

Appendix 2: Washington Policies to Reduce Greenhouse Gas Emissions

Between 2005 and 2010, the State of Washington implemented many policies aimed at reducing greenhouse emissions. In the 2008 Comprehensive Plan, Ecology estimated that policies in place prior to 2008 would produce approximately 45 percent of the emissions reductions necessary to reach our 2020 statutory targets.

Since publication of that plan many proposed policies have been implemented or superseded by additional legislation. That process has strengthened some regulations while others have been weakened.

These policies are now part of our state's GHG projection, which finds that emissions will stay relatively constant between now and 2020. In order to continue on our projected path of emissions we must ensure full implementation of all of these policies.

Unfortunately, maintaining emissions at current levels means we are not on track to meet the state's statutory GHG reduction limit for 2020, and must continue to look for additional opportunities to increase energy efficiency, promote renewable energy, and otherwise reduce our GHG emissions.

Transportation

Clean Cars: Tailpipe Emissions Standards

In 2005, the Washington State Legislature adopted California's clean car standard for the 2009-2016 light-duty vehicle model years.¹ Washington is one of 14 states that have adopted the California standards.

On June 30, 2009 the Environmental Protection Agency (EPA) granted California's long-standing request for a Clean Air Act waiver necessary to implement this rule. Along with the waiver, the Obama administration announced a compromise approach to allow automakers to comply with one national standard to satisfy both the California standards and the federal Corporate Average Fuel Economy (CAFE) standard. Under the compromise, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) conducted a joint rulemaking to establish a national program for light-duty vehicles in model years 2012 through 2016.² Automakers have the option to comply with either the federal standard or the California standard. In 2016, both standards become equivalent requiring each automaker's vehicles sales to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO₂) per mile, equivalent to about 35.5 miles per gallon (mpg).

¹ Codified as RCW [70.120A](#), adopted in WAC [173-423](#).

² Adopted in [40 CFR 86 and 600 and 49 CFR 531](#)

Clean Fuels: Renewable Fuels

Federal Renewable Fuel Standard

The federal 2007 Energy Independence and Security Act (EISA) extended the existing federal renewable fuel standard, known as RFS2. EPA finalized the RFS2 rule in February 2010. The federal standard requires that transportation fuel sold in 2010 include almost 13 billion gallons of biofuels. The mandate rises to 36 billion gallons by 2022. RFS2 sets volume standards for specific categories of renewable fuels including cellulosic, biomass-based diesel, and total advanced renewable fuels. In order to qualify for these volume categories, fuels must demonstrate that they meet certain minimum GHG reduction standards, based on a lifecycle assessment, in comparison to the petroleum fuels they displace.³

Corn ethanol can only account for 15 billion gallons towards meeting the national RFS based on EPA's lifecycle-based requirements. Beginning in 2010 increasing levels of advanced and cellulosic biofuels are required. These biofuels must have a GHG savings of 50 percent or more, throughout the life cycle, when compared with conventional gasoline or diesel. In 2022, at least 16 billion gallons must be cellulosic biofuels with a savings of at least 60 percent over conventional gasoline throughout the life cycle.

Based on EPA's primary control case for compliance and estimates of fuel use in 2022, the federal RFS2 will result in ethanol representing 17 percent of gasoline sales nationwide and biodiesel to reach 15 percent of diesel sales.

The federal RFS2 requires biofuels quantities nationwide. There is no guarantee that any of these fuels will be sold in Washington without additional state requirements. In fact, with Low-Carbon Fuel Standards (LCFS) implemented in California, Oregon, and British Columbia there is a chance Washington will see large quantities of high carbon-intensity petroleum and biofuels as the advanced low-carbon fuels are delivered to meet the requirements in our neighboring states and provinces.

Washington Renewable Fuel Standard

In addition to RFS2, Washington has a statewide RFS that also sets minimum sales percentages of ethanol and biodiesel.⁴ By November 30, 2008, biodiesel must represent 2 percent of all diesel fuel sold in Washington. This figure rises to 5 percent when Washington's feedstock production and processing capacities can satisfy a 3 percent requirement. By December 1, 2008, ethanol must represent 2 percent of all gasoline sold in Washington. The state ethanol standard has already been met with the fuel quantities required by the federal RFS2 program. However, biodiesel has failed to meet the state requirement, as it represents less than 1 percent of all diesel sold in the state.

³ Lifecycle analysis of fuels quantify GHG emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer <http://www.epa.gov/otaq/fuels/renewablefuels/regulations.html>

⁴ Codified as RCW [19.112](#).

The failure to comply with this state regulation is because the requirement is put on the state as a whole, with no one entity responsible for compliance. There is also no penalty for non-compliance. The Department of Commerce (Commerce) State Energy Strategy update suggests changing the state RFS so that each gallon of diesel fuel sold must contain 2 percent biodiesel, making the requirement enforceable.

Plug-in Hybrid Electric Vehicles and Electrification

Mass-produced Electric Vehicles (EVs) and Plug-in Hybrid Electric Vehicle (PHEVs) will be introduced in Washington in the fall of 2010. In December the all electric Nissan Leaf will debut in Puget Sound and other select U.S. markets, with the PHEV Chevy Volt expected soon after. To speed the transition to electric vehicles the City of Seattle and Ecotality, an electric vehicle infrastructure provider, received an American Recovery and Reinvestment Act (ARRA) grant to expand charging infrastructure.⁵ Consumers purchasing Nissan Leafs when they rollout will receive a grant totaling half the cost of a home charging station.

In total, between 1,500 and 2,000 electric vehicles charging stations will be built around the Puget Sound region over the next two years. Installation of both public and private vehicle charging stations is being funded by a series of federal grants totaling more than \$22 million.

Clean Fuels Tax Incentives

Beginning January 1, 2009, new passenger cars, light-duty trucks, and medium-duty passenger vehicles powered by a clean alternative fuel are exempt from the state sales and use tax.⁶ This tax exemption applies to purchases of vehicles powered exclusively by a clean alternative fuel (such as natural gas, propane, hydrogen, or electricity). In 2010, the legislature extended this tax credit until July 1, 2015.

The legislature has also passed tax exemptions on the sale of electric vehicle batteries and the labor and services to install electric vehicles batteries and vehicle charging infrastructure.

West Coast Green Highway

The states of Washington, Oregon, and California and the province of British Columbia are working together to advance the West Coast Green Highway, an initiative to promote the use of cleaner fuels. The West Coast Green Highway is the over thirteen hundred miles of Interstate 5 (I-5) stretching from the U.S. border with Canada, through Washington, Oregon, and California, to the U.S. border with Mexico.

Within Washington, WSDOT is launching an Alternative Fuels Corridor Pilot project to ensure adequate and reliable availability of alternative fuels such as natural gas, biodiesel, ethanol, hydrogen, and electricity. In the next year, WSDOT, in partnership with utilities, EV infrastructure providers, and other agencies will begin installing public charging stations along the length of I-5 and I-90 between Seattle and Ellensburg, giving Washington the first “border to border” EV charging network.

⁵ For additional information, see <http://www.theevproject.com/index.php>

⁶ Codified as RCW [82.08.809](#)

State Agency Biodiesel Consumption

As a part of the state's efforts to reduce its dependence on foreign oil, reduce GHG emissions, and stimulate local production and use of biodiesel, state agencies are required to use a minimum of 20 percent biodiesel by total volume for operating diesel-powered vessels, vehicles, and construction equipment.⁷

Due to serious budgetary and infrastructure constraints, the Legislature adjusted the biodiesel requirement for the state ferries. The revised mandate states that, for the 2009-11 biennium, all fuel purchased at only the Harbor Island truck terminal in Seattle must be a minimum of 5 percent biodiesel so long as the price does not exceed the price of diesel by more than 5 percent.

During the period January 1 to June 30, 2010, more than 9.9 million gallons of diesel were purchased by state agencies, including 221,000 gallons of biodiesel.⁸ This is an increase of more than 22 percent from the 172,000 gallons purchased in the last six months of 2009. Total biodiesel use by state ferries increased, as a B5 biodiesel blend continued to be the standard fuel for six vessels in the fleet. Biodiesel purchases by state agencies for use in vehicles and equipment increased to 119,000 gallons.

Biodiesel purchases by state agencies other than the state ferries increased to 8.7 percent of total diesel purchased for the six-month period.

WSDOT accounted for 93 percent of all biodiesel purchased by state agencies. About half of the biodiesel was used in state ferries and half was used in other WSDOT vehicles. Excluding the ferries, biodiesel purchases by WSDOT in Western Washington increased to 15 percent of total diesel purchased.

VMT Reduction

Commute Trip Reduction

The Commute Trip Reduction (CTR) program was implemented by the legislature in 1991 with goals to improve air quality, reduce traffic congestion, and reduce fuel consumption.⁹ The CTR program is an employer-based program aimed at encouraging the use of alternatives to driving alone. Under CTR, local jurisdictions establish goals for reducing drive-alone trips and VMT and develop plans and policies to achieve those goals. Local governments within nine counties work with major employers in the urban growth areas of the state to implement trip reduction strategies. In 2009, nearly 530,000 employees had access to employer CTR programs.

The CTR program removed nearly twenty eight thousand vehicles from the road every weekday morning, and resulted in an annual savings of three million gallons of gas, or \$7.8 million worth of fuel in 2009. Removing these vehicles from the road reduced twelve thousand nine hundred hours of delay in the Central Puget Sound Region saving the region's commuters time, supporting efficient freight mobility, and promoting economic development. CTR reduced 62 million VMT statewide annually, reducing congestion, energy consumption, and GHG

⁷ Codified as RCW [43.19.642](#)

⁸ For additional information see, <http://www.ga.wa.gov/News/2010-01-BiodieselReport.pdf>

⁹ Codified as [70.94.521](#)

emissions.¹⁰ Making the transportation system more efficient provides financial and environmental benefits to Washington's commuters, employers, and local communities.

In 2006, the CTR Efficiency Act made two significant changes to the CTR Law. One change restructured the program from a worksite focus, to a jurisdictional emphasis, creating jurisdictional goals, rather than a singular worksite goal. This change put the onus on jurisdictions to work towards making more transportation-efficient land use choices, thereby creating more access to transportation options for all worksites within a jurisdiction. The second significant change made by the 2006 CTR Efficiency Act created the Growth and Transportation Efficiency Center (GTEC) program, an offshoot of CTR.

Growth and Transportation Efficiency Center

GTECs build upon the successful foundation of CTR and expand the program to engage an additional 235,000 commuters at thousands of additional worksites. Washington's seven GTECs are located in some of its most congested, dense, and highest trip-generating urban centers. These urban centers have limited parking, and high concentrations of smaller employers who are not required to participate in CTR. GTEC works with businesses, schools, and neighborhoods to find new ways to provide access to jobs and housing, by promoting and encouraging transportation options.

GTEC's flexible state framework allows for unique and effective local interpretation, new public-private partnerships, and maximum leveraging of local funds, investments, and policy changes. They are an effective way to help governments meet and align local, regional, and state objectives, and require a higher level partnership, prioritization by transit agencies, and certification by regional governments.

GTEC bridges the gap between the Growth Management Act and the CTR Program, by effectively linking land use to transportation. GTEC offers local stakeholders strategies to identify gaps in infrastructure and plans, align local and regional investments, and tools to meet goals for transportation, land use, economic development, and climate change. GTEC is instrumental in affecting local land use policy changes, such as parking standards, zoning requirements, transit planning, and bicycle and walking infrastructure. Between 2007 and 2009, CTR worksites within GTECs were about nine times as successful in reducing drive-alone rates compared to worksites outside of the GTECs.

In 2007-2009, the state provided \$2 million total to seven cities to develop and implement GTECs. Despite remarkable initial success, direct state funding for these four-year programs has been discontinued in 2010. Jurisdictions indicate that the GTEC approach needs to be continued and expanded for greater performance in reducing trips and VMT and long-term emissions reductions by nurturing transportation-efficient land use policies.

Puget Sound Regional Council

The Puget Sound Regional Council (PSRC) is the regional transportation planning organization for King, Kitsap, Pierce, and Snohomish Counties. The PSRC planning region contains approximately 54 percent of total state population. PSRC recently released their Transportation 2040 Update, a plan to envision the regional transportation system over the next thirty years.

¹⁰ For additional information, see <http://www.wsdot.wa.gov/TDM/CTR/>

Transportation 2040 is built upon the foundation of VISION 2040, PSRC's regional growth strategy. VISION 2040 preserves natural resource lands by focusing regional development in cities and other growth centers, supporting development of compact communities where people may both live and work.

The transportation plan then establishes three integrated and sustainable strategies: (1) Congestion and Mobility; (2) Environment; and (3) Funding to develop a regional plan within the constraints of VISION 2040. These strategies guide transportation investment decisions to meet our growing travel needs for both people and freight – more transit, more biking and walking facilities, more ferries, and more complete roadways. Within these strategies the plan identifies four major categories of investment: preservation, maintenance and operations; safety and security; efficiency; and strategic capacity.

PSRC took a proactive stance to address the state's GHG limits and VMT reduction benchmarks in the Transportation 2040 process. Their Environmental Impact Statement created as part of the SEPA process evaluated each planning scenario for GHG emissions as well as VMT. The data produced from this evaluation process helped to inform the region and state on the potential benefits of a combination of transportation strategies in reducing emissions and VMT.

Based on PSRC's analyses and research, as well as data and research conducted at the national level, Transportation 2040 includes a Four-Part Greenhouse Gas Strategy. Recognizing that it will require a variety of strategies and tools to effectively reduce emissions from the transportation sector, the four-part strategy contains the following elements:

- **Land Use:** building upon the VISION 2040 Regional Growth Strategy to further the goal of affordable housing near to jobs, and to pursue additional refinements through strategies such as transit oriented development facilities;
- **User Fees:** recognizing its critical role in reducing VMT and emissions, transition the region over time to a user fee/roadway pricing system;
- **Choices:** continue to provide travelers options to the single occupant vehicle, and continue research into the costs and benefits of various strategies;
- **Technology:** recognizing that improvements to vehicles and fuels will play a crucial role in reducing emissions, PSRC, with the help of Ecology and WSDOT undertook research on the potential technological advances that may be likely in our region by the year 2040.

Transportation 2040's four-part greenhouse gas reduction strategy is flexible, and is designed to incorporate anticipated guidance specific to the region and the transportation sector. Analysis shows that with compact land use patterns, aggressive implementation of pricing and technology, along with increased transportation choices, the strategy has the potential to reduce regional GHGs from transportation by up to 28 percent below 2006 levels. These results show that Transportation 2040 is on the right track toward reducing GHG emissions associated with transportation in the Puget Sound region.

Energy Efficiency

Northwest Power and Conservation Council 6th Power Plan

The Northwest Power and Conservation Council (NW Power Council) was formed by the Northwest states in 1981 in accordance with the Pacific Northwest Electric Power Planning and

Conservation Act of 1980. The NW Power Council is charged with creating a power plan for the region to ensure an adequate, efficient, economical, and reliable power supply for the Pacific Northwest.

The 6th Power Plan was published in February 2010.¹¹ This plan lays out an electrical resource strategy that minimizes the expected cost of, and risks to, the regional power system over the next 20 years.

In each of its power plans, the Council has found substantial amounts of conservation to be cheaper and more sustainable than most other types of generation. In the 6th Power Plan, because of the higher costs of alternative generation sources, rapidly developing technology, and heightened concerns about global climate change, conservation holds an even larger potential for the region.

The Power plan estimates that 6,000 aMW (average megawatts) in cost-effective energy-saving measures can be adopted throughout the Northwest by 2030.¹² This is enough energy to meet 85 percent of the region's load growth for the next 20 years. If developed aggressively, this conservation, combined with the past successful development of energy efficiency could constitute a resource comparable in size to the federal hydroelectric dams in the Northwest.

In addition to aggressive investment in conservation, the Power Plan finds that investment in renewable resources and highly efficient natural-gas plants is the best way to meet any additional electricity load growth that can't be met with conservation. The plan also calls for development and deployment of smart grid technologies and other system improvements to help the region meet its future energy needs and improve our energy system.

Electric Utility Energy Efficiency

In 2006, Washington voters passed Initiative 937 (I-937), the Energy Independence Act.¹³ In part, the law requires utilities serving more than 25,000 customers to adopt all cost-effective measures to promote energy efficiency in their service areas.

I-937 requires each qualifying utility to set both two-year and ten-year conservation targets. In setting its targets, each utility must use methods consistent with the Northwest Power and Conservation Council described in its most recent power plan.

All qualifying utilities were required to submit their first round of conservation targets by January 2010. Together these targets estimate that there is 1,655 gigawatt hours in cost-effective conservation available to these utilities over the next two years. If fully implemented this is equivalent to the electricity needed to power over 127,000 Washington homes. The actual conservation potential in the state may actually be higher, as most utilities used the definition of cost-effective conservation from the 5th Power Plan to set targets. The updated power plan includes larger quantities of cost-effective energy savings and we expect utilities will update their targets in the future as required by law.

As part of implementing this requirement, the Utilities and Transportation Commissions (UTC) staff work closely with the three investor-owned electric utilities as the companies set their

¹¹ See <http://www.nwcouncil.org/energy/powerplan/6/default.htm>

¹² An average megawatt is 1000 kilowatt-hours delivered continuously for a year.

¹³ Codified as RCW [19.285](#).

conservation targets, attending frequent advisory group meetings, reviewing past program achievements, comparing proposed targets to past performance, and encouraging utilities to continue to set challenging targets. Although this requirement does not apply to natural gas utilities, UTC staff use many of the same techniques in the oversight of natural gas utilities.

In addition, the UTC reviews and approves funding for utility conservation programs, helps utilities develop conservation programs as part of their planning process, and encourages energy utilities to pursue new conservation opportunities through the approval of pilot projects.

Building Energy Codes

Energy codes decrease building energy use by requiring the adoption of minimum energy efficiency technologies, building techniques, and practices in new construction.

Washington's first statewide energy code was adopted in 1986. The Washington State Building Code Council develops and implements statewide residential and commercial energy codes.¹⁴ These codes are updated every three years. Large cities can adopt energy codes for commercial buildings that are more stringent than the state's code.

In 2009, the Washington State Building Code Council approved the most recent edition of the Washington State Energy Code (WSEC). This code will result in energy savings of 18 to 26 percent for low rise residential construction and 17 percent for commercial buildings compared to the 2006 WSEC. The City of Seattle has also adopted new non-residential energy code language that reduces energy beyond the achievement of the state code.

Based on a recommendation of the Climate Action Team (CAT), the legislature has directed the State Building Code Council to make incremental improvements in the energy code each code cycle achieving a 70 percent reduction in building energy use by 2030, using the 2006 edition of the WSEC as a baseline.¹⁵ This will require the State Building Code Council to adopt code revisions resulting in energy savings of approximately 8 percent per code cycle (beginning in 2013 and every three years after).

The legislature also required Commerce to develop and implement a strategic plan for enhancing energy efficiency in and reducing greenhouse gas emissions from homes, buildings, districts, and neighborhoods by December 2010.¹⁶ The strategic plan must be used to help direct the future code increases. The strategic plan needs to identify barriers to achieving net zero energy use in homes and buildings and identify how to overcome these barriers in future energy code updates and through complementary policies.¹⁷

School Energy Efficiency Funding

In 2009 and 2010 the legislature allocated \$117 million for energy efficiency projects in public schools throughout the state. As part of this program The Office of Superintendent of Public Instruction (OSPI) distributed \$17 million in 2009 and \$42 million in 2010 to public K-12 school districts around Washington. OSPI distributed an additional \$7.5 million in November 2010. The

¹⁴ For more information, see www.sbccc.wa.gov/sbccindx.html.

¹⁵ Codified as RCW [19.27A.160](#)

¹⁶ Codified as RCW [19.27A.150](#)

¹⁷ For more information, see <http://www.commerce.wa.gov/site/1325/default.aspx>

monies distributed to date will fund one hundred and four energy efficiency projects. Together the energy savings from these projects are projected to save Washington school districts over \$4 million each year.

In addition, Washington's 2010 Supplemental Capital Budget (ESHB 2836) included \$50 million for Commerce to distribute in energy cost savings grants. The Jobs Act for Public K-12 and Higher Education grants are being awarded through a competitive process, and must be used solely for energy and operational cost savings improvements. Two rounds of awards have distributed the money to seventy-four public education institutions around the state. The projects leverage an additional \$78 million in non-state funding and will create an estimate 1,530 jobs around the state while reducing energy costs for public school systems.

Renewable Energy

Electricity Supply

Washington State leads the nation in hydroelectric power generation and in generation from all renewable resources combined.¹⁸ To continue our progress toward a clean energy economy, I-937 established a renewable portfolio standard (RPS). By 2020, utilities with at least 25,000 customers must obtain 15 percent of their electricity from new renewable resources like wind and solar. The law sets interim targets of 3 percent by 2012 and 9 percent by 2016.

To promote compliance with the RPS, the UTC began an inquiry during 2010 on the regulatory treatment of utility acquisitions of renewable energy resources. The UTC is examining the following issues as part of this inquiry:

1. The progress of investor-owned utilities in meeting the RPS.
2. Whether the existing statutory and regulatory frameworks impede compliance with RPS requirements,
3. Whether the statutory and regulatory frameworks should encourage acquisition of renewable resources in excess of that required by the RPS,
4. Whether the UTC should consider adopting rules or new regulatory practices that would provide incentives for utilities and customers to acquire renewable resources,
5. Whether the UTC should propose any legislative changes relative to incentives for acquisition of renewable resources by utilities and customers.

Based upon the information and stakeholder perspectives resulting from the inquiry process, the UTC will decide what further steps, such as proposing legislation, might be appropriate to encourage regulated utilities to meet the RPS requirements, while protecting the interests of ratepayers.

¹⁸ U.S. Department of Energy, Energy Information Administration, *State Energy Profiles*.
<http://tonto.eia.doe.gov/state/>

Wind Energy

As of September 2010, eight wind projects were operating in Washington. These projects can produce more than 1,900 megawatts (MW) of power. Other projects totaling more than 250 MW are in the planning stage. Washington currently ranks fifth in U.S. wind power production after Texas, California, Minnesota, and Iowa. Additional projects that will add another 800 MW to our wind power capacity are currently under construction.¹⁹

Wave and Ocean Energy

Washington and Oregon have the largest wave energy resources in the lower 48 states. Several sites in Puget Sound with excellent tidal resources could be developed, with potential output of several hundred megawatts of tidal power.

There are currently two active tidal power projects in Washington. Snohomish County Public Utility District is seeking a license from the Federal Energy Regulatory Commission (FERC) for a project at Admiralty Inlet. The U.S. Navy also has a pilot project off their Indian Island base.

Electric Utility Emissions Performance Standard

ESSB 6001 requires a GHG performance standard for all new electricity generation, including power purchased under contracts of five years or longer. The performance standard requires that new power sources produce no more emissions than the rate of an average new natural gas, combined-cycle combustion turbine.²⁰ The law allows for storing (sequestering) of carbon dioxide to meet the performance standard.²¹ Commerce can update the EPS every five years based on the results of a survey of the emissions rate of new commercially available combined cycle natural gas turbines. We recommend Commerce begin this survey, so they are able to update the EPS at the earliest possible time.

To date, UTC staff have reviewed three acquisitions of combined-cycle gas turbine plants subject to the Greenhouse Gas Emissions Performance Standard, one plant by each of Washington's three investor-owned electric utilities (IOUs). Each utility, in the context of a general rate case, has successfully demonstrated that its acquisition complied with the greenhouse gas emissions standard. The result is that these newly acquired plants will produce fewer greenhouse gases for every kilowatt of energy they make than using traditional coal or less efficient gas turbine plants.

Green Building

Government Offices

In April 2005, Governor Gregoire signed the High-Performance Public Buildings Act, setting green building requirements for construction of state-funded projects larger than 5,000 square

¹⁹ American Wind Energy Association. www.awea.org/projects/projects.aspx?s=Washington

²⁰ This rate is approximately 0.5 metric tons carbon dioxide equivalent per megawatt hour of electric power.

²¹ Ecology rules can be found at WAC [173-407](#) and WAC [173-218](#); EFSEC's rules can be found at WAC [463-80](#) and WAC [463-85](#).

feet.²² As the first state to require green building practices for all publicly funded buildings, Washington is already leading the nation. It requires that these buildings reach at least the Leadership in Energy and Environmental Design (LEED) Silver standard of the U.S. Green Building Council.²³ Green building standards result in major energy savings and other improvements.

Twenty state projects have achieved LEED certification from the U.S. Green Building Council since July 2005, when the High-Performance Green Building Act came into effect. Seventy-three additional state projects are currently pursuing LEED certification.

High-Performance Schools

OSPI administers the high-performance schools program in Washington. The state's green building standard, the Washington Sustainable Schools Protocol (WSSP), was updated in the fall of 2010. All new construction and major remodels of K-12 schools must be built to either the WSSP or LEED Silver standard.

As of the fall of 2010, thirty one school projects have been completed using the WSSP. School districts must report to OSPI starting one year after the school is occupied. About half of the completed schools have submitted their first annual reports, which capture building use data as well as energy and water use.

Thirteen projects that are completed were granted "impracticable" status due to bond issue date for the project. They were still required to complete and submit pre and post construction WSSP scorecards, but were not required to verify the scorecard or do annual reporting.

Beyond Waste

Washington's Beyond Waste Plan presents steps to reduce the state's production of waste and toxic materials, reducing the state's GHG emissions. The Plan builds on the state's robust recycling infrastructure and contains many recommendations from the 2008 CAT.

The disposal of solid waste produces GHG emissions in a number of ways:

- Decay of waste in landfills produces methane, a GHG 21 times more potent than carbon dioxide.
- Burning (incineration) of waste produces carbon dioxide as a byproduct.
- Transporting wastes to disposal sites produces emissions from fuel.

In addition, throwing away materials means new raw materials must be mined, manufactured, or otherwise obtained, often leading to increased GHG emissions in those sectors of the economy as well.

The plan recommends we consider our waste's entire lifecycle (design, production, use, and disposal) and lays out steps the state can take to encourage lifecycle-based product design. By

²² Codified as [RCW 39.35D](#)

²³ LEED stands for Leadership in Energy and Environmental Design and is a trademarked program of the U.S. Green Building Council.

considering our waste's entire lifecycle the plan's strategies prevent many materials from ever entering the waste stream.

Organic material makes up an estimated 30 percent of Washington's waste stream. Organic waste produces GHGs through decomposition in landfills, open burning of yard waste, and storage of manure in lagoons. Beyond Waste's Organic Materials Initiative seeks to strengthen current organics reuse and recycling systems so that this material can be converted into industrial feedstocks and resources such as compost, bioenergy, and biofuels. These actions can reduce waste by increasing soil quality and soil carbon sequestration, and producing energy and fuels to offset fossil fuel dependent energy sources.

The Beyond Waste Plan also emphasizes the benefits of green building, specifically through widespread recycling of construction waste, reuse of existing buildings, and improved building energy efficiency. To implement this strategy, the plan recommends further outreach, incentives to encourage the private sector to pursue green building, and expanded construction material recycling capacity.

American Recovery and Reinvestment Act

The American Recovery and Reinvestment Act (ARRA) was signed by President Obama in February, 2009. ARRA distributed \$787 billion dollars to create and preserve jobs.

Energy Funding

Washington received \$2.6 billion of ARRA money for energy-related projects. Of this over \$200 million went directly to state, local, and tribal governments for investment in weatherization and other energy efficiency retrofit programs. These funds build on existing energy efficiency programs, as well as building new local financing options for energy efficiency such as creating a revolving loan fund for residential energy efficiency investments in Seattle and efforts to improve energy efficiency in 900 home and 150 local businesses in Whatcom County. ARRA also funded a statewide appliance rebate program for the purchase of energy efficient appliances.

ARRA also supplied over \$138 million to support renewable energy development in Washington. This money includes grants to both small- and large-scale renewable energy projects and money for research and development for Washington's universities and businesses to create the renewable energy technologies of the future.

Washington State also received money to develop and deploy the electricity grid of the future and for electric vehicle battery research and deployment.²⁴

Military Actions to Reduce Emissions

Washington has a number of military bases located in the state. All three branches of the military with major bases in the state are committed to reducing energy use and promoting renewable energy. The military, like all federal agencies must reduce energy intensity in their buildings 3 percent per year between 2005 and 2015, for a total reduction of 30 percent. New buildings must

²⁴ For additional info http://www.energy.gov/recovery/documents/Recovery_Act_Memo_Washington.pdf

also be built to standards 30 percent better than American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards. The military must also generate or procure 25 percent of all the electricity it uses from renewable energy sources.

Some of the many project the military is conducting to promote energy efficiency and alternative energy are outlined below.

Air Force

- The Air Force aims to reduce airplane energy consumption by 10 percent by 2015 from a 2006 baseline.
 - They plan to accomplish this mandate by reducing aircraft weight, optimizing flight routes, and conducting more training on flight simulators.
- The Air Force is in the process of certifying all of their planes to run on a 50 percent biofuel blend by 2011. By 2016, they must cost competitively acquire 50% of domestic aviation fuel requirement from alternative fuel blends in which the alternative component is derived from domestic sources produced in a manner that is greener than fuels produced from conventional petroleum.
 - The Air Force has conducted tests in aircraft using jet fuel produced from renewable feedstocks.
- Fairchild Air Force base in Spokane invested in projects in 2008 that will reduce energy use, saving taxpayers \$350,000 annually
 - Additional energy efficiency projects are planned for 2009 and 2010.
- Fairchild Air Force Base purchased 4 percent of their electricity from renewable sources and McChord Air Force Base purchased 8 percent of their electricity from renewable sources.

Army

- Fort Lewis plans to reduce stationary source and non-tactical motor vehicle air emissions by 85 percent by 2025.
- According to a WSDOT survey, Fort Lewis vanpoolers avoided approximately 2.2 million round-trip vehicle miles traveled in 2007.
- The first of several energy savings projects consisted of upgrades to lighting, building insulation, and HVAC control systems resulting in more than \$5 million worth of energy savings within the first three years.
- The based has developed a new master plan to create a sustainable community within Fort Lewis.
 - Aim to provide transportation options and project environmental resources within the base.

Navy

- Emission reductions of ~33,000 metric tons CO₂e from 2003 thru 2009 though lighting upgrades, facility improvements, steam distribution improvements, and organizational changes.
- Over the last five years Naval Base Kitsap has completed over \$46 million in energy projects, reducing energy bills by \$7 million annually.
- In Washington, The Navy has reduced energy consumption by 12 to 16 percent from the 2003 baseline, far exceeding the required reduction level of 9 percent.

- Naval Base Kitsap has participated in an ambitious program to reduce gasoline and diesel fuel consumption. Since 2008, the base has reduced 154 thousand gallons of gasoline by use of E85 ethanol and 56 thousand gallons of diesel by use of B20 bio-diesel. Additional reduction of fuels from the use of electric vehicles has collectively seen environmental improvements in air quality and GHG emissions.