



Disclosing the ENERGY STAR Score For Low Embodied Carbon Programs

The Inflation Reduction Act provides \$4.15 billion to the Federal Highways Administration and the General Services Administration for low-embodied-carbon materials. To sell materials to these agencies when this \$4.15 billion is used suppliers must specify the ENERGY STAR Energy Performance Score of the relevant plants in the material's supply chain.¹ What is this score and why is it needed?

The ENERGY STAR Score and GWP Measure Different Things

The ENERGY STAR Energy Performance Score is a **facility metric**. It represents manufacturing plant efficiency and assesses how a particular plant compares to similar plants in terms of energy performance.

The GWP (Global Warming Potential)², as reported in an Environmental Product Declaration, is a **product metric**. Product design, material sourcing, transportation, and manufacturing decisions all contribute to a product's GWP. While GWP is based in part on a plant's energy consumption, it does not reflect how efficiently the plant uses that energy.

Why Are Two Metrics Needed?

The ENERGY STAR Score and GWP provide related, but different information, and do not always align. Both are important for making informed lower carbon choices.



- A separate, complementary metric to the GWP
- Reflects how well a plant has optimized operations to reduce embodied carbon.

¹ At the time of publication Energy Performance Indicators, which shows ENERGY STAR Energy Performance Scores, are available for integrated steel mills, flat glass, and cement plants.

² The term 'GWP' is used in EPDs, PCRs, and Buy Clean policies for construction products as an impact category to report on embodied GHG emissions (per ISO 21930:2017, Section 7.3, Table 5). In the ISO context 'GWP' is conveyed in CO₂e/unit of product/material to denote the product level GHG emission intensities. We note this usage is inconsistent with how GWP is defined by the Intergovernmental Panel on Climate Change (IPCC) and in other GHG accounting efforts, including national reporting by Parties to the Paris Agreement. Per IPCC, GWP is an index measuring the radiative forcing following an emission of a unit mass of a given substance, accumulated over a chosen time horizon, relative to that of the reference substance, carbon dioxide (CO₂).

³ Those products are covered by an ENERGY STAR Energy Performance Indicator.

⁴ The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050 (November 2021). <https://www.whitehouse.gov/wp-content/uploads/2021/10/us-long-term-strategy.pdf>

Product design influences the GWP of a product. But product design does not always reduce the carbon emissions of a manufacturing plant. For example, an asphalt mix or ready-mix concrete plant may be inefficient but manufacture products with low GWPs if their mixes have a high percentage of reclaimed asphalt pavement (RAP) or supplemental cementitious materials (SCM). The high RAP and SCM content can counterbalance the high energy use of an inefficient plant when GWP is calculated.

Similarly, a plant can operate very inefficiently yet its products can have a relatively low GWP if the plant uses renewable energy. Nevertheless, if more energy was consumed to make the product than necessary, then energy was wasted.

How to Use the ENERGY STAR Score

ENERGY STAR Energy Performance Scores measure how energy efficiently a manufacturing plant operates when compared to similar plants using a 1-100 scale. A score of 50 reflects average performance, 1 reflects lowest performance and 100 reflects highest performance.

For Manufacturers

Your plants' scores provide valuable information about how efficiently the plants use energy to produce a unit of product. The scores are an easy-to-understand metric that can help you develop and gain management support for your energy management strategy. They allow you to readily identify the poorer performers—which often represent the best opportunities for investment and environmental improvement—and recognize the top performers. Visit www.energystar.gov/assistanzenetworks for assistance.

For Procurement Professionals and Material Producers³

A manufacturer who can provide an ENERGY STAR Energy Performance Score is one whose company is measuring the energy efficiency of its plants. Use the ENERGY STAR Score alongside the GWP to evaluate the potential for your suppliers to improve performance. Encourage them to focus on improving the energy efficiency of their operations and reducing the embodied carbon of their products. Refer them to ENERGY STAR for assistance.

Why Energy Efficiency Matters

Efficient use of energy in manufacturing is critical to decarbonization. A continued focus on efficiency enables development of the renewable energy resources needed to meet demand and an earlier transition to a carbon-free electricity grid.⁴ Energy efficiency reduces grid demand, can lower peak load, and reduces infrastructure costs. It also reduces plants' on-site fuel use and emissions through reduced combustion.

The ENERGY STAR Energy Performance Score provides insight into how the plant is contributing to sector wide decarbonization through its energy performance.

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