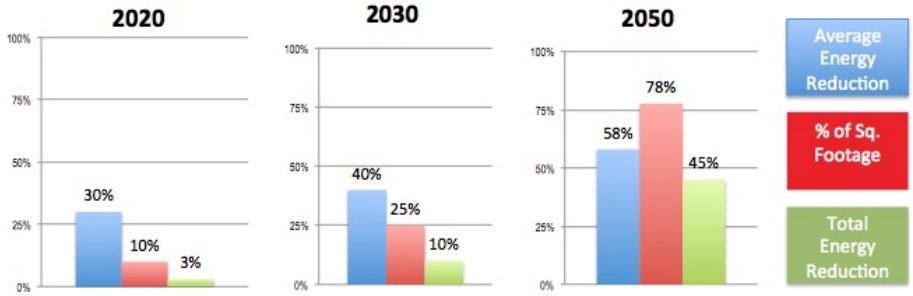
Emerald Cities SEATTLE

Energy Efficiency Policies to Achieve Seattle's Climate Reduction Goals

Background

As concern over climate change rises globally, local municipalities have begun designing and implementing emission reduction plans ahead of the federal government. The City of Seattle has been a leader of local governments taking action to abate climate change and, in 2013, launched the Climate Action Plan (CAP), which is a continuation of the original 2008 plan. This plan provides a vision and implementation strategy for the city to become carbon neutral by 2050. The CAP focuses on three areas: transportation + land use, building energy and waste. As a visionary document, the CAP has a number of areas in which strategy for meeting these goals has not yet been articulated. This analysis will focus on a key component of the CAP: reducing energy use in commercial buildings by 10% by 2030 and further reduction of 45% by 2050 using 2008 baselines.



At present, the city is not on track to meet its goals; Seattle is projected to reduce overall commercial building energy use by only 6% by 2030. The current state of affairs is such that the gap between projected reductions and targets in 2030 will grow increasingly large as Seattle moves towards the 2050 goals. This is due to the fact that goal achievement requires large capital investments and voluntary action by an increasingly large percentage of Seattle building owners.

Taking Stock: Seattle's Built Environment

Reducing carbon emissions in the built environment is a crucial component of mitigating greenhouse gas (GHG) emissions as a whole. In Seattle, the built environment is responsible for more than 20% of GHG emissions, and reductions in existing buildings is crucial to overall success; the existing building stock accounts for over half of the structures that are expected to be in use by 2050. Although new construction must comply with increasingly stringent energy performance codes, older structures were built when energy was less expensive, environmental protection was not taken into consideration and buildings were not subject to energy codes. In Seattle, approximately 30% of buildings were built before the adoption of first Washington State Energy code in 1980.

Although the City of Seattle is fortunate to have a carbon neutral electricity supplier, Seattle City Light, buildings still use oil or natural gas for furnaces and water heaters, which lead to GHG emissions. And Seattle City Light's carbon neutral hydropower is limited in supply. Electric energy use reduction is necessary to allow for population growth and to meet CAP goals that call for transitioning much of the transportation system to electricity. It is for these reasons that reducing energy use in existing structures is a crucial component of the CAP.

To date, the approach to energy efficiency in the built environment has been largely informed by economic theory. Energy-efficiency is a low-risk investment with an average return on investment (ROI) of 20%, and therefore its adoption in the market only requires sufficient access to information by all parties – at which point, as rational economic actors, building owners will implement financially sound, cost-effective improvements to their structures. However, many owners and property managers have a short-term timeline when analyzing potential building investments, while comprehensive retrofits have a long-term return on investment. And the return on an investment in energy efficiency does not measure up to other investment returns in the hot Seattle real estate market. As seen below, most owners have failed to invest in energy efficiency; and it is becoming clear that any market solution will be too slow to meet Seattle's Climate Action Plan and forestall climate change. (EUI = Energy Use Intensity, measured in thousand BTU/square foot.)

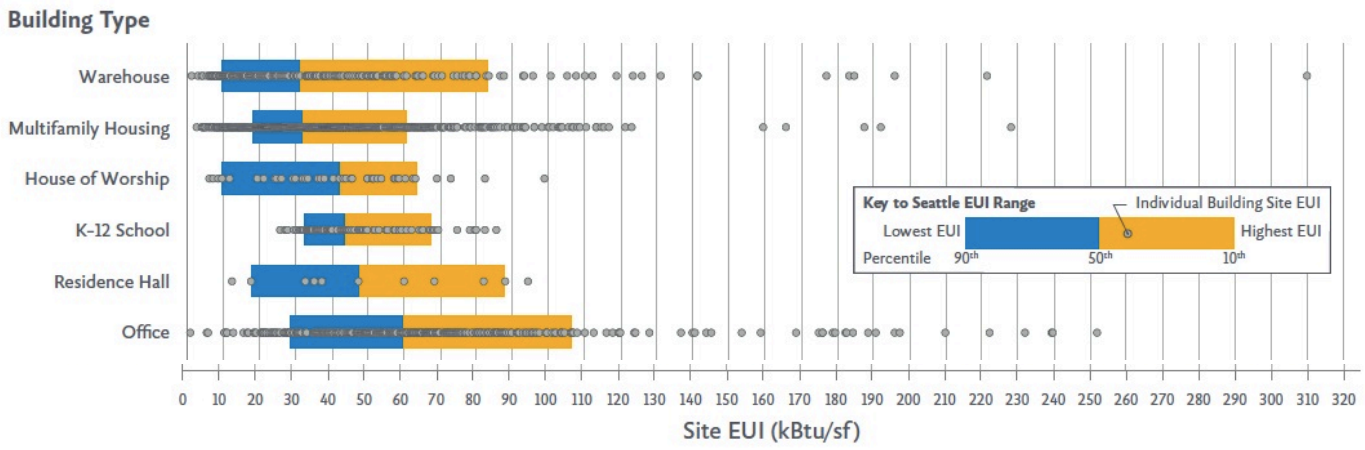


Figure 11: **2012 EUI Performance Range and Distributions by Building Type**

The Emerald Plan

1. Create a **Seattle Energy Score** that is an absolute measure used to assess the progress of individual buildings, sectors and the entire city towards our Climate Action Plan goals for commercial buildings.

2. Establish **Seattle Energy Score Targets** at set points in time that align with the Climate Action Plan, with enforcement mechanisms as necessary.

3. Support an enhanced **Seattle Energy Code** for existing buildings to drive upgrades of building shell, systems and lighting through the normal building ownership cycle and to align with Seattle Energy Score performance targets.

4. Require **disclosure of building energy use at time of lease,** including Seattle Energy Score. Include information about Energy Aligned Lease Clauses for landlord and tenant to benefit from efficiency improvements.

5. Create an **Efficiency Support Center** that is a clearinghouse for benchmarking, disclosure, energy-aligned leases, best practices in upgrades and incentives.

6. Provide **off-balance sheet financing** options with on bill re-payment of financing through Seattle City Light or Seattle Public Utilities.

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