



EPA Statement on the Use of Net Energy Metrics in Building Performance Standards

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What Is a Net Energy Metric?

A net energy metric subtracts renewable energy from the total energy used to operate the building. For example, a 'Net Site EUI' metric could subtract (or 'net out') the energy generated by onsite solar panels from the measured total energy use of the building when assessing its performance. Some jurisdictions exploring Building Performance Standards (BPS)¹ are considering using a net energy metric to incentivize the development and use of renewable energy.

EPA Recommends against Use of Net Energy Metrics in BPS

EPA has taken a multi-step approach to developing guidance on BPS metrics, first issuing a white paper that analyzes possible BPS metrics, then convening policymakers and industry in a 2-day workshop to discuss BPS metrics, and finally publishing recommendations on BPS metrics and normalization methods. EPA's white paper describes several principles for selecting a BPS metric, and during the workshop stakeholders reached

consensus that -- above all else -- metrics used in BPS should be simple, send clear signals to building owners, and drive energy efficiency. EPA developed its metric and normalization recommendations to align with these priorities and principles.² The use of net energy metrics runs counter to them.

Net energy metrics do not support stakeholder priorities of keeping things simple and sending a clear signal as they obscure the amount of energy buildings use, resulting in a confusing and unclear signal to building owners. Net energy metrics also lack a standardized definition, with each jurisdiction making unique decisions concerning the inclusion and treatment of onsite renewables, offsite renewables, REC ownership, etc. Some net metric proposals, for example, subtract renewable energy generated but not used onsite (i.e., exported) from the building's total energy use; EPA feels that exported energy should never be factored into a building's energy consumption. Moreover, net energy metrics are not available in ENERGY STAR Portfolio Manager, the tool used by every benchmarking and BPS law to facilitate compliance, and adding them would be difficult given the lack of a standardized definition.

In contrast, EPA's recommended primary BPS metric of site EUI³ has a standardized definition, represents a clear and simple measure of performance that is easy for building owners to interpret and act upon, and is available in Portfolio Manager. It documents all the energy used to run the building, including the onsite renewables consumed. Understanding the complete site EUI of each building provides policymakers and building owners with an "apples to apples" comparison of the energy used to run the covered buildings and provides external stakeholders with a clear and simple measure of the buildings' energy performance.

Net Energy Metrics Create Risk for Achieving BPS Goals

EPA believes that deploying net energy metrics in BPS may compromise the ability of the policy to drive efficient decarbonization of buildings in an equitable manner. Net energy metrics could allow building owners to bypass energy efficiency and still comply with a BPS. For example, a very inefficient building with a large roof space could install enough solar panels (and/or purchase enough offsite green power) to comply with a net metric, while still being highly inefficient and wasting large amounts of energy. This is problematic because virtually all state and local plans to reduce emissions rely heavily on the building stock achieving significant improvements in efficiency, as well as electrifying and moving to the use of renewable energy. Bypassing efficiency would amplify the already momentous need for new clean electric supply and new electric infrastructure to meet demand in a future where buildings and transportation systems are increasingly electric, causing grid strain and increasing costs for all ratepayers.⁴

The use of net metrics also creates regulatory fairness and equity concerns. A net energy metric that allows credit only for onsite renewable energy would be unfair to buildings that do not have the opportunity to generate renewable energy onsite due to their design, location, capital resource constraints, or other factors, thereby providing a compliance advantage to certain buildings. In addition, a net energy metric (whether it allows credit for onsite and/or offsite green power) could result in building owners investing in renewable energy instead of improving the quality of the building as an asset or for its occupants.

Alternatives to Net Energy Metrics

EPA supports incentivizing the development and use of renewable energy in addition to driving energy efficiency in buildings. As described above, however, these objectives should not be combined in a net energy metric. Instead, EPA recommends first and foremost exploring targeted policy and program models outside of a BPS (such as Renewable Portfolio Standards, financial and policy incentives, and technical assistance) to drive increased use of renewable energy. If, however, a jurisdiction concludes that BPS is the best means for increasing the development and use of renewable energy, EPA recommends the use of renewable energy-specific incentives in addition to a site EUI metric to drive efficiency, optionally in combination with a direct emissions metric or fossil fuel phaseout schedule to drive electrification.

¹Building Performance Standards (BPS) are laws that require existing commercial and multifamily buildings to meet certain performance levels, typically for energy use or greenhouse gas emissions (GHGs). EPA offers a variety of technical assistance to state and local governments on BPS. In early 2022, EPA published recommendations on BPS metrics and normalization methods.

²Net metrics violate the principles of "Employ simple metrics to send clear signals", "Make sure metrics are available", and "Less is more". Depending on how they are defined, net metrics could also violate many of the other principles including: "Focus on actions directly within the control of building

owners" and "Consider equity". More information on these guiding principles for BPS metrics can be found in EPA's White Paper: Understanding and Choosing Metrics for Building Performance Standards

³EPA defines Site EUI as the total annual energy consumed on-site at a property—regardless of the source—divided by the property square foot. Renewable energy consumed on-site is part of this total.

⁴Additionally, building owners would not benefit from the operational and cost savings that efficiency can generate, including the rightsizing of any new equipment.