ENERGY STAR: A win-win partnership that benefits business and society

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ENERGY STAR partners: An efficiency community

Many players
Many roles and responsibilities
Common goals: Financial and environmental value
EPA’s ENERGY STAR piece

• Help facilitate the community by providing transparency, standardization and education:
  ✓ Understandable benchmarks and metrics
  ✓ Objective resources distilled from proven practices
  ✓ Strong brand recognition
  ✓ Motivation for improvement
  ✓ Badge of success for top performance
  ✓ Community and network of experts
Partners together

• Strengthen business networks
• Develop new partnerships
• Learn from each other about proven solutions and new technologies
• Pursue untapped opportunities to work together to bring energy efficiency to scale
Welcome to the Leadership Circle:
Partner of the Year 2017:
Leaders in Energy Management and ENERGY STAR

Best practices demonstrated by ENERGY STAR award winners

- LED retrofits
- Energy performance reports
- Employee engagement
- Solar/renewable energy
- Demand response
Building demand for EE investment
ENERGY STAR partners = 6,000
Energy savings:
Commercial buildings = $7.8 billion
Industrial plants = $2.6 billion

Building market for products/services
Partners = 1,000
Energy Services Markets: ~$8 Billion
Jobs = 290,000 workers manufacture
Energy Star products

Building a market framework
Benchmarking policies: 27
Square footage covered: 11 billion
Voluntary programs: <40
Utility C&I programs: $2.8 billion
Utility Data Access: 10% benchmarking
< 6 million customers
Recent ENERGY STAR updates

• Making it easier to find solutions:
  – New utility data and state and local policy maps
  – New directory to find licensed professionals

• Reaching new audiences with energy efficiency opportunities:
  – Tenant engagement
  – Host your own competitions
  – College curriculum (with broader educational uses)

• Improving Portfolio Manager:
  – 1-100 ENERGY STAR score updates on track for 2018
  – Updated dashboard features
  – Demand tracking
  – New multifamily housing water score
Insights into the Commercial Building Market
If U.S. buildings and plants were their own country, they would rank third in the world in greenhouse gas emissions, behind only China and the United States.
Building Sector Activity
Top 5 market sectors same in 2003 and 2012
Except warehouse category moved from #3 to #2

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Office</strong> 12.2 Billion ft2</td>
<td><strong>Office</strong> 16.0 Billion ft2</td>
</tr>
<tr>
<td>2</td>
<td><strong>Mercantile</strong> 11.2 Billion ft2</td>
<td><strong>Warehouse</strong> 13.0 Billion ft2</td>
</tr>
<tr>
<td>3</td>
<td><strong>Warehouse</strong> 10.1 Billion ft2</td>
<td><strong>Education</strong> 12.2 Billion ft2</td>
</tr>
<tr>
<td>4</td>
<td><strong>Education</strong> 9.9 Billion ft2</td>
<td><strong>Mercantile</strong> 11.3 Billion ft2</td>
</tr>
<tr>
<td>5</td>
<td><strong>Enclosed and Strip Malls</strong> 6.9 Billion ft2</td>
<td><strong>Enclosed and Strip Malls</strong> 5.9 Billion ft2</td>
</tr>
</tbody>
</table>
Building sector benchmarking penetration varies in Portfolio Manager

Estimated market penetration by square footage

- Office
- School
- Retail
- In-Patient Healthcare
- Lodging
- Public Order and Safety
- Warehouse
- Public assembly
- Religious Worship
- Malls
- Foodservice
Benchmarking growing in building sectors without ENERGY STAR scores

Top 5 Estimated Increases in property types without ENERGY STAR scores (2013-2016)

- Food Service
- Mailing Center/Post Office
- College/University
- Mixed Use Property
- Fire Station
Factors impacting market penetration

**Drivers**

- ENERGY STAR scores
- Service Providers
- Education and awareness:
  - Trade associations
  - Training
  - ENERGY STAR partner
- Sustainability goals and reporting
- Building ownership when the building is the business

**Barriers**

- No ENERGY STAR scores
- Building ownership:
  - Split incentives
  - Tenant engagement
  - Access to energy data
  - Diffuse ownership
- Limited education and awareness
- Smaller buildings and class B/C office

*Exceptions: Warehouse, religious worship, lodging*

*Exceptions: Fire and police stations*
Building Size
5.6 million commercial buildings in the U.S
Average Size= 15,700 square feet

- Smallest 50% account for 9.2% of floor area
- Largest 0.8% account for 20.4% of floor area

~50% of national floorspace has been benchmarked across 9% of buildings

<table>
<thead>
<tr>
<th>Building Size</th>
<th>Percentage of Buildings Benchmarked</th>
<th>Percentage of Square Footage Benchmarked</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 100,000 SF buildings</td>
<td><img src="chart1.png" alt="Pie Chart" /></td>
<td><img src="chart2.png" alt="Pie Chart" /></td>
</tr>
<tr>
<td>100,000–250,000 SF buildings</td>
<td><img src="chart3.png" alt="Pie Chart" /></td>
<td><img src="chart4.png" alt="Pie Chart" /></td>
</tr>
<tr>
<td>250,000-500,000 SF buildings</td>
<td><img src="chart5.png" alt="Pie Chart" /></td>
<td><img src="chart6.png" alt="Pie Chart" /></td>
</tr>
<tr>
<td>500,000+ SF buildings</td>
<td><img src="chart7.png" alt="Pie Chart" /></td>
<td><img src="chart8.png" alt="Pie Chart" /></td>
</tr>
</tbody>
</table>
Certified buildings by floor area

<table>
<thead>
<tr>
<th>Percentage of buildings certified</th>
<th>Percentage of square footage certified</th>
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<tr>
<td>&lt; 100,000 SF buildings</td>
<td></td>
</tr>
<tr>
<td>100,000–250,000 SF buildings</td>
<td></td>
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<tr>
<td>250,000+ SF buildings</td>
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<tr>
<td>500,000+ SF buildings</td>
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Represents percentages of ENERGY STAR certified buildings in the top 30 U.S. markets. Percentages are, on average, similar in the 20 smallest markets.
Geographic distribution
Top benchmarking and certification metro areas (totals)

**Active Benchmarks**

- New York-Newark-Jersey City...
- Seattle-Tacoma- Everett...
- Los Angeles-Long Beach...
- Washington-Arlington-Bl...  
- Chicago-Naperville-Elgin...
- San Francisco-Oakland-...  
- Boston-Cambridge-Charle...  
- Philadelphia-Camden-Phila...
- Houston-The Woodlands...
- Minneapolis-St. Paul-Minneapolis...

**Cumulative Certifications**

- Los Angeles-Long Beach...
- Washington-Arlington-Bl...  
- New York-Newark-Jersey...  
- Dallas-Fort Worth...
- San Francisco-Oakland-...  
- Chicago-Naperville-Elgin...
- Atlanta-Sandy Springs...
- Houston-The Woodlands...
- Boston-Cambridge-Charle...
- Denver-Aurora-Lakewood...
Growth in benchmarking occurring in smaller jurisdictions

Top 10 Metropolitan Areas by % Growth in Benchmarked Buildings 2015 to 2016

- % Growth (Buildings)
- % Growth (Square Footage)
Growth in benchmarking occurring in smaller jurisdictions

Service and Product Provider Activity
Service and Product Providers contributed over 80% of benchmarking volume and over 70% of certification volume in the first half of 2017.
Benchmarking through web services is significantly outpacing manual entry.
Increase entrants to benchmarking and drive action

• Turn data into information and knowledge:
  – Spend less time on gathering data
• More time for energy management and improvement
Recognition and Improvement
Johnson Controls Energy Efficiency Indicator Survey 2017 indicates that **benchmarking and certification drive investment and improvement**

What are the most effective policies driving investments in energy improvement?

- **52%** Government policy continues to be important, with 52 percent of organizations rating it as a very or extremely significant driver for investment.
- **83%** Identified building performance benchmarking and certification as very or extremely important in driving investments in energy improvement.
- **81%** Identified government leadership in leasing, building design and retrofits as very or extremely important in driving investments in energy improvement.
Certification continues to grow overall and for recertification.
Property types with biggest opportunities for certification growth

- These five property types have the most benchmarked properties that are eligible for certification but are not yet certified (28,000 properties combined)

<table>
<thead>
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<th>Property Type</th>
<th>Certification Growth Potential</th>
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<tbody>
<tr>
<td>Office</td>
<td></td>
</tr>
<tr>
<td>K-12 School</td>
<td></td>
</tr>
<tr>
<td>Retail Store</td>
<td></td>
</tr>
<tr>
<td>Multifamily Housing</td>
<td></td>
</tr>
<tr>
<td>Bank Branch</td>
<td></td>
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Competitions drive savings
10% improvement within 5 years
Where did ENERGY STAR certified buildings start benchmarking?

34% of buildings reported starting scores below 75
The buildings we most need to reach are the ones farthest from any possibility of recognition.
What do the trends tell us?

• Good market penetration in benchmarking
  – 50% of the floor space still remains- smaller and hard to reach

• Some building sectors have deep penetration
  – Barriers remain in other sectors

• Local and state policies driving action, especially in larger jurisdictions
  – Action is growing in smaller jurisdictions

• Service providers driving benchmarking
  – Can deliver benefits to customers through certification and awareness

• Improvement in building efficiency occurring
  – Much more opportunity exists
Next steps for EPA

• Reach additional sectors through tailored resources addressing business barriers
• Reach smaller buildings and organizations through our partner network
• Evaluate building-specific improvement recognition with low administration cost that doesn’t conflict with ENERGY STAR certification
Opportunities for our partnership

- Communities engage
- Businesses mentor
- School districts lead by example
- Association chapters and NGOs educate
- Utilities provide programs and data access
- Product/service providers offer solutions

……to realize savings for businesses and organizations, grow the local economy, create jobs and improve environmental quality.

Use ENERGY STAR to tap into immediate brand recognition and consistency