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ENERGY STAR Congregations Energy Performance Rating for Your Worship Facility

Improved Stewardship of Energy, Money and the Environment with ENERGY STAR

Did you know that a building can earn the ENERGY STAR label just like your office equipment can? An ENERGY STAR labeled facility meets strict energy performance standards set by EPA and uses less energy, is less expensive to operate, and causes fewer greenhouse gas emissions than a non-qualified facility. The nation's estimated 370,000 houses of worship spend more than \$3 billion on energy each year—to help counter these costs, ENERGY STAR Congregations helps worship facilities improve their facility performance while reducing energy costs.

If America's houses of worship cut energy use by 10 percent:

- About \$315 million would be saved for congregations' missions and other priorities.
- Nearly 2 billion kWh of electricity would be available without additional cost and pollution.
- About 1 million tons of greenhouse gas emissions would be prevented.

Actual savings of about 30% are typically possible. More than 2,500 users have benchmarked over 90,000 buildings over a decade to save energy, money and reduce greenhouse gas emissions. To qualify for the ENERGY STAR, a building must score in the top 25 percent based on EPA's National Energy Performance Rating System. To determine the performance of a facility, EPA's Portfolio Manager tool compares energy use among other, similar types of facilities on a scale of 1-100; buildings that achieve a score of 75 or higher are eligible for the ENERGY STAR. An ENERGY STAR labeled worship facility typically uses 30% less energy than an average house of worship. The EPA rating system accounts for differences in operating conditions, regional weather data, and other important considerations.

All data must be verified by a licensed Professional Engineer, and the rating also verifies compliance with the standards for indoor air quality and thermal comfort of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). The rating also means that facility lighting standards meet the recommendations of the Illuminating Engineering Society of North America (IESNA).

Developing a National Energy Performance Rating For Religious Worship Facilities

The Environmental Protection Agency has expanded the National Energy Performance Rating system to worship facilities based on the Department of Energy's Energy most 2003 Commercial Buildings Energy Consumption Survey (CBECS). EPA's detailed analysis of the 2003 CBECS data identified significant drivers of energy use in worship facilities. These variables were evaluated and incorporated into a free, online rating model that standardizes energy use in worship facilities allowing objective, "weather-normalized" comparisons across different building types and locations nationwide, or by state, city or organization.

More importantly, the rating helps individual managers to accurately assess the energy performance of their buildings; make more informed budgetary, investment and management decisions. Ultimately enabling them to calculate and communicate their environmental stewardship achievements to congregational clergy and members, as well as the larger community.



Free Information Webinars

Benchmarking your House of Worship

WHEN: Monthly; large groups upon request.

WHERE: Online registration at:
<https://energystar.webex.com/training>

WHO SHOULD ATTEND?
Persons responsible for facility energy decisions.

OBJECTIVE:
To learn how Portfolio Manager functions and can be used by worship facility managers to track energy performance, costs and savings from improvements in operation, maintenance and equipment.

DESCRIPTION:
This training is to provide users a step-by-step guide to using Portfolio Manager to benchmark current energy use; track savings; share their data with master accounts; enter upgrades; and understand the outputs shown on the Statement of Energy Performance.

Visit www.energystar.gov/congregations for more information on ENERGY STAR resources and recognition.

Frequently Asked Questions

1. To what types of facilities does the new worship facility model apply?

This model applies to buildings that are used as places of worship. This includes churches, temples, mosques, synagogues, meeting houses, or any other buildings that primarily function as a house of worship. The rating applies to buildings that function as the primary place of worship and not to other buildings that may be associated with a religious organization, such as living quarters, schools, or buildings used primarily for other community activities. The rating applies to facilities that have 4,000 seats or fewer.

2. Can my worship facility earn the ENERGY STAR Label?

Yes. This model of Portfolio Manager now allows worship facilities to earn EPA energy performance ratings. Owners and operators of such facilities are encouraged to enter the as-billed energy consumption for a 12-month period along with data for key operating characteristics into Portfolio Manager in order to receive the initial 1-100 rating. To qualify for the ENERGY STAR label, a facility must achieve a rating of 75 or higher. Please see the [Criteria for Rating Building Energy Performance](#) to see additional requirements to apply for the ENERGY STAR.

3. My worship area has high, vaulted ceilings. How does the model account for this?

The model for worship facilities is based on an analysis of the Department of Energy's Commercial Building Energy Consumption Survey (CBECS) which includes a national sample of worship facilities. Most such facilities have some areas with high or vaulted ceilings. Therefore, by using a nationally representative dataset, the tool is able to account for a variety of common operating and physical characteristics at these facilities and incorporate these considerations into the development of the model. Worship facilities are compared with other worship facilities, so the population of comparison also has high or vaulted ceilings and no adjustment is needed.

4. My worship facility has equipment that has very energy intensive audio visual equipment. How does the model account for the energy consumption of this equipment?

The worship facility model includes a national sample of similar facilities. The model accounts for a variety of common operating and physical characteristics. Worship facilities typically have some type of audiovisual equipment and this is accounted for in the model. For those facilities with extensive audio visual capabilities (e.g. for internet/television broadcasting) their energy use per square foot will be higher than those without these types of systems.

5. I have been using Portfolio Manager to benchmark energy and water consumption at my facility prior to the release of the worship facility model. How can I transfer my data into the new model without losing all of my information?

When the new worship facility model "went live" online, all users who had previously benchmarked energy and water consumption for their facilities in Portfolio Manager for a 12-month period were automatically converted into the new ratable category. The new automatic rating will be based on information that users have already entered (e.g. square foot and hours of operation), in addition to standard default values for new inputs that are required for a worship rating (e.g. seating capacity). You will have to enter your Portfolio

Manager account and replace the default values with accurate numbers for your facility to receive the most accurate rating.

6. How do I determine what the seating capacity is for my worship?

The seating capacity should reflect the maximum total seating allowed by the fire/building code in the main worship area(s). If there are multiple seating configurations, add them up. This number should reflect permanent seating capacity as the facility is typically used. Note that if there is no fixed seating at this type of worship facility, this number should reflect the number of worshippers than can be accommodated in the main worship area(s). A pew generally provides "one seat" per 18-24 inches in length.

7. Why doesn't the tool ask about my heating and air conditioning system?

The tool accounts for your heating and cooling demand based on the actual heating and cooling degree days related to your zip code. There is no question about this type of equipment since it is assumed that all houses of worship have heating and cooling systems.

8. What does the rating tool do?

The rating does:

- Evaluate billed energy use relative to building operations
- Normalize for operational characteristics (e.g., size, seating capacity, hours of operation, climate)
- Depend on a statistically representative sample of the US commercial building population

The rating does not:

- Attempt to sum the energy use of each piece of equipment
- Normalize for technology choices or market conditions (e.g., type of lighting, energy price)
- Explain why a building operates as it does (i.e. operation and maintenance, occupant behavior and/or equipment efficiency)

9. Why should I use Portfolio Manager for my house of worship?

The tool produces a simple easy to interpret 1 to 100 rating for your building. It is an analytical tool based on unbiased statistical analysis of a national peer sample. It also produces emissions estimates based on your utility. The tool is updated periodically and draws on the extensive research of several government agencies such as; EPA, DOE, and NOAA.

The Portfolio Manager tool is quickly becoming the "National standard" or evaluating building energy efficiency with over 90,000 buildings and 2,500 users using the tool to date. Over 19% of all US commercial facilities have been benchmarked using Portfolio Manager

10. Where can I find out more about the tool?

There is a benchmarking starter kit and additional information on the estimation process at www.energystar.gov/benchmark. For additional information on the ENERGY STAR for Congregations program please visit: www.energystar.gov/congregations.