Look at Me Now! A Time Series Analysis of California Residential End Uses

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Evergreen Economics
Appliance standards will help efficiency goals
Onsite surveys are key to accomplishing efficiency goals

In Home Measures → On Site Surveys and Metering Studies → x2 Appliance Efficiency
Two data sources were used to create a longitudinal study

<table>
<thead>
<tr>
<th>California Lighting and Appliance Saturation Survey (CLASS)</th>
<th>Home Energy Use Study (HEUS) 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 1,987 homes</td>
<td>• 1,000 homes</td>
</tr>
<tr>
<td>• PG&amp;E, SCE and SDG&amp;E</td>
<td>• PG&amp;E</td>
</tr>
<tr>
<td>• Home characteristics, lighting and appliances</td>
<td>• Building shell, heating/cooling, water heating, major appliances, and plug loads</td>
</tr>
</tbody>
</table>
How were measures selected?

**TVs**
Generally replaced before end-of-life

**Refrigerators**
Replaced at the end or after end-of-life

**Electric Vehicle Chargers**
An emerging technology that will be closely watched
Findings - Televisions

**HEUS (2016)**
- CRT: 14%
- LED: 13%
- LCD: 66%
- Projection: 2%
- Plasma: 3%

**CLASS (2012)**
- CRT: 27%
- LED: 10%
- LCD: 51%
- Projection: 2%
- Plasma: 4%
Findings - Refrigerators

HEUS (2016)
- 50% (1985 to 1999)
- 49% (2000 to 2009)
- 1% (2010 to 2016)

CLASS (2012)
- 77% (1985 to 1999)
- 14% (2000 to 2009)
- 9% (2010 to 2016)
Findings - Refrigerators

Vintage

- 2010 to 2016
- 2000 to 2009
- 1985 to 1999

Average Annual kWh

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Findings - EV Chargers

% of Homes with EV Charger

2012 2014 2016 2018
0% 2% 4% 6% 8%

HEUS Literature Review

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Conclusions

Broad and deep datasets can be used to uncover market wide trends

This data can be used to inform C&S and plan for the future

CLASS 2012

HEUS 2016

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