Developing a HERS Rating Infrastructure

ENERGY STAR® for New Homes Utility Stakeholder Meeting
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Presented by

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ICF International
Outline

- Background
- Overview of HERS Rating Infrastructure
- Why a Market-based Infrastructure was Selected
- Steps Taken to Establish
- Advantages
- Disadvantages
- Program Results
- Lessons Learned
Background - Texas Electric Choice Act

- Utility Deregulation
- Load Growth Management
- Energy efficiency programs funded by rate payers
- ENERGY STAR Homes Program sponsored by IOU's:
  - CenterPoint Energy
  - Entergy
  - Oncor Electric Delivery Company (Formally TXU Electric Delivery)
  - Texas New Mexico Power
Background – Service Territories
Oncor’s Service Territory

- Large geographic area
- More than 47,000 new homes completed each year in service territory
- Diverse markets comprised of large metropolitan areas (Dallas and Ft. Worth) and small towns (Waco, Tyler)
- Majority of homebuilders complete 100+ homes per year
  - Some complete more than 1,000 per year
- Homebuilders are extremely competitive on price and luxurious amenities
Overview of HERS Rating Industry

- Consists of HERS Rating Providers and HERS Raters
- Must complete 40 hour Residential Energy Services Network (RESNET) approved accreditation training
- RESNET accredits HERS Rating Providers
- HERS Rating Providers are responsible for certifying HERS Raters
- Only HERS Rating Providers can verify homes meet ENERGY STAR guidelines and print ENERGY STAR certificates
## Overview of HERS Rating Industry

Comparison of Services offered by HERS Rating Providers and HERS Raters:

<table>
<thead>
<tr>
<th>Services</th>
<th>HERS Rating Provider</th>
<th>HERS Rater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan Analysis</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Technical assistance to achieve ENERGY STAR guidelines</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>On-site inspection (Blower Door and Duct Blaster)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>ENERGY STAR Verification</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Printing ENERGY STAR certificates</td>
<td>YES</td>
<td>NO</td>
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</tbody>
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HERS Rating Models

Single Administrator/Implementer.
- The utility, state agency, or program administrator provides all the services of a HERS Rater and Rating Provider to verify home performance.
- Program typically covers all of the costs associated with verification.

Single HERS Rating Provider.
- Either a non-profit organization, company, state agency designated as the program’s “preferred” rating provider.
- Can include multiple HERS Rater companies competing to provide on-site testing services, or, the preferred provider conducting all services.
- Homebuilder typically covers the costs associated with verification.

Competitive, Market-based Rating Infrastructure.
- Multiple HERS Rating Providers and HERS Raters competing in the market to provide verification services to homebuilders participating in the program.
- Homebuilder typically covers all of the costs associated with verification.
Why a Market-Based Approach?

- **Aggressive energy efficiency goals**
  - Goal of 7,400 kW and 24,600 MWh during first year

- **Needed to offer through entire service territory**
  - 88 counties and 372 cities
  - Approximately 45,000 new homes built annually

A competitive, market-based HERS rating infrastructure was viewed by Oncor and ICF as a solution to rapidly establish and expand the program to achieve aggressive goals.
Steps Taken to Establish Infrastructure

- Sponsored HERS Rater trainings to quickly deliver accredited Raters to the market
  - 11 trainings delivered, more than 160 trained
- Offered scholarships for individuals in remote areas of service territory to attend HERS Rater trainings
- Delivered trainings on how to become an accredited HERS Rating Provider and own and operate a successful rating business
- Provided turnkey tools for raters to market and sell home verification services to homebuilders
- Guided raters through the process of becoming an accredited HERS Rating Provider
- Established the Texas Home Energy Organization
Advantages

- **Quickly Established Infrastructure Needed to Support Program**
  - 15 HERS Rating Providers and 164 certified HERS Raters during first four years

- **Reduced Capital Costs and Operating Expenses**
  - Shifted the capital costs and expenses associated with operating a home verification service to the private market
  - All investments to analyze, test, and verify home compliance with ENERGY STAR was made by the private HERS rating companies

- **Allowed Utility to Focus on Critical Areas of Program**
  - Monitoring production pipelines to ensure goal is achieved
  - Recruiting and maintaining partners
  - Advancing energy performance (improving cost efficiencies)
  - Expanding program to achieve increasing annual goals

- **Achieved Rapid Expansion of Program Across Service Territory**
Advantages

Annual Delivery of ENERGY STAR Certificates and Partner Participation

<table>
<thead>
<tr>
<th>Program Year</th>
<th>ES Homes</th>
<th>Builders</th>
<th>Raters</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>6,499</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2003</td>
<td>43</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>2004</td>
<td>14,087</td>
<td>54</td>
<td>15</td>
</tr>
<tr>
<td>2005</td>
<td>13,014</td>
<td>68</td>
<td>15</td>
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Advantages

- **Realized Market Improvements Through Increased Competition Between HERS Rating Companies:**
  - Pre-sheet rock inspections to reduce risk of a home not passing the final verification test (prior to adoption of the Thermal Bypass Checklist)
  - Turnkey solutions for homebuilders (i.e. submit required program data to TXU Electric Delivery)
  - Performance-based pricing structures

- **Reduced Risk of Achieving Annual Goals**
  - Spread out risk among multiple raters
  - Reward raters who outperformed competitors
  - Increase number of individuals promoting the program to builders

- **Contributed to the Economic Development of the Region**

- **Established Foundation of Companies that Can Support Future Residential Programs**
Disadvantages

- **Increased Risk**
  - Lack of control of HERS ratings and company performance

- **Intensified Level of Supervision and Management**
  - Assist HERS Raters in becoming viable companies
  - Closely manage the activities of HERS Raters to ensure goals will be met
  - Established TXHERO to “self monitor”

- **Increased Oversight on Quality Assurance**
  - Verify HERS Raters followed RESNET guidelines and that homes meet ENERGY STAR specifications
  - 99.3% of passing rate in 2005 (2 failures out of 295 homes retested)
Disadvantages

Rater Performance
Percent of Initial Commitment Delivered to Program

- Rater A: 62%
- Rater B: 20%
- Rater C: 61%
- Rater D: 48%
- Rater E: 25%
- Rater F: 101%
- Rater G: 7%
- Rater H: 46%
- Rater I: 40%
- Rater J: 73%
- Rater K: 44%
- Rater L: 13%
- Rater M: 149%
## Program Results

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
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<tbody>
<tr>
<td>Participating builders</td>
<td>29</td>
<td>43</td>
<td>54</td>
<td>68</td>
</tr>
<tr>
<td>Original home goal</td>
<td>3,000</td>
<td>10,000</td>
<td>11,000</td>
<td>16,000</td>
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<tr>
<td>Homes delivered</td>
<td>6,492</td>
<td>13,533</td>
<td>14,087</td>
<td>13,000</td>
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<tr>
<td>Total kWh savings (in million)</td>
<td>24.6</td>
<td>24.3</td>
<td>26.7</td>
<td>25.7</td>
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<tr>
<td>Total MW savings</td>
<td>7.4</td>
<td>29</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>Ave. kW / home</td>
<td>1.15</td>
<td>2.14</td>
<td>2.17</td>
<td>2.24</td>
</tr>
</tbody>
</table>
Lessons Learned

- A utility must closely monitor the performance of HERS rating companies to manage risks and achieve annual goals.

- Requires a significant amount of oversight to ensure annual goals are achieved, the industry continuously matures, and rating companies become self-sufficient.

- Quality of HERS ratings is not adversely affected when performed by independent and competitive HERS rating companies.

- HERS rating infrastructure can be leveraged and used for other residential energy efficiency programs (i.e. home performance).

- Allows the best HERS rating companies to prosper and grow while others slowly withdraw from the market.