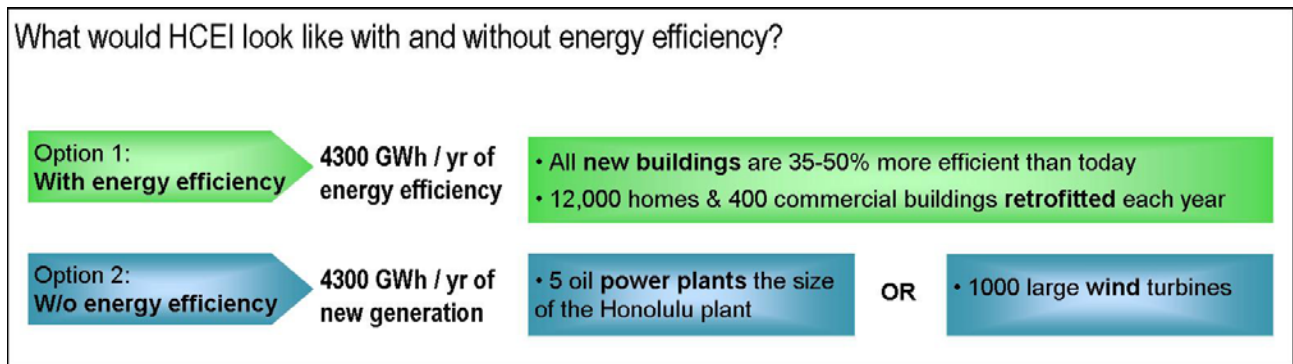


# Hawaii Clean Energy Initiative (HCEI) Policy Brief

## Energy Efficiency Portfolio Standard

### Why does Hawaii need an Energy Efficiency Portfolio Standard (EEPS)?

The goal of HCEI is to reach 70% clean energy by 2030 in the electricity and transportation sectors. In the electricity sector, HCEI will meet the 70% goal through instituting very aggressive energy efficiency (EE) programs in addition to supporting renewable energy generation. Implementing EE will reduce overall energy demand in 2030, which reduces the amount of electricity generation the state will need to build. This keeps costs down, reduces transmission needs, and enables consumers to save money on their energy bills.



Implementing energy efficiency at the level proposed in the EEPS would save 6 million barrels of oil per year by 2030, which is more than 10% of the oil that Hawaii currently imports every year.

Separating energy efficiency and renewable energy into different regulatory standards (EEPS and Renewable Portfolio Standard, respectively) makes sense for Hawaii for a number of reasons:

1. Counting EE requires different tools than counting energy generated (e.g., household surveys, appliance purchase data)
2. The investor-owned utilities are no longer responsible for EE in Hawaii, so separating the standards also distinguishes the entity that is responsible for compliance
3. Providing regulatory certainty and specificity enables responsible entities to plan toward targets

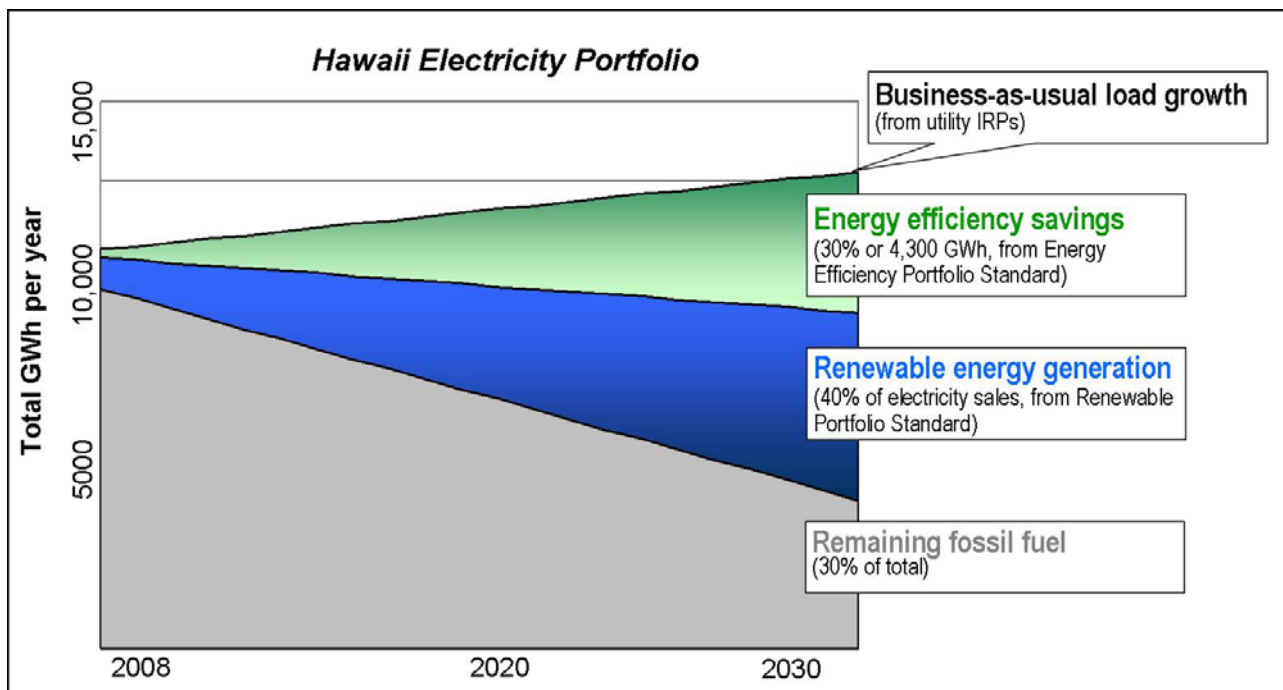
### How was the target of 4,300 Gigawatt hours (GWh) established?

HCEI analysis shows that Hawaii has the potential to achieve nearly 500 megawatts (MW) of energy efficiency measures in the next 20 years. This amounts to approximately 30% of forecasted demand.

500 MW of energy efficiency corresponds to 4,300 GWh of energy used in the year 2030 (see box). This calculation is an average and does not consider whether energy is used on- or off-peak. Achieving this potential will require very significant investment and

**500 MW corresponds to 4,300 GWh of energy per year**  
 A 500 MW power plant operating 8,760 hours per year at full capacity will produce approximately 4,300 GWh of electricity. Conversely, removing 500 MW of Hawaii's load through energy efficiency will save about 4,300 GWh of electricity in the year 2030.

commitment by the state, private industry, and residents. Codes, standards, efficiency programs and incentives, and public buildings will all play a role in Hawaii's ability to meet the 4,300 GWh target.



Energy efficiency is difficult to measure because it requires verifying a reduction in load. HCEI decided to use a GWh target because it will be easier to track and measure compared to a percent target, which would change as load forecasts change. The energy efficiency analysis is based on the load forecasts of the utilities' IRP-3 (Analysis was developed before IRP-4 was released and approved), and these load forecasts will change over time with fluctuating prices and economic conditions. Rather than revise the state's efficiency target every time the load forecast changed as would be the case with a percent target, HCEI elected to use a GWh target determined by the analysis. Expressing the target in terms of energy rather than funding also ensures that the policy is results-based, not spending-based.

To calculate the energy efficiency potential in each year, HCEI used a combination of Hawaii EE studies, utility planning, and Department of Energy goals and models. Key assumptions are that homes and businesses will be 30-40% more efficient than conventional buildings starting in 2010 and will be 50% more efficient by 2015. A significant number of homes and commercial buildings will need to be retrofitted every year. After 2015 all new buildings are assumed to plateau near 50% efficiency, because all of the new buildings are assumed to be Net Zero Energy at this point (the remaining 50% of energy needs for each building would be met by solar panels or other distributed generation). NREL projects that most new buildings in Hawaii can be constructed cost-effectively Net Zero Energy by 2030.

### How does Hawaii's proposed EEPS compare to other places?

If the state adopts a 4,300 GWh (30% equivalent) savings target, Hawaii would establish itself as a leader at the forefront of binding targets for energy efficiency. This target is aggressive but is in the range of potential savings that other states—and even the federal government—are contemplating.

- 23 states have or are considering Energy Efficiency Portfolio Standards (also called Energy Efficiency Resource Standards) either as part of the RPS or as a separate standard
- Maryland has a goal to reduce energy demand 29% by 2025 using energy efficiency
- In February 2009, Representative Markey of Massachusetts introduced a bill for a federal efficiency standard of 15% electricity savings by 2020