

5.2 Buildings & Energy Sector

Strategy B1. Reduce energy use in existing residential buildings.

Residential energy use currently is the largest source of greenhouse gas emissions in our region. While newer buildings may be constructed to meet greener standards, the majority of homes in the Thurston region were built before 1988, with one in five dating back 50 or more years. Looking at our emission reduction targets, more than two-thirds of the housing units that will exist in 2050 already exist today, so retrofitting existing buildings is a key strategy. While energy efficiency improvements can pay for themselves over time through reduced heating and cooling expenses, the upfront cost may be a barrier for many. More than a third of homes in the Thurston region are rented, which means their occupants may have less control over choosing appliances or making building improvements that increase efficiency. The actions described below will support a transition toward higher efficiency homes by providing more information to consumers about home energy use and incentives for efficiency upgrades.

ASSESSED ACTIONS		Impact GHG	Impact OTHER	
B1.1	residential energy performance ratings. Require energy performance ratings and disclosures for homes at time of sale, lease, or rent so that owners, tenants, and prospective buyers are informed before making purchasing or rental decisions			
B1.2	residential energy audits. Develop and adopt policies that require residential properties to undertake an energy audit at the time of sale or during a substantial remodel. Work with financial institutions to develop mortgage products that incorporate audited energy efficiency recommendations.			
B1.4	rental housing energy efficiency incentives. Provide incentives such as property tax breaks for landlords who install energy conservation measures in rental housing.			
B1.5	property tax credit. Create incentives such as a property tax credit for property owners who participate in energy efficiency.			
B1.6	rental housing energy efficiency baseline. Require rental units to meet baseline levels of energy efficiency and make more stringent over time.			

Potential Impact:



Greenhouse Gas Reduction Potential



Ecosystem Health



Social Equity



Economic Benefit



Adaptation Value



Other Regional Goal



Youth Priority



Strategy B2. Reduce energy use in existing commercial/industrial buildings.

Energy used to power businesses contributes to more than a quarter of our local carbon footprint (26 percent). Operations range from small retail and professional offices to sprawling warehouses. Improving efficiency across this sector will require approaches that target these different scales. The Thurston region currently has more than 42 million square feet of commercial and industrial area, but it is distributed unevenly. The greatest proportion of commercial building area is in the city of Olympia, while industrial space is concentrated in Lacey and Tumwater. As home to the headquarters of many state agencies, the Thurston region’s stock of office space includes a large share of public sector buildings—these organizations can show leadership by increasing efficiency and reduce long-term energy costs to taxpayers. While it is hard to predict our future needs for work space, commercial and industrial buildings must be adapted over the coming decades to help reduce greenhouse gas emissions and accommodate the more than 50,000 new jobs anticipated to be added in our region between now and 2045.

ASSESSED ACTIONS		Impact GHG	Impact OTHER						
B2.1	commercial energy benchmarking & disclosure. Require energy performance ratings for commercial structures be disclosed so that owners, tenants, and prospective buyers are informed before making purchasing or rental decisions.		<table border="1"> <tr><td>*</td><td>A</td></tr> <tr><td>E</td><td>O</td></tr> <tr><td>\$</td><td>Y</td></tr> </table>	*	A	E	O	\$	Y
*	A								
E	O								
\$	Y								
B2.3	LED lighting. Install LED lighting in public-sector buildings and infrastructure (e.g., streetlights, traffic signals).		<table border="1"> <tr><td>*</td><td>A</td></tr> <tr><td>E</td><td>O</td></tr> <tr><td>\$</td><td>Y</td></tr> </table>	*	A	E	O	\$	Y
*	A								
E	O								
\$	Y								
B2.6	cool roofs. Create an incentive program for the installation of reflective roofs on commercial buildings to reduce building energy consumption and the urban heat island effect.		<table border="1"> <tr><td>*</td><td>A</td></tr> <tr><td>E</td><td>O</td></tr> <tr><td>\$</td><td>Y</td></tr> </table>	*	A	E	O	\$	Y
*	A								
E	O								
\$	Y								
B2.8	performance standard. Set energy efficiency performance standards for commercial buildings with gross floor areas smaller than 50,000 square feet.		<table border="1"> <tr><td>*</td><td>A</td></tr> <tr><td>E</td><td>O</td></tr> <tr><td>\$</td><td>Y</td></tr> </table>	*	A	E	O	\$	Y
*	A								
E	O								
\$	Y								

Potential Impact: Greenhouse Gas Reduction Potential Ecosystem Health Social Equity Economic Benefit Adaptation Value Other Regional Goal Youth Priority

What We Heard...

"The greenest development is updating and fixing old neighborhoods."

Public comment at Thurston County Fair



Strategy B3. Reduce energy use across building types.

Increasing efficiency in our built environment will require builders and contractors to learn and adapt to new materials and practices. The following actions will help support that transition by providing technical assistance to share what works and celebrating development that takes on this challenge.

ASSESSED ACTIONS		Impact GHG	Impact OTHER
B3.1	energy education. Provide educational resources and technical assistance to industry professionals, building owners and managers on all aspects of energy efficient building design, retrofits, and operations for new and existing buildings.		
B3.4	exemplary buildings. Partner with public, private, non-profit, and faith-based organizations to facilitate rapid deployment and public awareness of high-profile demonstration buildings that use innovative energy efficiency and/or technology to limit energy use.		
B3.5	green building tracking. Develop data methodology to monitor use and impacts of green building incentives, to inform future incentives and develop recommendations for policy or programs		

Potential Impact:



Strategy B4. Reduce energy use in new construction or redevelopment.

To meet the needs of a growing population, our region will need to add approximately 30,000 new housing units by 2030 and nearly 55,000 new units by 2050, as well as around 23 million square feet of additional commercial and industrial space. Standards for energy efficiency in new development are generally set by the State Building Code Council, and requirements scheduled to go into place in 2021² set stricter emissions thresholds for most new buildings. Developers can incorporate greener practices more easily in new construction than existing structures, but such requirements can increase upfront costs—incentives and tools like the actions listed below can help to encourage the adoption of green building practices while balancing the need to keep housing affordable and local business costs down.

ASSESSED ACTIONS		Impact GHG	Impact OTHER	
B4.4	green public buildings. Require that new local government facilities and other public buildings demonstrate green building technologies and practices.			
B4.5	permitting incentives. Offer streamlined permitting, lower fees, or other incentives for projects that meet green building certification standards.			
B4.6	energy efficiency tax exemptions. Create a local property tax reduction or credit for new buildings that meet an energy efficiency performance standard.			
B4.7	land use incentives. Provide land use incentives (such as floor area ratio, density bonus, height bonus, or parking reductions) for zero-net carbon buildings or other applications that dramatically increase energy efficiency.			
B4.9	permit counter technical assistance. Hire or contract with dedicated green building specialists to provide technical assistance through the permitting and development process.			
B4.11	grid-connected appliances. Require smart appliances in new construction, especially water heaters that control timing of demand.			
B4.12	multifamily submetering. Require submetering for new multifamily buildings so residents can track energy use.			

Potential Impact: Greenhouse Gas Reduction Potential Ecosystem Health Social Equity Economic Benefit Adaptation Value Other Regional Goal Youth Priority

² In response to the COVID-19 pandemic, Governor Inslee delayed scheduled implementation of changes to the State Building Code from July 1, 2020 to February 1, 2021.

Strategy B5. Increase the production of local renewable energy.

Shifting our reliance for electricity away from polluting fossil fuels toward renewable sources like wind and solar power is one of the most important strategies we have to reduce emissions. Action at the state level, with the adoption of the Clean Energy Transformation Act, will move us a long way toward this end, but smaller-scale installation of renewable energy infrastructure can help support the transition as well, while saving ratepayers money over time and increasing local resilience. As of 2020, more than a thousand residential customers and over 60 businesses in the Thurston region have installed solar panels that feed into the power grid, generating nearly 10 million kilowatt hours each year.³ The actions identified below are intended to set the stage for broader access to this technology.

ASSESSED ACTIONS		Impact GHG	Impact OTHER
B5.3	public building solar. Install solar photovoltaics on all available and feasible municipal sites, including building rooftops, city hall, schools, police and fire stations, community centers, municipal water pump sites, and transit depots.		
B5.5	SolSmart. Evaluate and adopt elements of SolSmart program and adopt solar friendly practices.		
B5.8	solar-ready. Amend local development code to require solar-ready construction for all building types.		
B5.10	group purchasing. Develop/support a city-sponsored group solar purchasing program.		

Potential Impact:



What We Heard...

“Approve more options for very small, well-designed, affordable housing using incentives to cultivate interest by builders to construct.”

Response to community questionnaire

³ Puget Sound Energy, data provided 4/16/2020.

Strategy B6. Convert to cleaner fuel sources.

Greening our electrical grid is essential to achieving the climate targets, but electricity is not our only fuel source. Although it has a reputation for being “cleaner than coal,” natural gas also contributes to climate change, particularly by leaking methane, a powerful greenhouse gas far more potent than carbon dioxide, although less prevalent. Natural gas also can affect both indoor and outdoor air quality, causing impacts to public health.⁴ Approximately 32 percent of the Thurston region households rely on natural gas as their primary source of heat at home.⁵ Across the partner jurisdictions, that proportion is highest in Lacey (45 percent), although the greatest number of households that use natural gas are in unincorporated Thurston County (12,487 homes). Actions assessed for this plan would restrict new natural gas connections and encourage those with existing connections to shift to cleaner options.

ASSESSED ACTIONS		Impact GHG	Impact OTHER	
B6.1	natural gas to electric conversions. Educate business owners and residents on the options for electric appliances and the benefit of pairing electrification with the installation of renewable energy. Create incentives to support fuel switching.			
B6.2	electric appliances in new construction. Update municipal code to require electric appliances in new construction.			
B6.4	natural gas transition. Phase out new natural gas connections in new buildings over time.			

Potential Impact:



Greenhouse Gas Reduction Potential



Ecosystem Health



Social Equity



Economic Benefit



Adaptation Value



Other Regional Goal



Youth Priority

⁴ Zhu, Y, et al., April 2020.

⁵ U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates.



Buildings and Energy Sector: TARGETS AND INDICATORS

TARGETS

Baseline Year: 2015

- Reduce residential and commercial electricity consumption by 20 percent by 2030 and 30 percent by 2050.
- Reduce industrial electricity consumption by two percent by 2030 and five percent by 2050.
- Reduce residential and commercial natural gas consumption by 20 percent by 2030 and 50 percent by 2050.
- Reduce industrial natural gas consumption by ten percent by 2030 and 30 percent by 2050.
- Reduce residential consumption of other fuels (liquid petroleum gas, wood) by ten percent by 2030 and 20 percent by 2050.

KEY PERFORMANCE INDICATORS

- Annual residential, commercial, and industrial electricity consumption
- Annual residential, commercial, and industrial natural gas consumption
- Residential energy use per capita
- Commercial energy use per square foot

SUPPLEMENTAL PERFORMANCE INDICATORS

- Proportion of housing units with electric heat
- Grid-supplied renewable electricity
- Number of energy efficiency upgrades
- Proportion of households cost-burdened by energy and housing costs as a percentage of household income

Buildings and Energy Sector: CONSIDERATIONS FOR IMPLEMENTATION

The Thurston region is experiencing rising home prices and a severe lack of affordable housing. Actions taken to reduce emissions from the building sector must be designed with consideration of their impact to the cost of housing. Local builders already face a steep learning curve changing their practices in response to the new requirements of the state Building Code and a lack of local markets for some newer materials. A concern is that additional, restrictive requirements will favor large chains over local builders and contractors, who will be less able to purchase greener construction materials at scale.

The Clean Energy Transformation Act's push toward clean sources for electricity can dramatically reduce emissions from the building sector, but the tradeoffs include the need for new energy infrastructure and the potential for higher energy costs. Locally, we can support that transition by increasing energy efficiency of our building stock, including in lower income and senior households, and by enabling streamlined permitting for projects that support the energy grid of the future. This may include establishing clear expectations for how to proceed when renewable energy infrastructure conflicts with other community priorities, such as tree preservation. The most efficient way to shift our grid will likely involve large scale renewable energy infrastructure in other areas of the state and county, however, advancing more locally distributed renewable energy sources can help support local resilience and independence.

Actions that focus on changing price signals through subsidies and incentives must carefully consider their potential impacts. Property tax and permit fee reductions reduce revenue sources that fund schools and support staff, undercutting our ability to develop local expertise, update infrastructure, process permits for greener construction, and advocate for further climate mitigation measures. Tax and fee reductions should only be proposed when offset by new or different revenue sources. Incentives must be designed by first understanding what market or social factors create barriers to developing more energy efficient buildings. Such programs should be targeted to benefit disadvantaged groups, or to projects that go above and beyond to set a model for others. Pilot programs that begin through incentives can lay the groundwork to understand where regulatory requirements can be most effective.