inquiries. We asked about her background, and how she ended up at Asilomar. "My degree is in Environmental Science, and Environment Management. This is the second Aramark facility I've managed – I used to be up in Denali. I like my job – and I'm happy doing this!"

Learn more

WaterCity. www.watercity.biz

Clean the World. www.cleanttheworld.org

Seafood Watch: www.seafoodwatch.org

INFORMAL SESSIONS 2-4 pm

Campaigning for a Better National Model Energy Code: Advocates' Briefing on the Current Campaign to Make the 2018 International Energy Conservation Code more Energy-efficient

Harry Misuriello, American Council for an Energy-Efficient Economy

ROOM: Chapel

Improving ZNE Programs by Engaging the Design Community

Ryan Kerr, Gas Technology Institute

ROOM: Fred Farr Forum

Emerging Technologies: What Is New and What Is the Cost?

Brian McCowan, ERS

ROOM: Heather

Deep Energy Efficiency – Getting to Scale: Lighting Retrofits and the UC 2025 Carbon Neutrality Initiative

Karl Brown, University of California, Berkeley Energy and Climate Institute/ CIEE

ROOM: Kiln

Extended Motor Product Database (XMP)

Geoff Wickes, Northwest Energy Efficiency Alliance

ROOM: Nautilus

Leveraging Field Inspector's Time for Energy Code Enforcement

Russell King, Benningfield Group

ROOM: Scripps

The Five "D's" of the Smart Grid – Dodge, Duck, Dip, Dive and Delay!

Sam Piell, Pacific Gas and Electric Company and Mark Martinez, Southern California Edison

ROOM: Triton

Strategies for Building Decarbonization

Merrian Borgeson, Natural Resources Defense Council

ROOM: Evergreen

How HVAC Will Save Solar: Smart HVAC Systems Role in Providing Grid and Consumer Benefits

John Taylor, Consortium for Energy Efficiency

ROOM: Oak Shelter

Lights, Meters, Study! A Preview of the Upcoming California Residential Lighting Inventory and Metering Study

Jenna Canseco, DNV GL

ROOM: Acacia

Residential Energy Labels: Getting to Scale through Mandates or Voluntary Approaches

Richard Faese, Energy Futures Group

ROOM: Toyon

Connected Thermostats: How Should We Estimate Their Energy Savings?

Abi Daken, US Environmental Protection Agency

ROOM: Dolphin

Energy Efficiency Programs and Policies to Support China's Energy & Climate Good

Bo Shen, Lawrence Berkeley National Laboratory

ROOM: Sanderling

Climate Action Plans: What's Needed to Support Robust Buildings Element

Liz Beardsley, United States Green Building Council

ROOM: Afterglow Living Room

The End of Residential Lighting: How Soon Will We Be Done and Can We Fill the Gaping Chasm Left Behind?

Glenn Reed, Energy Futures Group

ROOM: Embers Living Room

India Energy Efficiency Building Code Implementation

Sameer Kwatra, Natural Resources Defense Council

ROOM: Hearth Living Room

Re-defining the Preponderance of Evidence Standard

Alejandra Mejilla, CALTF

ROOM: Manzanita 1

Redesigning Test Methods to Prevent Gaming

Matt Malinowski, ICF International

ROOM: Manzanita 2

What's the State of Your State? Current Efficiency Mix of HVAC Equipment at the State Level

Daniel Vida, D+R International

ROOM: Oak Knoll 1 Living Room

Standardizing Connected Device Manufacturers' Data for Utility EE Programs

Patrick Hughes, National Electrical Manufacturers Association

ROOM: Willow Inn 2

Something to CHEER About!

Stephen Bickel, D+R International

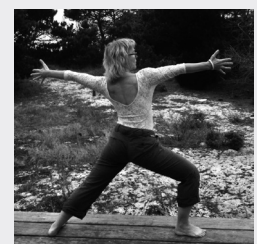
ROOM: Marlin

Looking for Work?
Have a Position to Announce?
There are job announcements
in **Surf and Sand** at the
literature table

YOGA!!

Amy Beley (200 hour registered yoga teacher) will teach a low key hatha/flow class **Thursday from 1-1:55**. Meet at the **yoga room** next to Long View North. If it happens to be sunny we can practice outside. No fancy yoga mats necessary.

Come as you are.



PANEL 13: DISPLAYS & POSTERS – MERRILL HALL

4:00 pm – 6:00 pm Thursday, August 25

Leveraging DSM Programs to Deliver on the Promise of Benchmarking and Disclosure Policies

Andrew Schulte, ICF International

Appraising Green: Show Me the Market Value

Elena Alschuler, U.S. Department of Energy

Digging Deeper for Energy Savings: A Look at Successful Residential Financing Program Designs

Katherine Johnson, Johnson Consulting Group LLC

Implementing Energy Efficiency with Speed and Scale - A Model for Success

Rupal Bain, The Energy Coalition

EZ Retrofit v3.0 – A Free Audit Tool to Assess Energy and Water Efficiency Opportunities in Multi-Family Properties

Alireza Bozorgi, ICF International, Inc.

Market Transformation Program Design – How Forward-Looking Product Specifications, Strategic Engagement and Competition Drive Adoption of Best-in-Class Technologies

Jane Kruse, PG&E

My kWh is Better than Yours: Using Loadshape Tools to Understand Electricity Demand

Timothy Murray, Cadmus

U.S.- India collaboration on Building Energy Efficiency: Showcasing the CBERD program results and impact

Reshma Singh, Lawrence Berkeley National Laboratory

Preaching to the Choir: Using Utility Data to Create Relevant Promotions for Energy Efficiency Programs

Kara Rodgers, Eversource

Spark Building Renewal! Make the Complex Simpler With New Assessment Tool For Deep Energy Retrofits

Sarah Hall, Northwest Energy Efficiency Alliance

Swimming to Midstream: New Residential HVAC Programs Models and Tools

Stephen Bickel, D&R International

Be Careful What you Ask For: Designing Survey and Interview Questions for Optimal Results

Jordan Folks, Research Into Action

Smart Thermostats Lessons Learned

Paul Smith, Franklin Energy Services LLC

Net Zero Energy and Carbon Planning: The Analysis and Integration of Strategies for the Redevelopment of the Ford Plant in Saint Paul, Mn

Richard Graves, Center for Sustainable Building Research

Energy and Indoor Air Quality Benchmarking of the NIST Net-Zero Energy Residential Test Facility (NZERTF)

Tania Ullah, U.S. Department of Commerce

Measuring up to Net Zero: The Status of New Construction Programs and How They Can Further Net Zero Energy in the Commercial Sector

Celia King-Scott, DNV GL

Growing Pains: How Utilities Are Meeting Increasing Efficiency Goals

Rachel Reiss Buckley, E Source

Modeling Energy And Water Use In Hotels To Identify, Drive, And Verify Savings In The Hospitality Sector

Lacey Kloster, Ecova

What Do Parallel Universes Tell Us about Evaluation? A Colorful Framework for Understanding Everything You Ever Needed To Know about Energy Program Evaluation

Ken Agnew, DNV GL

Savings for the Program, Savings for the Participant: Developing a Consistent and Scalable Methodology to Estimate Savings for Advanced Lighting Controls

Mudit Saxena, Vistar Energy Consulting

Impact Analysis of Developing Net Zero energy Buildings in China

Wei Feng, Lawrence Berkeley Nat'l Lab

Visualize It: New Tools to Inform Next Generation Plug Load and Appliance Programs

Paul Schwarz, Research Into Action

Making True Costs Transparent: Assessing the Effects of Providing Energy Efficiency Information to Online Consumers

Michael Hamilton, EMI Consulting

Thermostats, Market Potential, And Mercury: Results From 5 States And National Implications

Juri Freeman, Skumatz Economic Research Associates, Inc.

Leveraging Existing NEB Results: Meta Data Across Studies to Develop a Model and Values for Other States: A Short Term Shortcut?

Lisa Skumatz, Skumatz Economic Research Associates, Inc.

eDOT - An Early Stage Design Decision Tool for Building EE

Phil Haves, Lawrence Berkeley Nat'l Lab

The logo for 'The Grapevine' is written in a stylized, lowercase, cursive font. The letters are connected and have a soft, rounded appearance. The 'G' is particularly large and prominent.

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