Evaluation and Codes and Standards Programs

Allen Lee
August 13, 2020
About Cadmus

Since 1983 Employee-owned social good consultancy

37 Years Of helping our clients address complex challenges in a highly collaborative environment

Started with 2 Co-Founders

500+ strong as of 2020

19 locations around the globe
Cadmus Energy Services

Services to meet the changing demands of the energy landscape

Evaluation and market research
Resource planning and integration
Policy, regulation, and programs
Advanced analytics
High performance buildings
Business resilience
Marketing and outreach
Codes and Standards (C&S) Services

• Clients
  • Utilities, program administrators
  • Regulators
  • Local, state, regional, federal organizations

• Project types
  • Program evaluations
    • Impact
    • Process
  • Compliance studies
  • Policy and program design

• Examples
  • California utilities’ statewide Codes and Standards Program (10 years)
  • 21 state code compliance studies
  • BC Hydro North American Code/Standard Program attribution review
Rationale for C&S Advocacy

Problem: New C&S raise baseline
- Reduces program savings

Response: Support C&S adoption
- Adopt evaluation method

Outcome: Generate C&S savings
- Evaluate savings
- Attribute market savings
Problem: C&S noncompliance occurs

Response: Support compliance enhancement
  - Underestimates program savings
  - Measure compliance
  - Improve compliance

Outcome: Increase verified C&S savings
  - Evaluate savings
  - Attribute program & market savings
## C&S Program Examples

| Development/adoption advocacy | • California utilities’ Codes and Standards Program  
| | • Massachusetts program administrators’ program  
| | • Northwest Energy Efficiency Alliance appliance standards  
| Compliance enhancement | • Massachusetts program administrators’ training program  
| | • NYSERDA training, technical assistance program  
| Reach/stretch code adoption | • National Grid Rhode Island  
| | • California utilities  

# Why Conduct C&S Studies?

<table>
<thead>
<tr>
<th>Study Types</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance studies</td>
<td>Provide new-product efficiency baseline</td>
</tr>
<tr>
<td>Program evaluations</td>
<td>Attribute energy savings</td>
</tr>
<tr>
<td>Best practice research</td>
<td>Inform program design</td>
</tr>
</tbody>
</table>

- **Compliance studies**: Provide new-product efficiency baseline
- **Program evaluations**: Attribute energy savings
- **Best practice research**: Inform program design
California has most comprehensive method for evaluating savings from supporting adoption
Massachusetts applies similar logic to evaluate savings from supporting compliance enhancement
Arizona implements hybrid deemed/quantification approach to credit utilities with partial savings from C&S
Evaluation Method Observations

• Potential savings are much larger for C&S adoption than compliance improvements
  • Adopting standards offers significant savings potential

• Evaluation method parallels usual energy-efficiency evaluation program protocol, but key questions must be answered
  • What policy conflicts exist?
  • How will impacts on future products be treated?
  • What is appropriate baseline?
  • Should impacts be quantified as net or gross?

• Cost and complexity can be tailored

• Comprehensive reference available
  • Allen.Lee@cadmusgroup.com
Implications for Minnesota

*It is the energy policy of the state of Minnesota to achieve annual energy savings equal to 1.5 percent of annual retail energy sales of electricity and natural gas directly … and indirectly through energy codes and appliance standards… [Next Generation Energy Act of 2007]*

<table>
<thead>
<tr>
<th>Lack of C&amp;S program has consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increasing baseline reduces voluntary program savings</td>
</tr>
<tr>
<td>• Noncompliance understates program savings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C&amp;S program requires statewide perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Impacts affect entire markets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation can be tailored</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Attribution needs attention in net vs. gross assessment</td>
</tr>
<tr>
<td>• Evaluation approach should be crafted with program design</td>
</tr>
</tbody>
</table>
Thank You/Q&A

allen.lee@cadmusgroup.com
971 235 6734