



ENERGY STAR Partner

ENERGY STAR Most Active
Licensed Professional

Portfolio includes 80 Award Labels

EMA-Boston.com

Steve Di Giacomo, PE, CEM, CPMP

EXISTING BUILDING RATINGS



ENERGY STAR. The simple choice for energy efficiency.



WHAT HAPPENED

WHY

REMEDIES

The biggest little label in energy efficiency . . . What happened to my Score?



The biggest little label in energy efficiency . . . How low did it go?



ENERGY STAR



RAMIFICATIONS?

1. 50% reduction in ENERGY STAR Awards
2. Possible lost of BERDO “exemption” status. The second 5-Year BERDO Cycle begins 1/1/2019, need 3 Awards per cycle for exemption.
3. Perhaps as many as a 1000 LEED EB certified properties may no longer be eligible for renewal without first raising their score to 75. LEED EB “bonus” points gained from super high ENERGY STAR scores are reduced







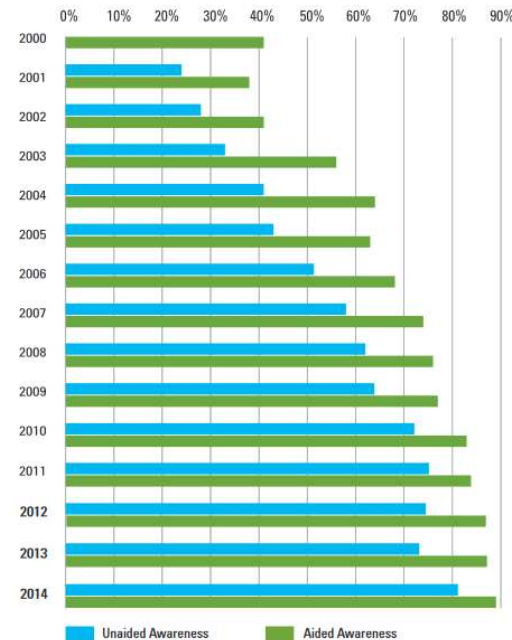


Consumer awareness

Recognized by more than 85% of the American public.

Tied with the Good Housekeeping® seal as the most influential consumer emblem in the nation.

Source: National Awareness of the ENERGY STAR for 2014: Analysis of CEE Household Survey, U.S. EPA 2015b.





The biggest little label in energy efficiency for Products & Services

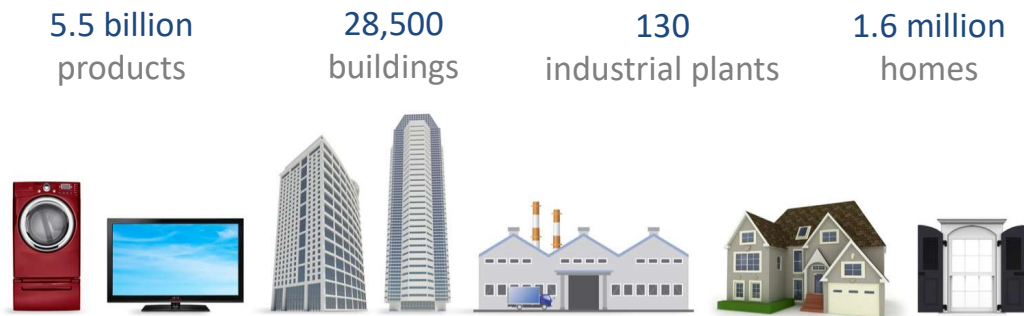


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For more than 20 years, EPA's ENERGY STAR program has identified the most energy-efficient **products**, **buildings**, **plants**, and **new homes** – all based on the latest government-backed standards.

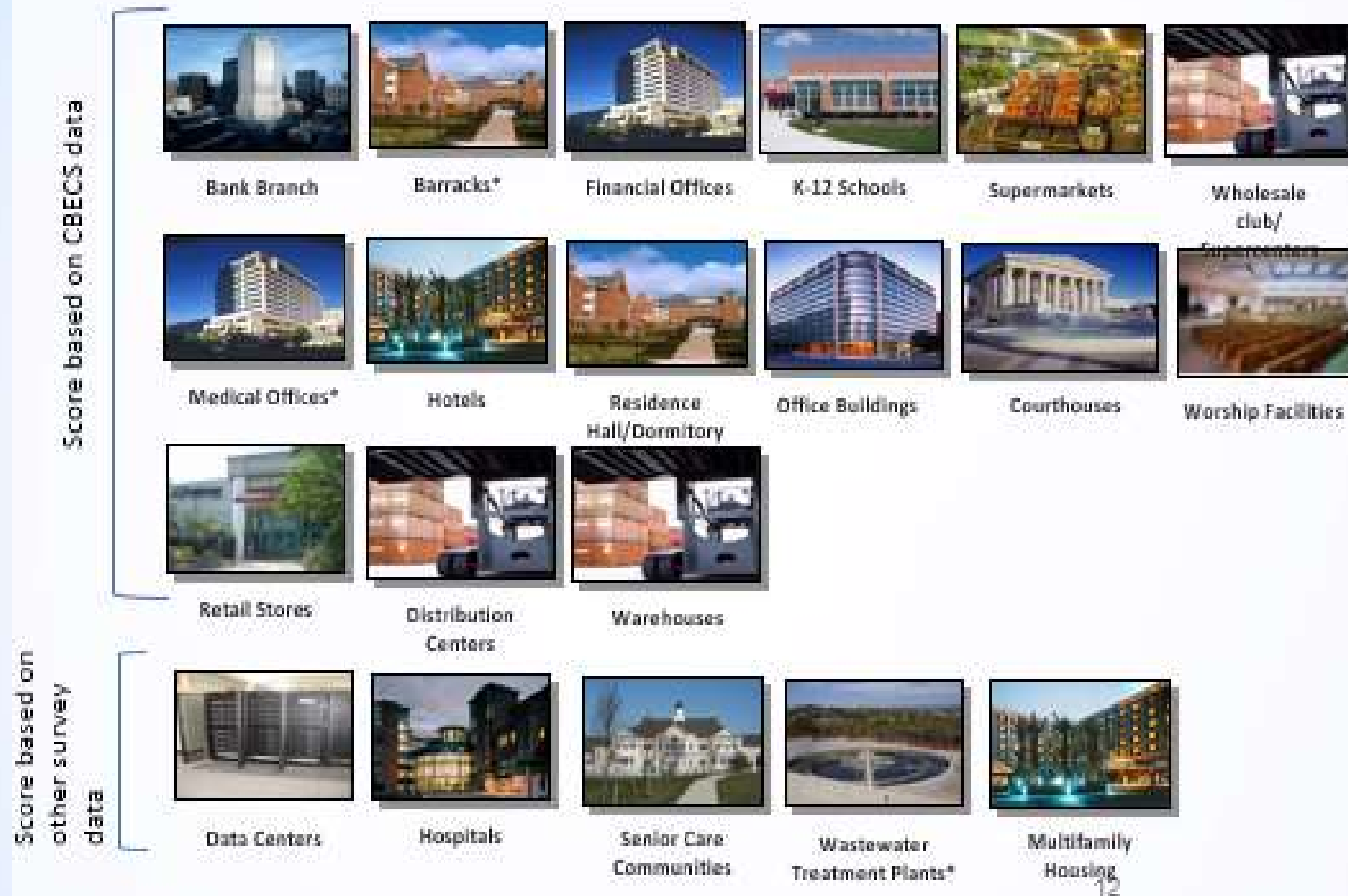
Today, every ENERGY STAR label is verified by a rigorous third-party certification process.



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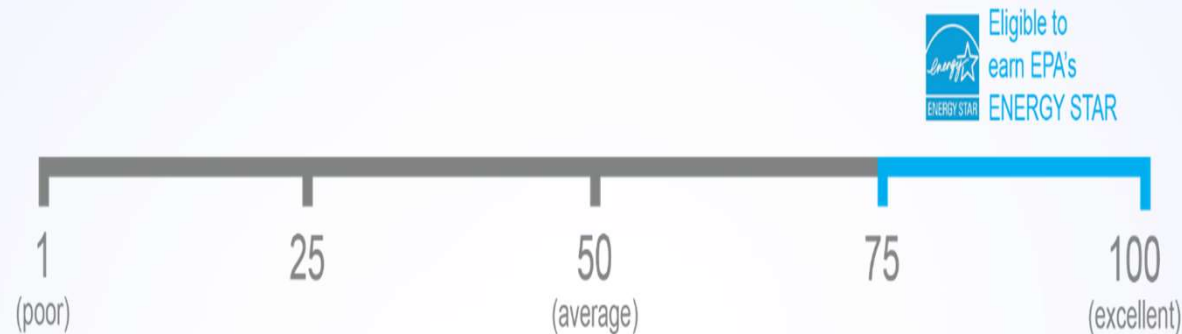
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Building types eligible to receive an ENERGY STAR score



*These building types are not eligible for ENERGY STAR certification.

ENERGY STAR Rating System



Primary objectives of the 1-100 ENERGY STAR score remain:

- Compare buildings to the national population of peer buildings
- Evaluate energy performance for a whole property using actual metered energy consumption
- Normalize for building activity, weather and climate
- Offer a simple way to evaluate measured energy use, prioritize investments, and communicate relative performance across a portfolio of buildings

ENERGY STAR Rating System

- A. Scores are determined based on Source BTUs assuming all data is verified by a Licensed Professional (PE or RA) and you achieve two important Indoor Environmental (ASHRAE) Standards, and IESNA min. FCs

1) Ventilation for Acceptable Indoor Air Quality

Does this property meet the minimum ventilation rates according to ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality?

☒ Yes ☐ No

2) Acceptable Thermal Environmental Conditions

Does this property meet acceptable thermal environmental conditions according to ANSI/ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy?

☒ Yes ☐ No

3) Adequate Illumination

Does this property meet the minimum illumination levels as recommended by the Illuminating Engineering Society of North America (IESNA) Lighting Handbook?

☒ Yes ☐ No



**What's so great about
ENERGY STAR Awards
anyhow?**

Assures tenants and building owners that their building is achieving high energy utilization while maintaining adequate ventilation, temperature, humidity and lighting levels

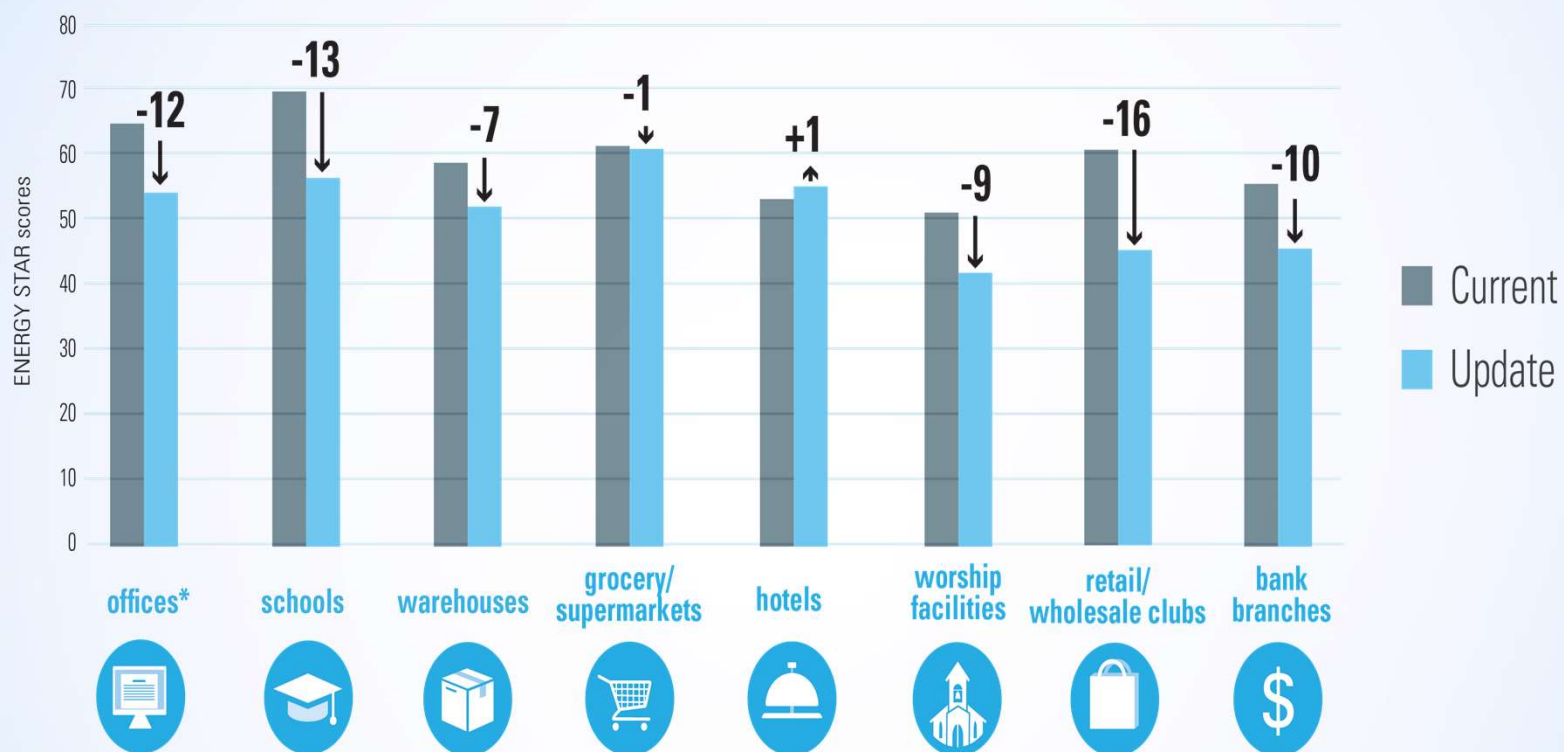
**Cutting Energy Costs Is Smart.
Doing It While Improving Indoor
Air Quality Is Just Plain
Genius.**



ENERGY STAR Rating System

- B. Create your property in Portfolio Manager. Zip-code keys in ISO Grid and pertinent weather files. Input all required data for your building type, typically GFA, % heated, % cooled, energy usage (elec., gas, oil, coal wood, coke, propane etc), demand data associated costs, # of people, hours per week, vacant space, # of PCs, # of occupants, Data Center (N, N+1), retail reach in, K-12 walk-in, cell tower kWh, parking lot lights if they're not billed separately, swimming pool size, onsite solar, onsite wind, district heating, district cooling, etc. Green power (biogas, geothermal, small Hydro, solar, wind, eGrid subregion)
- C. ENERGY STAR Score 1-100 is automatically performs energy weather normalizations, and makes adjustments on each of the above input parameters to arrive at a normalized Source kBTU per sq foot and thus a Score.
- D. Custom Reports – create just about any report imaginable. Tremendously useful when tracking GHGs, Ranking, Site or Source BTUs or any combination. De Factor reporting platform for BERDO, BEUDO, NYC, DC, Seattle, etc.

Average ENERGY STAR score change by space type



*office, financial office, courthouse

These are average score changes for these building types. An individual building's score change is likely to differ from the average change shown above.

Who got updated?

- 1-100 ENERGY STAR score models (based on CBECS 2012)

- **Offices**

- Financial offices
- Bank branches
- Courthouses

- **K-12 Schools**

- **Retail**

- Retail store
- Warehouse club/ supercenter

- **Supermarkets**

- **Hotels**

- **Warehouses**

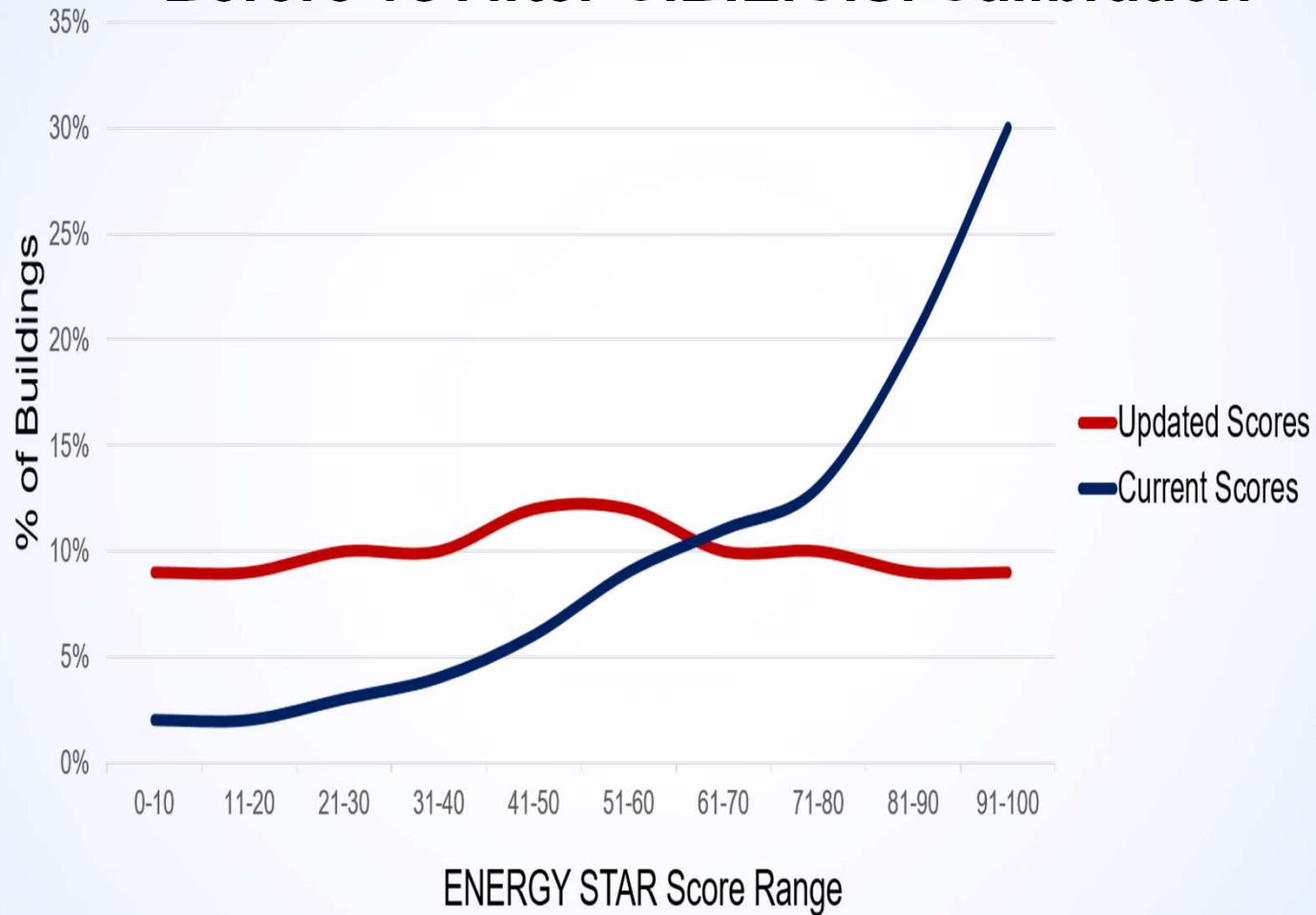
- Refrigerated
- Non-refrigerated
- Distribution centers

- **Houses of Worship**

Released on August 26, 2018

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ENERGY STAR Score Distribution Before vs After C.B.E.C.S. Calibration



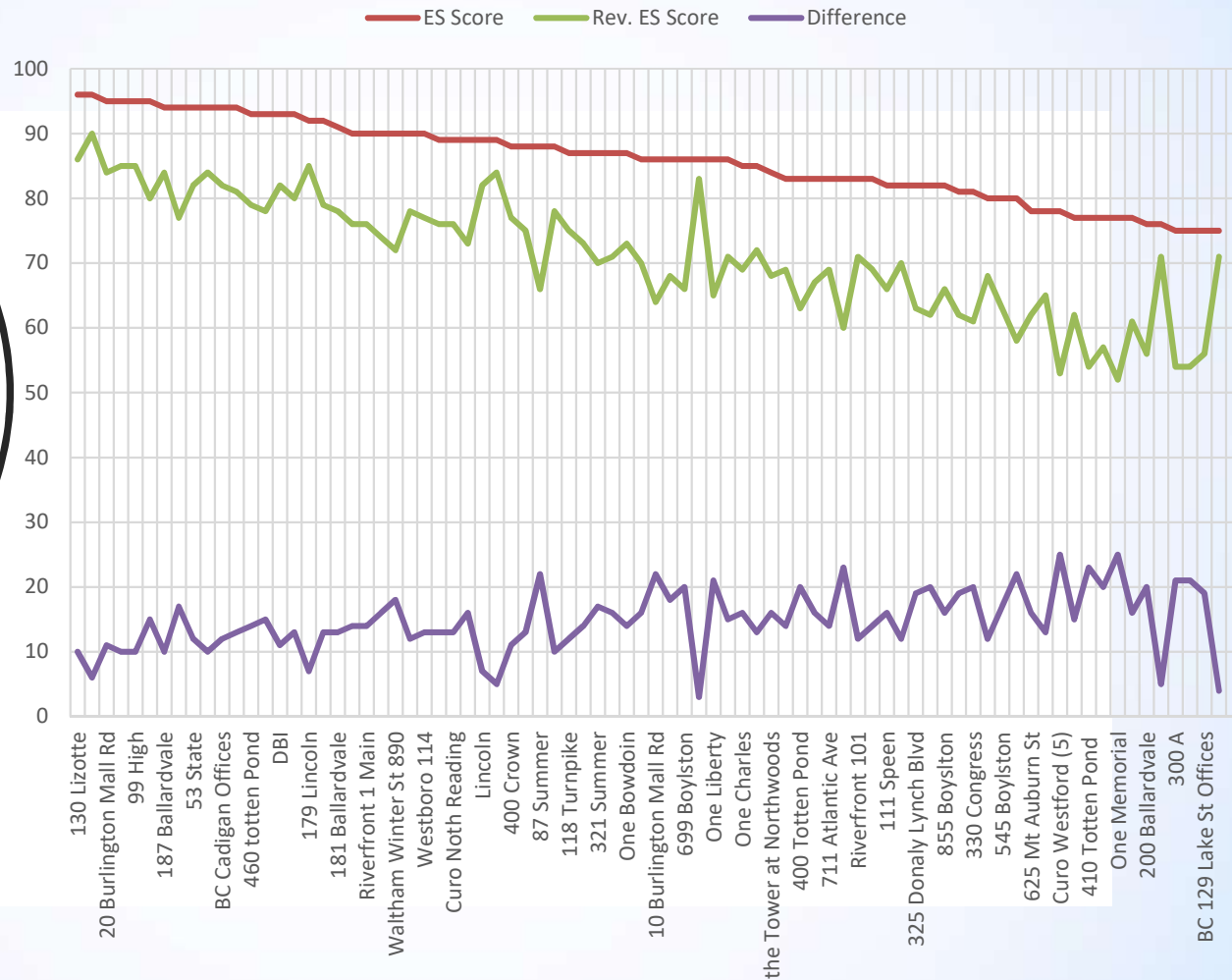
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LOCAL RESULTS

80 EMA Properties
Avg'd 14.8 point
reduction

60% reduction in
AWARD ELIGIBILITY

New versus Old Scores



PM / QC checks might quickly raise your score!

Verify all ENERGY STAR® portfolio manager input parameters for accuracy.

1. Replace default values: ES added a few new metrics and you need to go in and change the defaults for several property types.
2. There is a new selection to accommodate undocumented¹ data centers, so this could be a big help or certainly a bigger help than the current practice of listing undocumented Data Centers as “tel. data / server rooms”. If you have been ignoring Data Centers your Score may soar.
3. Is gross floor area entered properly or does the figure represent net occupied or leased or RSF or NRSF? Correcting will increase score considerably! External dimensions please!
4. Re-verify all other inputs such as # of full time occupants, # of PCs & Laptops
5. Re-verify # of hours per week majority of occupants use the building, incl. Weekends
6. Exclude parking lot lights if separately metered
7. Include cell tower electric as **negative kWh** per ES directions, e.g., Verizon, AT&T, Nextel Sprint and T-Mobile. Install submeters if on your main bill, otherwise don't enter bill.
8. Ensure you have the correct zip code since weather normalizations are based on weather files indexed by Zip Code
9. Tel / Data closets (as opposed to data centers) can be broken out from office and listed at 168 hours per week, 0 occupants, unfortunately you must list each server as 1 PC even though it may consume 3x the power.

¹ A data center is considered undocumented if it lacks an electric kWh submeter measuring UPS output energy or PDU input energy.

New use details in Portfolio Manager

- **K-12 Schools:**

- [“Number of Workers on Main Shift”](#) is now required to calculate the 1-100 score.
- Previously, this was an optional field that was not required to receive a score, and if left blank, a default value was assumed based on each school’s gross floor area.

- **Supermarket:**

- [“Number of Open or Closed Refrigeration/Freezer Units”](#) is now required to calculate the 1-100 score.
- Previously, this was an optional field that was not required to receive a score, and if left blank, a default value of “0” was assumed.

- **Worship Facility:**

- The following Use Details are now required to calculate the 1-100 score:
 - [Gross Floor Area Used for Food Preparation](#). This field was added to all Worship Facilities and the value was defaulted to 0%.
 - [Percent that can be Cooled](#). This field was added to all Worship Facilities and the value was defaulted to 100%.
 - [Percent that can be Heated](#). This field was added to all Worship Facilities and the value was defaulted to 100%.

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Data center energy estimates

Two options for properties with data centers

1. Existing and recommended option

- Measure and enter IT energy
- Industry best practice – Most accurate and complete measure

2. **New option:** Estimated energy use for data centers

- Designed for smaller data centers, within another property type, and where it is not practical to measure IT Energy
- Estimate capped at 10% of the building area
- Buildings with Data Centers that have previously benchmarked without accounting for the Data Center space can now use this option and will likely see an increase in score.

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QC check might quickly raise your score!

HVAC QC Operations checks:

Ensure your ddc controllerd or RTUs has:

1. The correct day of the week
2. The correct time of day
3. Fan schedules that match tenant lease agreements, allowing not too much time for morning warm-up, and that it is accomplished with dampers closed.
4. RTUs and AHUs often missing free cooling (economizer) opportunities, i.e., they are going into or coming out of free cooling too soon due to bad logic or bad sensors. (garbage in = garbage out) Replace bad sensors.
5. DAT reset schedules a least 5 to 7 degrees F
6. Defined heating occupied and unoccupied settings that make sense, go deeper
7. Defined cooling occupied and unoccupied setting that make sense, again, go deeper
8. Are your fan and pumps speeding up and slowing down? If not, time to re-commission

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SEEK CONSULTANTS SPECIALIZING IN MASTER PLANNING

- SCOUTING / SCOPING ENERGY AUDITS
- ASHRAE LEVEL 1 AUDITS
- ASHRAE LEVEL 2 AUDITS
- TECHNOLOGY SPECIFIC AUDITS SUCH AS:

CHP, CO2 DCV, LED Lighting / Daylighting
Solar assisted air-conditioning, New
refrigerants with Oleic acid, air compressor
& steam trap leak surveys

SEEK VENDORS SPECIALIZING IN

- DESIGN BUILD ENERGY SOLUTIONS
- LED TURNKEY SOLUTIONS
- ENERGY SERVICES COMPANIES
- HIGHLY FOCUSED EQUIPMENT VENDORS

HOW WE DOING ON TIME???

New buildings size minimum requirements for ENERGY STAR Score

Property Type	Current Score Minimum	Updated Score Minimum
Bank Branches	1,000 ft ²	1,000 ft ²
Worship Facilities	1,000 ft ²	1,000 ft ²
Offices	5,000 ft ²	1,000 ft ²
Schools	5,000 ft ²	1,000 ft ²
Warehouses	5,000 ft ²	1,000 ft ²
Grocery/Supermarkets	5,000 ft ²	5,000 ft ²
Hotels	5,000 ft ²	5,000 ft ²
Retail/Wholesale Clubs	5,000 ft ²	5,000 ft ²

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New use details in Portfolio Manager

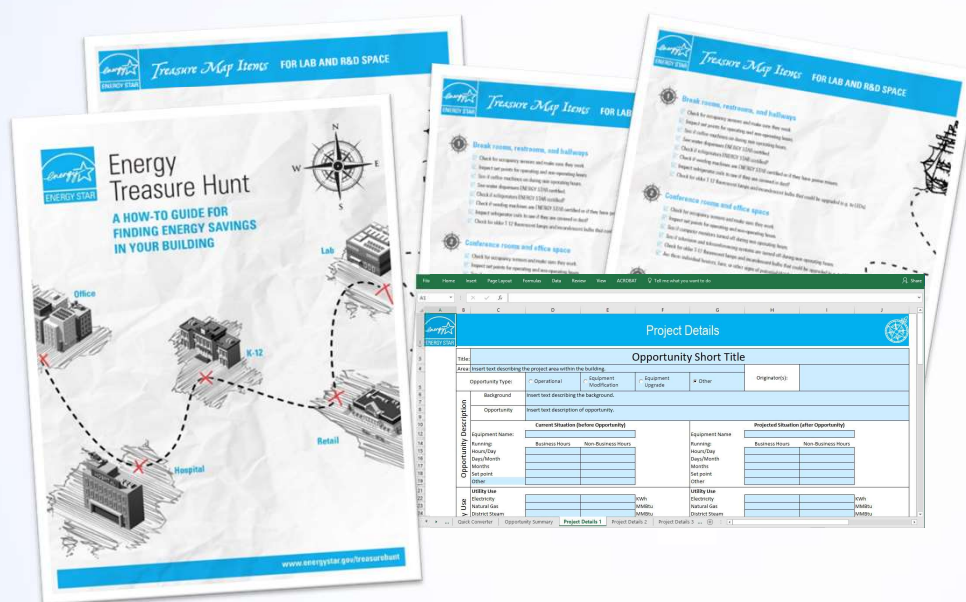
- **Refrigerated Warehouse:**

- The following Use Details are now required to calculate the 1-100 score:
 - Percent Used for Cold Storage. This field was added to all Refrigerated Warehouses and the value was defaulted to 50%.
 - Percent that can be Cooled. This field was added to all Refrigerated Warehouses and the value was defaulted to 0%.
 - Percent that can be Heated. This field was added to all Refrigerated Warehouses and the value was defaulted to 0%.

- **Non-Refrigerated Warehouse & Distribution Center:**

- "Percent Used for Cold Storage" is now required to calculate the 1-100 score.
- This field was added to all Non-Refrigerated Warehouse & Distribution Center and the value was defaulted to 0%.

ENERGY STAR Treasure Hunt Kit



- How-to guide
- Savings calculators
- “Treasure maps” for one-day hunts for:
 - Offices
 - K-12 schools
 - Retail Stores
 - Hospitals
 - Labs

All available now:

www.energystar.gov/TreasureHunt

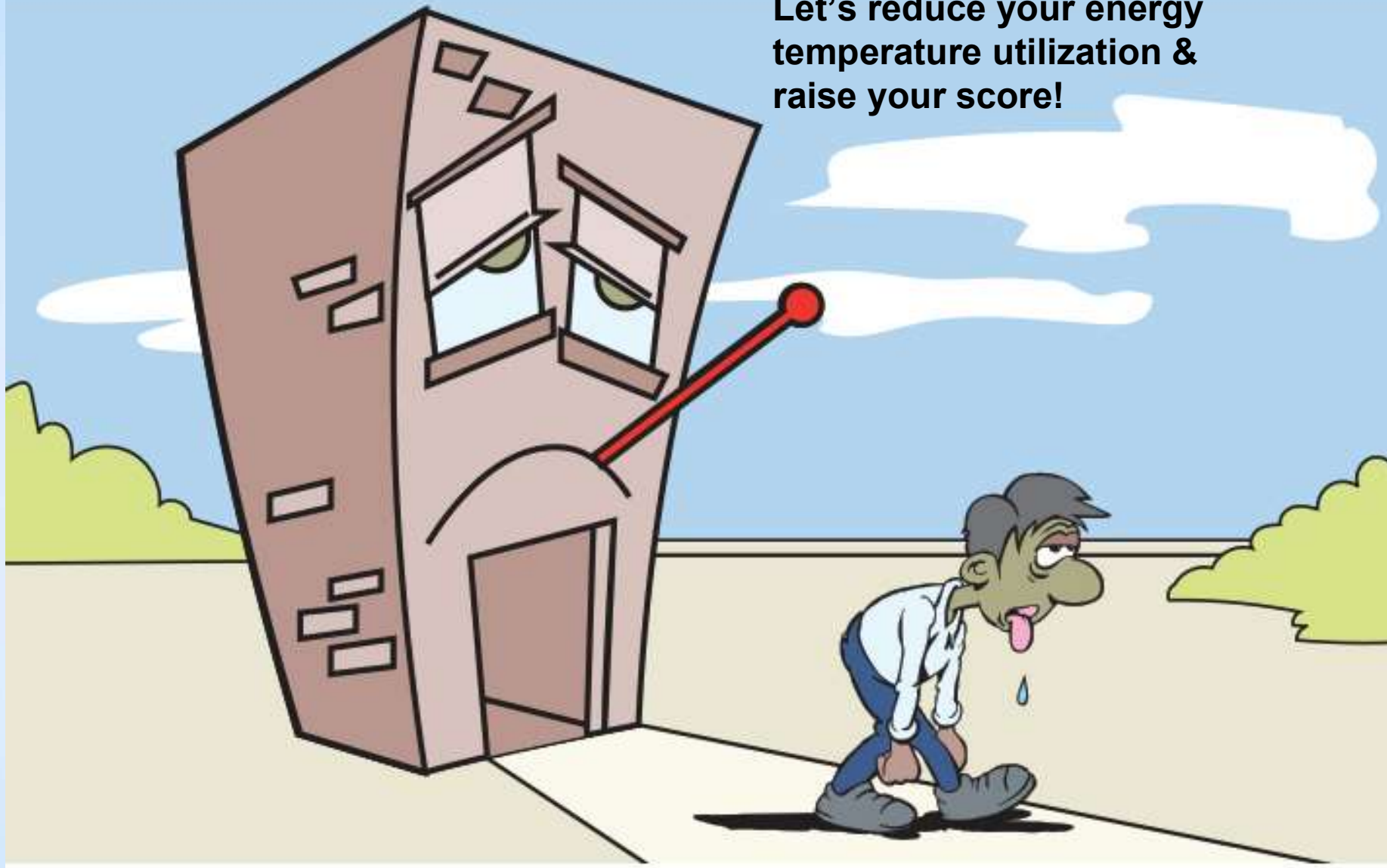
Other metric updates

- **New national electric source factor**

- Source energy traces the heat and electricity requirements of the building back to the raw fuel input
- Changed from from 3.1 to 2.8 translation => reflects contributions of renewables
- Impacted ENERGY STAR scores & all source energy metrics
- Metric changes based on this update alone will be small in magnitude compared to score model updates and will vary depending on a building's fuel-mix ratio.

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**Let's reduce your energy
temperature utilization &
raise your score!**



Common Questions

How do I use the new energy estimate option for Data Centers?

- Utilize these new FAQs:
 - [Data Center Energy Estimates: How do I use them?](#)
 - [Data Center Energy Estimates: When can they be used for certification?](#)
 - [Data Center Energy Estimates: How will they be implemented?](#)

Certification deadlines for the remainder of 2018

- Thursday, November 15, 2018 by 11:59 pm EST
- All applications submitted before this time will be eligible for 2018 certification
- If your application is received after November 15, 2018, it will be put in the queue for 2019 ENERGY STAR certification
- 2019 applications can be submitted after 8/26/18 and will be reviewed in January 2019



BERDO

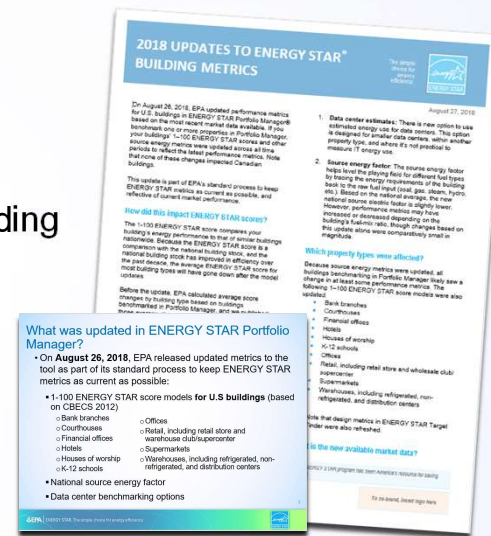
BOSTON ENERGY REPORTING DISCLOSURE ORDINANCE

If you achieve 3 ENERGY STAR Award Labels during the next 5-Year BERDO cycle your property becomes “Exempt” from BERDO requirements such as a 15% energy or GHG reduction, or ASHRAE Level 2 audit, or purchase of green renewable energy etc.

BERDO = Boston Energy Reporting Disclosure Ordinance, and similar ordinances are popping up everywhere like NYC, Phila., DC.

2018 metric update homepage

- Summary of changes
- Links to Frequently Asked Questions
- Updated Technical Reference Guides for each building type's score model
- Link to the Portfolio Manager Help Desk
- Recorded webinars and links for future webinars
- Communications materials
 - ü Co-brandable fact sheet
 - ü Template PPT desk with speakers notes
 - ü Video tutorial about the ENERGY STAR score



www.energystar.gov/scoreupdates

EPA resources to help improve energy performance

- Tap into a variety of tools and resources to improve energy efficiency and increase scores:
 - Guidelines for Energy Management
 - Building Upgrade Manual
 - Cash-Flow Opportunity Calculator
 - ENERGY STAR College Course
 - “Energy Tips for Small Business” Guides
 - ENERGY STAR Action Workbook for Small Business
 - Building Competition Guide, Data Tracker, and Competition Activity Kits

www.energystar.gov/buildings/tools-and-resources



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Improve performance and raise scores with new “Energy Treasure Hunt” resources

- A cost-effective way for buildings to identify and realize savings from improvements in operations and maintenance.
- Treasure Hunts have been popular among industrial facilities for several years, commonly reducing their energy use by 7 – 15%
- Can last 1-2 days and have 1-2 teams of about 5 people.
- October is “Treasure Hunt Month”
 - EPA will be highlighting partners who conduct Energy Treasure Hunts, share their discoveries, and showcase their success.
 - Start planning now so you can schedule your Treasure Hunts for October



Join EPA’s “Energy Treasure Hunt” webinar on Tuesday, September 11, 1:00 pm EDT.
Register at <https://esbuildings.webex.com/>

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Local New England Resources

2024

ENERGY SAVINGS



Questions



www.energystar.gov/BuildingsHelp

EMA-Boston.com