

Pacific Northwest

Policy to Practice: Supporting Development and Implementation of Building Performance Standards (BPS)

BPS DIRECT TECHNICAL ASSISTANCE

Last 5 digits of project number | 25330

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WHAT ARE BPS?

- Building Performance Standards (BPS) are outcome-based policies for existing buildings that regulate energy use or emissions.
- Buildings sector contributed 35% of current total carbon emissions in the U.S. in 2021. The number of buildings will continue to increase with future new construction growth.
- BPS are a critical policy tool for reducing energy use and emissions in existing buildings.
- Goals from the DOE National Blueprint for the Buildings Sector:
- BPS adopted by jurisdictions representing >25% of people in the U.S. by 2035.
- BPS adopted by jurisdictions representing >50% of people in the U.S. by 2050.

Jurisdiction Cumulative Energy Savings, BPS Scenario

Cumulative energy savings impact of a BPS policy over 35 years. Blue bars show the energy savings in buildings that exist today, while orange bars

show the energy savings in buildings that will be constructed in the future and become subject to the BPS.

METHODS

A cross-organizational team works directly with jurisdictions to:

- Help jurisdictions understand and manage data on building stock: size, location, property use types (office, school, hospital, etc.).
- Help jurisdictions understand and manage data on building performance: building energy use and emissions.
- Develop methodologies and analysis to guide policy development.
- Facilitate connections across jurisdictions to share information and discuss BPS topics.
- · Share information on program implementation and policy design.

KEY PRODUCTS

- Impact analysis of energy savings and emissions savings. PNNL impact analysis combines the existing building stock and forecasts for new construction buildings to assess BPS policy impacts.
- First cost analysis for building energy retrofits in existing buildings. PNNL collected data from the Audit Template tool and from published case studies on existing building retrofit costs.
- Data analyses to make policies more equitable by investigating the need for target adjustments. PNNL compared energy use and occupant density in subsidized versus non-subsidized multifamily housing to understand if BPS targets should be adjusted for equity.
- Policy research on BPS policy approaches. PNNL shares information with jurisdictions to help with their policy development.
- Demonstrations of DOE software tools used for BPS:
- SEED (Standard Energy Efficiency Data)
- Audit Template
- UBID (Unique Building Identifier)



Energy code performance compared with BPS targets. Energy modeling analysis of new construction building performance for many prototype building designs that comply with the prescriptive energy code, compared to a BPS target. As new building are constructed, jurisdictions want to understand if code-compliant new construction buildings are equipped to meet BPS targets.

IMPACT

- Our team helps jurisdictions nationally to improve performance of existing buildings and meet their climate and clean energy goals.
- The team promoted DOE's BPS adoption goals by directly engaging with more than 25 jurisdictions in FY24.
- · Jurisdictions use our deliverables to:
 - · Engage and communicate with stakeholders
 - · Communicate with decision makers (legislatures)
 - Understand policy implications
 - Inform policy design



Status of BPS adoption nationally as of April 2024. Sixteen jurisdictions nationally have passed BPS legislation. Forty-six jurisdictions have committed to implement BPS, joining the National BPS Coalition. (nationalboscoalition.org)



First cost and energy savings of existing building retrofits. Data is from PNNL's Audit Template tool. The retrofit costs are adjusted for inflation and based on the location of the project. The \$/SF costs are plotted based on the retrofit energy savings, expressed as a percentage of the pre-retrofit whole building EUI (Energy Use Intensity).



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WEBSITE | https://www.energycodes.gov/BPS