SESSION TOPIC

Buildings: Getting Buy-in from Consumers, Businesses and Investors
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MODERATOR
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Making Electrification Real: Getting Buy-in from Consumers and Lenders

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GREEN ENERGY CONSUMERS ALLIANCE

August 29, 2019
Green Energy Consumers Alliance

- Mission to harness the power of consumers to speed the transition to a low-carbon future
  - > 10,000 Heating Oil members
  - 10,000 Green Powered members & EV buyers, most of which have gas
DO. OR DO NOT.
THERE IS NO TRY.

– Yoda
Massachusetts Ambition

- Efficiency plan for 2019-2021 would install 65,000, ~ 2X rate of 2018
  - (38,000 Residential, 6000 Low-Income, 18,000 C & I)
    - Residential incentives = $109 million, or 20% of Residential incentive budget
      - Maintaining that level of effort results in >200,000 by 2030
  
- Mass. Comprehensive Energy Plan calls for 500K to 750K installations by 2030
Heat pump installations 2017-2019
MARKET INTRANSPARENCY IS A MAJOR BARRIER TO PRIVATE INVESTMENT INTO EFFICIENT PRODUCTS

Which is more efficient?

<table>
<thead>
<tr>
<th>Samsung WA45H7000AW</th>
<th>Samsung - 4.5 Cu. Ft. 9-Cycle High-Efficiency Top-Loading</th>
<th>1B+ US purchases/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>$639</td>
<td>See offer</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Samsung WF45N5300AW</th>
<th>Samsung - 4.5 Cu. Ft. 8-Cycle Front-Loading Washer - White</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$648</td>
<td>See all 10 offers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2019 Tesla Model 3 Standard Range Plus</th>
<th>MsRP FROM $37,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>133 combined miles/hour</td>
<td></td>
</tr>
<tr>
<td>140 city miles/hour</td>
<td></td>
</tr>
<tr>
<td>124 highway miles/hour</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2019 BMW 230i Coupe</th>
<th>MsRP FROM $35,300</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 combined miles/city</td>
<td></td>
</tr>
<tr>
<td>24 city miles/city</td>
<td></td>
</tr>
<tr>
<td>35 highway miles/city</td>
<td></td>
</tr>
<tr>
<td>3.6 gals/100 miles</td>
<td></td>
</tr>
</tbody>
</table>
MARKET INTRANSPARENCY IS A MAJOR BARRIER TO PRIVATE INVESTMENT INTO EFFICIENT PRODUCTS

Visible Efficiency →

<table>
<thead>
<tr>
<th>Product</th>
<th>Efficiency Rating</th>
<th>Cost to Buy</th>
<th>Energy Use</th>
<th>Cost to Own &amp; Operate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samsung WA45H7000AW</td>
<td>47</td>
<td>$639</td>
<td>1%</td>
<td>111%</td>
</tr>
<tr>
<td>Samsung - 4.5 Cu. Ft. 9-Cycle</td>
<td></td>
<td></td>
<td>11%</td>
<td>63%</td>
</tr>
<tr>
<td>High-Efficiency Top-Loading</td>
<td>(1153)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samsung WF45N5300AW</td>
<td>94</td>
<td>$648</td>
<td>5%</td>
<td>26%</td>
</tr>
<tr>
<td>Samsung - 4.5 Cu. Ft. 8-Cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front-Loading Washer - White</td>
<td>(122)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Costs 1% less to buy
- Uses 111% more electricity
- Costs 11% more to own & operate

- Costs 5% less to buy
- Costs 63% less to drive
- Costs 26% less to own & operate
The Enervee Score®

- Universal, 0 to 100 relative energy efficiency rating
- Dynamic, updated daily
- Spans all products in 26 categories including retail prices and offers
- Proven to drive more efficient purchase decisions
Why utilities love it

**ENERGY EFFICIENCY & DEMAND RESPONSE**
- COST EFFECTIVE & HIGHLY SCALABLE
- TRC as high as 2.67
- Increased DR participation

**CSAT**
- CSAT lift up to 24%
- Increased participation into Rewards Programs

**ELECTRIFICATION**
- CUSTOMER SATISFACTION
- 33% of car shoppers bought EVs
- Increased participation into Rewards Programs
- Increased Community Solar enrollment
- Increased Battery Storage placement

...and more
Transparency in Energy Costs & Real-Estate

Véronique Bugnion
CEO
The Real-Estate Transaction

*Household energy is approx. 20% of total energy use*

**Goal: Reward Efficiency**

- Tax Data
- Realtor Input
- Energy Facts - HELIX

**Why: Reduce Cost, Reduce Risk**

- Listing
- Sale
- Improvements
- Financing

**Disclosure**
What Energy Information Can/Should Be Disclosed?

Certifications
- Home Energy Score, HERS, LEED, NGBS, EnergyStar®, ZERH, State…
- HELIX

Solar
- Capacity & estimated production
- Type of ownership
- HELIX (20 States)

Everything else is missing...
- EnergyStar® energy systems and appliances
- DIY & contractor home efficiency improvements
State of Disclosure

Portland, OR  
Dec 2016  
Time of Listing  
HES

Berkeley, CA  
March 2015  
Time of Sale  
HES

Minneapolis, MN  
Feb 2019  
Time of Sale  
TISH Report

Montpelier, VT  
Jun 2019  
Time of Listing  
AEM

Austin, TX  
April 2011  
Time of Sale  
ECAD
Energy Costs & Home Financing

Current Situation: Specialized Mortgage Products

**HERS rated homes sell for 2.7% more than unrated homes**
- +2% for every 10 HERS points
- 4th quartile homes sell for 5.2% more than 1st quartile homes

- Home energy attributes need to be incorporated in the appraisal process
- Automate energy valuation and connections to certification and solar databases

* Sahadi & al., IMT&UNC, 2013
** Freddie Mac, publication forthcoming

Buyers of EnergyStar® homes are 32% less likely to default*
- Within EnergyStar® homes, the greater the efficiency, the smaller the likelihood of default

*Sahadi & al., IMT&UNC, 2013
** Freddie Mac, publication forthcoming