Department of Commerce
Innovation is in our nature.

Energy Efficiency-Building Strategy Update 2014

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Report to the Legislature
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Acknowledgements

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Executive Summary

RCW 19.27A.160 directs the Washington State Building Code Council (SBCC) to develop energy codes that achieve a 70 percent reduction in building energy use by 2030 compared to the 2006 Washington State Energy Code (WSEC). To support this effort, RCW 19.27A.150 directs the Department of Commerce (Commerce) to develop and implement a strategic plan that will support achievement. Also, RCW 19.27A.170 requires commercial building energy disclosure at time of sale, lease, or when they are refinanced. Benchmarking was recognized by the strategic planning work group as a key element for advancing performance-based energy codes, as well as a way to provide market awareness.

In 2011, Commerce released the *Strategic Plan for Enhancing Energy Efficiency and Reducing Greenhouse Gas Emissions from Homes, Buildings, Districts and Neighborhoods*. We have developed this report to document progress made toward the goals of the 2011 plan. This includes accomplishments to date, activities expected to occur in 2014, and recommendations for further work.

Accomplishments

Energy Code Accomplishments

- The 2012 Washington State Energy Code (WSEC) will reduce residential energy use by 24 percent and commercial building energy use by 18 percent, compared to the 2006 edition of the WSEC.
- Washington State has the highest energy code compliance rate in the nation for single family homes.
- Washington commercial building energy code compliance has not been evaluated recently.

Energy Code Support

- Over a three-year period, energy code trainings reached over 6,000 building professionals. This was funded by the Northwest Energy Efficiency Alliance (NEEA).
- To support energy code development, Commerce and the SBCC developed a life cycle cost analysis methodology. This will support the evaluation of cost and benefits as the code is developed further.

2014 Expected Activities

Energy Code Development, 2014

In 2014, the SBCC will be facilitating a discussion of proposed energy code measures and formats to be considered for the next edition of the energy code. This is not a rulemaking, but structured discussion in advance of the next rulemaking cycle scheduled for 2015. It will be focused on commercial building energy codes and will likely include:

- Development of a voluntary aspirational energy code.
- Outcome based code – code compliance based on post-occupancy energy use targets.
- Identification of additional energy efficiency features to be considered for the next edition of the energy code.

Energy Code Development Funding

- Energy code technical development is largely performed by in-kind contributions from utilities, municipal governments, and building professionals. Current SBCC funding only covers rulemaking activities, including detailed support for technical advisory groups.

Energy Use Disclosure

- We cannot assess compliance with Washington's energy disclosure law. Because disclosure is limited to the two parties involved in the sale or lease transaction, there is no way of tracking activity or impacts.
- In contrast to Washington's experience, nine of 11 jurisdictions in the U.S. with benchmarking requirements include government-reporting criteria. This reporting is consolidated into public reports that provide additional market transparency.

Improving Access to Capital for Energy Efficiency Projects

- In 2009, federal Recovery Act funds were allocated to new financing mechanisms in support of energy efficiency in buildings.
- The loan programs relied on two credit enhancement mechanisms: loan loss reserves and interest rate buy downs. With either mechanism, all of the money loaned to a building owner is private capital. The loan programs supported by credit enhancement mechanisms reduce the lender's risk of default. Part or all of a lender's loss is compensated from the reserve fund if a borrower defaults.
- The program as a whole was undersubscribed. However, several participating lenders achieved the hoped-for leverage, producing almost $6 million of energy efficiency loans and leveraging about $8 of private sector lending for every $1 of public credit enhancement funds. Funds remain available to support additional loans.

Enabling Net-Zero Energy Buildings

- A growing number of examples demonstrate net-zero energy capable buildings are possible in Washington's climate**.** These projects achieve low energy use because it was included in the design intent. The building owners set specific energy end use targets and carried them through the design-build process. After the buildings are completed, owners and occupants must collaborate to assure energy use targets are achieved.

Recommendations

Energy Code Support

- Identify funding to support energy code development. The current in-kind funding method for code development services may not provide enough support to reach the state energy efficiency goals.
- Identify state funding for energy code cost and benefit analysis. Improve the level of detail, including operations and maintenance and consider externalities such as improved worker productivity.
- Identify funding to conduct a commercial building energy code compliance evaluation. Identify compliance rates and make recommendations for improvement.

Energy Use Disclosure

- Modify Washington's Commercial Building Energy Disclosure Law – create a public reporting framework to increase market visibility, and add multi-family buildings.
- Work with utilities to improve automated utility data exchange with customer energy benchmarking accounts.
- Create residential energy bill disclosure requirements. Annual energy bills should be available to all residential clients at time of sale or when a property is offered for rent.

Improving Access to Capital for Energy Efficiency Projects

- In 2013, Governor Inslee and the Legislature allocated $15 million of state funds to create the Clean Energy Revolving Loan Fund. Commerce awarded these funds to two lenders, Craft3 and Puget Sound Cooperative Credit Union, to be matched with private capital and used to make loans for energy efficiency and renewable energy projects in Washington. As the overall portfolio of energy loans increases, lenders will better understand the risk characteristics of these loans. A large portfolio of loans with similar characteristics also improves access to secondary capital in the larger financial market, thereby lowering financing costs for future borrowers.
- Commerce will also continue to explore alternative mechanisms to increase access to capital for energy projects. On-bill financing mechanisms and energy conservation

"purchased power" agreements appear to be promising approaches, and Commerce will look for opportunities to encourage their implementation in Washington.

Enabling Net-Zero Energy Buildings

- Perform research required to establish energy use per square foot (EUI) targets for new buildings and major renovations by building type. This effort supports the development of design criteria for outcome-based codes, performance based design-build contracting, and net-zero ready design criteria.
- Develop and implement solar-ready design criteria. Solar-ready designs designate space for solar equipment to assure the space is kept free from obstructions. The structure is reviewed to confirm it can accommodate the solar and electrical equipment in the future.
- For public buildings, implement energy use per square foot (EUI) targets. This approach provides greater assurance that energy performance goals are incorporated into public buildings projects.

Introduction

After transportation, energy use in buildings is the next largest energy-consuming sector in Washington. The residential and commercial buildings sector accounts for 31 percent of energy consumption and 26 percent of energy cost in Washington.[1] While there is a long history of implementing energy efficiency in buildings, additional opportunity exists to reduce energy consumption cost effectively.

In 2009, Senate Bill 5854 was passed by the Washington State Legislature and signed by the Governor. Included in the bill are specific energy consumption reduction targets to be achieved through adoption of improved energy codes. The bill, now codified in RCW 19.27A.160, directed the Washington State Building Code Council to develop energy codes that achieve a 70 percent reduction in building energy use by 2030, compared to the 2006 Washington State Energy Code. To support this effort, RCW 19.27A.150 directs the Department of Commerce (Commerce) to develop and implement a strategic plan that will support achievement. When funding is appropriated specifically for these purposes, this process is to be completed every three years. The complete text of these laws is included as Appendix A, Relevant Statutes.

In 2011, Commerce released the *Strategic Plan for Enhancing Energy Efficiency and Reducing Greenhouse Gas Emissions from Homes, Buildings, Districts and Neighborhoods*.[2] This strategic plan was developed with input from a wide range of interest groups. Commerce, with support from the Washington State Building Code Council (SBCC), organized a work group of interested parties that provided input through a series of workshops and Internet meetings. This began with workshop participants determining the priorities for the current strategic work plan. Based on this prioritization, Commerce provided information on specific subject areas and took input from the stakeholders interested in those areas. Input from the workgroup informed the development of the final recommendations.

This building strategy is closely linked to the energy code improvements requested in RCW 19.27A.160 described above. Commerce worked with the SBCC to develop the framework for public input and prioritize the work. The legislation directs Commerce to develop a new plan every three years in anticipation of the next energy code adoption cycle. The first state building strategy focuses largely on improving buildings through energy code adoption and related enhancements. Future building strategies should provide input on a wider range of subjects related to energy use in the built environment.

Included in Senate Bill 5854 are requirements for building energy benchmarking and disclosure. RCW 19.27A.170 requires commercial building energy disclosure at time of sale, lease, or when they are refinanced. Benchmarking was recognized by the strategic planning workgroup as a

[1] Washington State Department of Commerce, *Energy Strategy Update* and *2011 Biennial Energy Report with Indicators*, 2011, Appendix B, Indicators 1 and 4.
[2] http://www.commerce.wa.gov/Documents/EO-2011-Strategic-Plan-for-Buildings.pdf

key element for advancing outcome-based energy codes, as well as a way to provide market awareness. In this report, we compare the Washington Benchmarking Statute to similar statutes from other jurisdictions.

In 2013, the Legislature did not fund an effort to develop a new strategic plan. To fulfill the mission of informing the Legislature of progress toward the goals set out in the legislation, Commerce has produced this update and recommendations, and reports the progress made toward the goals of the 2011 plan.

Progress Report

Energy Code Progress

Washington State Energy Code

The Washington State Energy Code (WSEC) is a principal driver for creating a more efficient building sector. The mandatory state code impacts new buildings, additions, major renovations, and equipment replacement. Energy codes have been implemented by municipalities in Washington since the 1970s. Since the adoption of a mandatory statewide energy code in 1990, the population of homes has increased by 27 percent and commercial building floor area has increased by 26 percent. By 2030, half of all the buildings statewide are expected to have been directly impacted by the energy code.

The Legislature has directed the SBCC to adopt state energy codes from 2013 through 2031 that incrementally move towards achieving the 70 percent reduction in annual net energy consumption using the 2006 WSEC as a baseline.[3] A strategic plan has been developed to support this effort. The following reports progress toward these goals and details the supporting activities.

Energy Code Savings Since 2006

The Washington State Energy Code has been updated twice since 2006 – in 2009 and 2012. Compared to the 2006 WSEC, homes meeting the 2012 WSEC will use 24 percent less energy. Commercial buildings constructed to the 2012 WSEC standards are estimated to use 18 percent less energy than prescribed by the 2006 WSEC.[4]

To measure progress toward the 2031 targets, Commerce and the SBCC have established two ramp rates for assessing incremental improvements to the energy code compared to the 2006 WSEC. One assesses progress based on an 8.75 percent savings per three-year code cycle compared to the 2006 WSEC. The other is based on a 14 percent incremental savings compared to each previous code cycle. Both approaches will ultimately achieve the 70 percent efficiency improvement by 2031.

When the achievement is compared to the expected incremental savings, the residential sector is on pace with the targets for incremental savings. The commercial building sector is lagging behind the incremental targets. While both sectors achieved good savings in the 2009 code cycle, the SBCC found it more difficult to move substantial savings in 2013.

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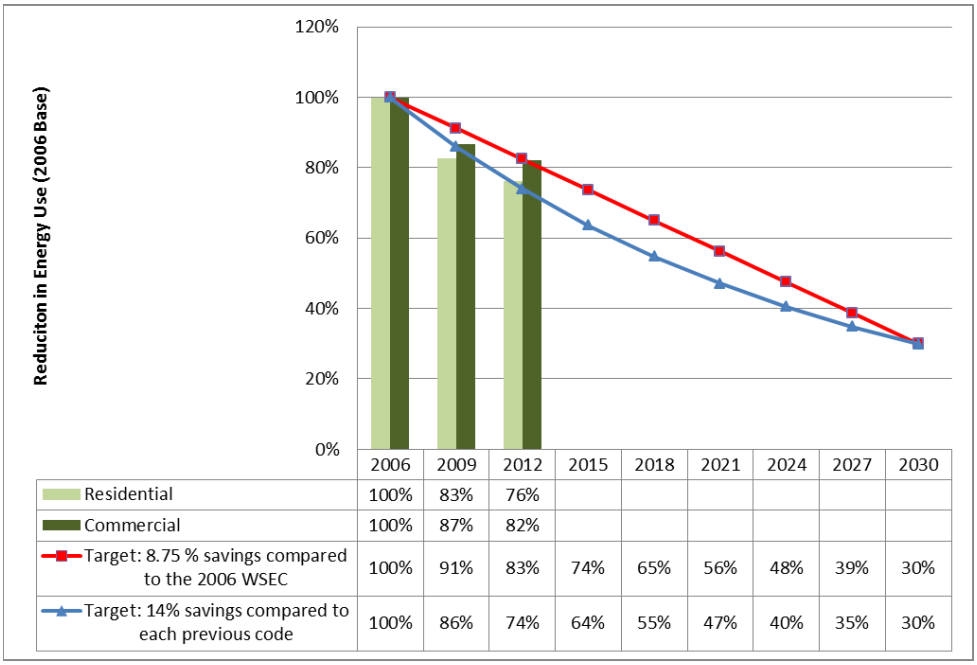
[3] RCW 19.27a.160

[4] Washington State Building Code Council, *2012 Washington State Energy Code Legislative Report, Progress Toward Reducing Energy Consumption in Buildings Required by ESSSB 5854, Chapter 423, Laws of 2009*, Olympia, 2012.

Figure 1, Incremental Code Improvement Compared to Targets, provides an illustration of targets and achievement for the WSEC updates.

Figure 1. Incremental Code Improvement Compared to Targets



	2006	2009	2012	2015	2018	2021	2024	2027	2030
Residential	100%	83%	76%						
Commercial	100%	87%	82%						
Target: 8.75 % savings compared to the 2006 WSEC	100%	91%	83%	74%	65%	56%	48%	39%	30%
Target: 14% savings compared to each previous code	100%	86%	74%	64%	55%	47%	40%	35%	30%

Washington State Energy Code Compared to National Standards

In July 2013, Commerce developed a detailed analysis comparing the 2012 WSEC to two national reference standards. Commerce developed this report in response to federal reporting regulations.[5] The regulation requires states to certify that the state energy code is equivalent or better than national reference standards. For residential occupancies, this analysis demonstrated the 2012 WSEC is more efficient than the 2012 International Energy Conservation Code.[6] For commercial occupancies the 2012 WSEC was compared to the 2010 edition of ASHRAE 90.1. It was determined that for most commercial occupancies, the 2012 WSEC would result in more efficient buildings.[7]

The 2012 WSEC significantly outperforms the base requirements for Leadership in Energy and Environmental Design or LEED. Based on LEED-2009, new construction projects will receive 8 to 12 LEED points just for meeting the requirements of the 2012 WSEC.

[5] Energy Conservation and Production Act (ECPA) (Pub. L. No. 94-385). The Department of Energy website provides a brief summary of this requirement. http://www.energycodes.gov/about/statutory-requirements

[6] Murray, C. *2012 Washington State Residential Energy Code compared to the 2012 International Energy Conservation Code*, Washington State Department of Commerce, State Energy Office, Olympia, 2013

[7] Murray, C., Rock, G. *2012 Washington State Commercial Building Energy Code Compared to ASHRAE Standard 90.1-2010*, Washington State Department of Commerce, State Energy Office, Olympia, 2013.

It is worth noting that the *2013 State Energy Efficiency Scorecard,* published by the American Council for an Energy Efficient Economy, ranked Washington as one of the top three states for energy codes. This ranking compares both energy code stringency and compliance.[8]

Energy Code Cost / Benefit Analysis

In the public debate about advancing the energy code, increased construction cost is a restraining factor. This is weighed against the financial benefit of reduced energy consumption in buildings. There is little consideration for maintenance, non-energy benefits, or non-financial benefits in the current analysis structure.

The state statue on Energy-Related Building Standards provides the SBCC direction in two sections.

> Pertaining to commercial building energy codes, "Any new measures, standards, or requirements adopted must be technically feasible, commercially available, and cost-effective to building owners and tenants." (RCW 19.27a.025 (1) (b))
> "If the council determines that economic, technological, or process factors would significantly impede adoption of or compliance with this subsection, the council may defer the implementation of the proposed energy code update" (RCW 19.27a.160 (2))

In the 2012 code adoption cycle, Commerce provided direction in the development of a cost benefit analysis for energy codes. Commerce recommended a life cycle cost analysis methodology developed by the National Institute of Standards and Technology (NIST) known as Handbook 135[9]. For many years, participants in the SBCC code adoption process have used life cycle cost analysis (LCCA) as part of their documentation process. Commerce recommended the SBCC adopt Handbook 135 methods to standardize and document the approach. Commence also suggested using the Annual Handbook 135 supplement as the source for standard energy price escalation and discount rates. [10] To make sure the discount and borrowing rates reflected business conditions in Washington, several SBCC members provided additional input. This process standardizes analysis submitted to the SBCC by advocates and consultants, creating a more credible outcome.

The Northwest Energy Efficiency Alliance (NEEA) funded consultants who completed economic analysis for the proposed 2012 WSEC. The analysis provided cost benefit analysis for large populations of buildings, and applied the recommended cost and benefit analysis factors. It also

[8] Downs, A. et al, *The 2013 State Energy Efficiency Scorecard*, American Council for an Energy Efficient Economy, Washington D.C., 2013
[9]National Institute of Standards and Technology, *Life-Cycle Costing Manual for the Federal Energy Management Program, Handbook 13*5, 1995.
[10] National Institute of Standards and Technology, *Energy Price Indices and Discount Factors for Life Cycle Cost Analysis 2013*, Annual Supplement to Handbook 135.

incorporated building population weighting consistent with methodologies implemented for Bonneville Power Administration and the Northwest Power and Conservation Council.[11]

As a result of the cost benefit analysis, the commercial sections of the 2012 WSEC were modified. The analysis considered the code changes proposed by the SBCC technical advisory group for energy codes. This included additional energy efficiency features that were not adopted as they were not verified as cost effective during the study. This resulted in less energy savings being incorporated into the 2012 WSEC.

Ideally, the SBCC would further develop the value stream provided by energy efficient construction and include it in the LCCA analysis. The 2012 NEEA analysis only provides an evaluation of construction and energy cost savings. Adding additional operational savings and non-energy benefits is needed to fully appreciate the value of energy efficient buildings. This requires additional resources for evaluating and monetizing the value stream.

Additional consideration of maintenance and operations savings could be incorporated into the LCCA analysis. For example, an LED lighting system requires little maintenance and lasts three times longer than a metal halide lighting system. Incorporating the value from lower maintenance and longer life in the LCCA can significantly increase the life time value of the LED lighting system.

Energy efficiency creates many sources of value beyond just cutting energy costs. Though hard to quantify and monetize, these real benefits are often worth far more than the saved energy. Simply put, better working and living conditions provide greater value. An analysis of the small yet growing ensemble of green buildings suggests that U.S. buildings labeled under the LEED or ENERGY STAR system charge 3 percent higher rent, have greater occupancy rates, and sell for 13 percent more than comparable properties.[12]

Washington State Energy Code Compliance Studies

Energy codes compliance studies document the application of the codes. Third party research is conducted to document how well energy codes are being implemented in the field. Energy-code compliance studies document the combined efforts of the building industry and local code enforcement agencies in implementing the provisions in the code.

The 2009 American Recovery and Reinvestment Act (ARRA) provided funding to states contingent upon a commitment to adopt codes equivalent to the national reference standards and achieve 90 percent compliance with national reference codes by 2017. When former-Governor Gregoire accepted ARRA funding on behalf of the state, she committed the state to

[11] The Commerce recommendations for cost and benefit analysis and the *2012 Energy Code Cost and Benefit* analysis are available from the SBCC website at https://fortress.wa.gov/ga/apps/sbcc/Page.aspx?nid=215.
[12] Amory B. Lovins, *Reinventing Fire: Bold Business Solutions for the New Energy Era*, Chelsea Green, White River Junction, 2011.

this condition. Washington State has documented compliance with this requirement for single family residential construction. For commercial construction, this evaluation remains an outstanding obligation.

NEEA commissioned a compliance study for Washington's single-family housing sector.[13] The study evaluated homes for compliance with the 2009 WSEC. The study found that the evaluated compliance rate was 96 percent. Energy modeling of each home in the study showed that many homes go beyond the minimum code requirements. This is the best residential compliance rate reported in the United States.

A similar evaluation of energy code compliance has not recently been competed for commercial construction in Washington State. Two regional studies provide insight into the energy code compliance rates in the Northwest.

A commercial energy code compliance study was completed in 2008 for NEEA.[14] In this study, code compliance with commercial building lighting requirements is 80 percent. Other parts of the codes, such as building shell, had compliance rates that approached 90 percent.

In 2011, a limited study of code compliance for the commercial lighting requirements was conducted in the four Northwest states.[15] Lighting power was generally in line with the code requirements, yet only 57 percent of the cases would have passed a stringent code review. Lighting control requirements were only met 69 percent of the time. To the evaluators, compliance seemed somewhat random. It was evident that additional training and more deliberate code enforcement is needed to fully realize the savings from this section of the energy code.

Energy Code Training

Building professionals and code enforcement personal learn about energy efficiency throughout their careers. Direct application of this knowledge to the energy code regulation is most notably provided by two organizations. Washington State University, Extension Energy Program (WSUEP) provides training and ongoing support for the residential sections of the code. NEEC provides support for the commercial building sector. Additional opportunities for training have been provided by Washington Association of Building Officials, Building Industry Association of Washington, home builder associations, and a few private trainers.

To support the implementation of the 2009 WSEC, trainings were provided from 2009 through 2011. During this time, WSUEP provided 215 residential energy code trainings, reaching over 5,000 participants. NEEC also provided numerous trainings throughout the state, reaching

[13] Cadmus Group, *Washington Residential Energy Code Compliance*, NEEA, Portland, 2013
[14] Northwest Energy Efficiency Alliance, *Non-Residential Energy Savings From Northwest Energy Code Changes 2005-2008*, Portland, 2008.
[15] Pultorak, A. et al, *Compliance Rates of Lighting in Commercial Building*s, Lighting Design Lab, Seattle, 2011.

several thousand participants. With the introduction of the 2011 WSEC, updated code trainings are now being offered by WSUEP and NEEC. Both of these training programs are funded by the NEEA.

Preparing for the Next Edition of the WSEC

In 2014, the SBCC will be facilitating a discussion of proposed energy code measures and formats to be considered for the next edition of the energy code. This is not a rulemaking, but structured discussion in advance of the next rulemaking cycle.

Residential Energy Code Development

For low-rise residential construction, future energy code requirements are fairly well mapped out. The current code includes a baseline of efficiency features that must be included in all homes. In addition, the builder must select one or more additional features from a list of numerous options.[16] This includes both energy efficiency and renewable energy features. Future editions of the code can be developed using the options already described in the code. This provides the needed technical descriptions. Advancing the code for this sector will be a challenge with respect to balancing the cost and benefits of additional code requirements.

Commercial Energy Code Development

Commercial buildings will be more challenging. The commercial buildings stock is diverse and requires a range of solutions. Developing the code for commercial buildings will be the primary task for the SBCC. The 2014 commercial building energy code agenda for the SBCC is anticipated to include:

- Development of a voluntary aspirational energy code.
- Outcome-based code – code compliance based on post-occupancy energy use targets.
- Identification of additional energy efficiency features to be considered for the next edition of the energy code.

Aspirational Energy Code

Voluntarily aspirational energy codes are developed to test code requirements several years in advance of formal adoption as mandatory statewide requirements. They can also serve to focus government or utility incentive programs. This provides builders with a more predictable view of future regulations and helps develop markets for energy efficiency. Massachusetts has adopted a "stretch" code and Oregon developed a "reach" code with similar objectives to this proposal.[17,18]

[16] 2012 WSEC, Section 406.
[17] *Massachusetts Stretch Energy Code*, Appendix 115AA, 2009. http://www.mass.gov/eopss/docs/dps/8th-edition/115-appendices.pdf

It is difficult to anticipate if the building industry will make use of a voluntary code. The Massachusetts stretch code has seen wide use as it has been adopted as a mandatory code by local jurisdictions and because it is well aligned with utility and tax incentives. The Oregon reach code is voluntary and has not been used because it lacks similar incentives. While the technical development of the aspirational code will be challenging in Washington, it will be even more challenging to develop a code that aligns the interest of utilities, municipalities, and the building owner.

The SBCC is expected to include pre-development of an aspirational energy code in its 2014 work plan. This will include an examination of the technical requirements as well as an examination of potential incentive structures.

Outcome-Based Code

An outcome-based energy code sets a specific energy use target for the buildings. To meet code, the building must use less energy than the specified target when it is occupied. The current energy code relies on prescriptive implementation of specific energy savings features or equivalent alternatives. Moving from a feature-based code, to a code based on post-occupancy energy use, is a major departure from the current energy code format and enforcement mechanisms. The challenges to development include:

- Establishing the energy use targets for a variety of commercial building occupancies.
- Determining who is responsible for building performance – builders, owners, or tenants.
- The structure for post-occupancy code enforcement, bonds, penalties, or requirements for remediation.

Advocates for this approach note that this approach will boast a number of advantages over the existing code framework.[19]

- Outcome codes allow greater flexibility in meeting the regulation. Integrated design, selection of energy efficient features, and building operation can all be used to meet the requirement at the least cost.
- An outcome-based code brings all building energy uses into the regulation.
- Regulation extends beyond construction and includes post-occupancy operation.
- A code based on actual energy use provides the most relevant measurement of achievement relative to net-zero energy use goals for buildings.

The 2012 Seattle Energy Code includes an outcome-based code alternative, the "Target Performance Path".[20] Rather than complying with the prescriptive details of the Seattle Energy

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[18] 2011 *Oregon Reach Code*. http://ecodes.biz/ecodes_support/free_resources/Oregon/11_Reach/11_ORReach_main.html

[19] Ryan M. Colker, Dave Hewitt, Jessyca Henderson, *Developing Effective Codes and Standards for Net-Zero Energy Buildings*, Building Design+Construction. March 2011. http://newbuildings.org/sites/default/files/5_Developing_Effective_Codes_and_Standards.pdf

[20] City of Seattle, 2012 Energy Code ORD, September 16, 2013. http://clerk.seattle.gov/~ordpics/117869.pdf

Code, building owners will be allowed to demonstrate compliance by meeting a post-occupancy energy budget. The building team will first be required to demonstrate, through building energy modeling, that the design will meet the operational objective. There are few mandatory efficiency measures. After occupancy, the building owner must provide a "Demonstration of Operating Energy Use" by reporting the annual energy use of the building. To assure compliance, the building owner provides a financial security to be used as a penalty for failing to achieve an operating energy use lower than the building's energy use target. This approach is limited to six common occupancies, including office and education.

Identification of Additional Energy Efficiency Features to be Considered for the Next Energy Code

In 2014, the SBCC will be facilitating a discussion of possible energy code measures that may be incorporated into the next edition of the WSEC. This is the core activity required to implement additional energy efficiency requirements.

The existing structure of the energy code requires building designs to include specific prescriptive efficiency features or propose an equivalent alternative. Alternative compliance methods range from simple lighting power calculations to total building energy modeling. Additional reductions in energy use are incorporated in code by implementing more efficient prescriptive elements, or by modifying the application of alternative compliance options.

The work plan will include developing a range of options to be considered for the aspirational energy code, as well as the next edition of the energy code. The options will likely be sourced from other state and national energy codes, utility programs, national engineering organization publications, and the local engineering community. The SBCC process will provide recommendations for further study, and begin to assess cost and benefits of the application of revising the code. Beginning the process in 2014 provides additional time to fully develop proposals prior to the next code development cycle.

Funding for Energy Code Development

The principal activity of the SBCC staff is to facilitate detailed rulemaking activities. This includes support for numerous technical advisory group meetings, as well as final rulemaking facilitation. This is funded by a small charge on local building permit fees. HB 1618 requested an increase in fees to cover the anticipated SBCC workload, which has increased to in part due to the energy code development activities.[21]

[21] Washington State Legislature HB 1618, 2013-14, *Concerning the building code council account.* The bill amends RCW 19.27.085 to increase the building permit fees charged under that section from $4.50 for each residential unit, to $5.50 per residential unit and raise commercial building permit fees from $4.50 to $8.00. This is estimated to increase the SBCC funding by approximately $174,000.

Energy code technical development is largely performed by in-kind contributions from utilities, municipal governments, and building professionals. Hundreds of hours are contributed to the development of the state energy code. This includes energy efficiency research, the development of code content, and the detailed cost benefit analysis adopted by the SBCC. It is important to note that state government contributes only a small amount of staff time to the development of the Energy Code.

Creating Demand for Building Efficiency through Energy Use Disclosure

The goal of energy use disclosure is to create a market-based demand and competition for energy-efficient buildings. By making building energy performance information universally available and accessible, energy use can be considered during the sale or rental of properties. Tracking energy use also provides building owners with information they need to improve the performance of their properties.

Disclosure of a building's energy use at time of sale or lease can impact the value of the property. When market participants are aware of the building energy performance, the value can be considered during the transaction. A number of market studies have shown that buildings with above average energy performance will have higher occupancy rates, can have higher rents, and will sell at a higher price.[22] This encourages building owners to improve energy performance.

Participation in energy benchmarking programs can reduce energy use. A recent analysis by the U.S. Environmental Protection Agency (EPA) showed that commercial buildings that participate in their energy benchmarking program save, on average, 7 percent in energy over three years of participation.[23] An evaluation of Puget Sound Energy's "Home Energy Reports" demonstrated residential energy use reductions of 2.8 percent for electricity and 1.3 percent of gas when the occupant received reports comparing their energy use to their neighbor's.[24]

For commercial buildings, including large multi-family occupancies, benchmarking is the most common means for implementing a building energy disclosure policy. Benchmarking creates a record of annual energy use for the building. The energy use is then compared to buildings with similar professional activities and occupant density, as a means of judging performance. For commercial buildings, this activity is most commonly reported using Portfolio Manager, a web platform developed by the EPA.

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[22] A Better City and Meister Consultants Group, *Benchmarking and Disclosure: Lessons from Leading Cities,* Boston Green Ribbon Commission's Commercial Real Estate Working Group, June 2012. http://www.abettercity.org/docs/06.2012%20-%20Benchmarking%20report%20-%20Final.pdf

[23] U.S.EPA, *Portfolio Manager Data Trends*, October 2012. http://www.energystar.gov/buildings/sites/default/uploads/tools/DataTrends_Savings_20121002.pdf?4b4d-6ef7

[24] Kima*, Puget Sound Energy's Home Energy Reports, 2012 Impact Evaluation,* March 2013.

For single family homes, policies requiring utility bill disclosure have been implemented in three states. Sellers or landlords in these jurisdictions are required to provide utility bill data to prospective buyers or renters.[25] Utility programs are also using energy comparisons to encourage customer energy conservation.

Commercial Building Benchmarking and Disclosure

Washington State adopted benchmarking as a requirement for commercial building transactions. RCW 19.27a.170 requires that building owners provide energy use disclosure when buildings are offered for sale, lease, or when being financed. Beginning in 2012, this rule applies to commercial buildings greater than 10,000 square feet in floor area.

We cannot assess compliance with Washington's energy disclosure law. Because disclosure is limited to the two parties involved in the transaction, there is no way of tracking activity or impacts. The law does not specify reporting to a government agency, nor does it include fines. There is evidence that this law has some impact, but no strong evidence that it is complied with broadly.

In contrast to Washington's experience, jurisdictions with government reporting criteria have been able to create benchmarking reports summarizing the implementation of their policies. New York City, for example, has just published their third benchmarking report for the private sector. This year they added multi-family buildings to their reporting.[26] Approximately one million New Yorkers can now see how much energy and water their apartment buildings consumed in 2012. It is anticipated Seattle will publish an aggregated report of benchmarking results early in January 2014.

Nine major cities and two states in the United States have passed policies requiring benchmarking and disclosure for large buildings. This includes Seattle's energy benchmarking and reporting ordinance. The jurisdictions have approached the concept of disclosure more broadly than State of Washington, and also included penalties for non-participation.[27]

- Ten of the jurisdictions require reporting the benchmarking data to a government agency.
- Annual reporting is required by eight of the jurisdictions.
- Two jurisdictions, including Seattle, will aggregate benchmarking data and create public reports.
- Seven jurisdictions will post each buildings energy use data on a public website.
- Nine of the benchmarking jurisdictions have enforcement provisions that include fines.

[25]Cluett, Rachel, Amann, Jennifer, *Residential Energy Use Disclosure: A Review of Existing Policies, American Council for an Energy-Efficient Economy*, April 2013.
[26] New York City Local Law 84 Benchmarking Report. September 2013.
[27]Building Rating Organization, U.S. Policy Briefs, http://www.buildingrating.org/content/us-policy-briefs

Utility Role in Benchmarking

RCW 19.27A.170 requires utilities with more than 25,000 customers to provide a supporting role in the implementation of the law. Upon request, the utility "shall upload the energy consumption data for the accounts specified by the owner or operator for a building to the United States environmental protection agency's energy star portfolio manager."

Utilities in Washington will provide the historic utility billing data to their customers upon request. In most cases this is a paper report or simple spreadsheet with the customer energy use and cost data. Until recently, few have accommodated automated uploads to the EPA web site.

Automated benchmarking data entry assures that benchmarking accounts are kept up to date. It reduces participant cost by eliminating manual entry of monthly utility data. This approach has been demonstrated to increase continued participation in benchmarking programs.

In July 2013, EPA implemented a new version Energy Star Portfolio Manager. In part, they revised the program to improve implementation of Automated Benchmarking Services (ABS). ABS allows utilities to upload customer utility billing data directly to customer benchmarking accounts. By the end of January 2014, Commerce anticipates four large Washington utilities will have implemented this approach, enabling automated benchmarking for the majority of Washington gas and electric utility customers.

The National Association of Regulatory Utility Commissioners has issued the "Resolution on Access to Whole-Building Energy Data and Automated Benchmarking".[28] In this document they recognize the need to make whole building energy use available to building owners and provide a framework for utility participation.

Washington State Government Building Benchmarking

RCW 19.27A.190 requires state agencies, colleges, and universities to benchmark their buildings in Energy Star Portfolio Manager. It requires the state Department of Enterprise Services to post the results for public viewing. In 2011, individual institutional reports were posted to the Enterprise Services website, providing at least one year of data for hundreds of state facilities. Agencies have not consistently participated in this process. Executive Order 12-06 emphasized the need to keep these reports up to date, and agencies have increased participation as a result.

[28] National Association of Regulatory Utility Commissioners, *Resolution on Access to Whole-Building Energy Data and Automated Benchmarking*, July 2011. http://www.naruc.org/Resolutions/Resolution%20on%20Access%20to%20Whole-Building%20Energy%20Data%20and%20automated%20Benchmarking.pdf

Washington State University Energy Program (WSUEP), using funds from the U.S. Department of Energy are developing benchmarking service for state agencies. This pilot project has allowed WSUEP to provide ongoing benchmarking services to four state agencies. This includes the departments of Fish and Wildlife, Health, Social and Health Services, and Veterans Affairs. The project will assess the cost of providing professional benchmarking services to agencies. The program has brought over 5 million square feet of state buildings into the benchmarking system. It is expected to improve the quality of benchmarking and provide more actionable reporting for agencies. This project will continue through September of 2014.

Residential Energy Bill Disclosure

In the *2012 Washington State Energy Strategy*, [29] Commerce recommended development of residential energy bill disclosure to be used at time of sale or when renting a property. This policy proposes annual energy use summaries be made available to all residential utility customers. At time of sale, or when a property is offered for rent, the annual energy use summary would be disclosed to prospective buyers or renters. Energy bill disclosure was the chosen policy because, compared to other home energy assessments, it can be delivered at the lowest cost. For a home buyer considering multiple properties, the energy use history provides valuable information during the transaction.

Improving Access to Capital for Energy Efficiency Projects

The 2011 Strategic Plan identified capital access as a significant barrier to energy efficiency in buildings, and recommended the state examine ways to increase financing opportunities in this sector. The plan called for evaluation of financing mechanisms rather than implementation of any specific approach and rated financing as a medium priority area of focus.

Since 2011, Commerce has had the opportunity to implement energy efficiency financing mechanisms in the state because of the Legislature's decision in 2009 to allocate $5 million of the state's federal Recovery Act funds to new financing mechanisms in support of energy efficiency in buildings. The credit enhancement funds were awarded to six Washington organizations: Avista Utilities, City of Bellingham, City of Seattle, SustainableWorks, Thurston Economic Development Council, and Washington State Housing Finance Commission.

The loan programs relied on two credit enhancement mechanisms: loan loss reserves and interest rate buy downs. With either mechanism, all of the money loaned to a building owner is private capital. The loan programs supported by credit enhancement mechanisms reduce the lender's risk of default. Part or all of a lender's loss is compensated from the reserve fund if a borrower defaults.

[29] Washington State Department of Commerce, *2012 Washington State Energy Strategy With Forecasts 2012-2035*, 2011. http://www.commerce.wa.gov/Documents/EO2012WAEnergyStrategy.pdf

- The loan loss reserve may allow a lender to make loans that it would not make under its standard underwriting guidelines, broadening the pool of eligible borrowers, enabling a longer repayment period, or lowering the interest rate.
- The interest rate buy down mechanism is a more straightforward subsidy of the loan. Public funds are used to pay some portion of the interest payments. With lower loan payments, a retrofit project is more likely to yield positive cash flow to the building owner. It may also enable building owners to finance larger retrofit projects.

The initial expectations for the credit enhancement programs were that they would yield roughly $40 million of energy efficiency lending in the first three years of operation. However, all of the programs found that building owners remained reluctant to use program loans, even with improved credit terms. This was especially true in the commercial and nonprofit sectors. SustainableWorks, a nonprofit organization that operates community-oriented residential energy efficiency programs in Puget Sound and the Spokane area, and Puget Sound Cooperative Credit Union (PSCCU) achieved the hoped-for leverage, producing almost $6 million of energy efficiency loans and leveraging about $8 of private sector lending for every $1 of public credit enhancement funds. The aggregate lending by all six programs during the first three years was $13.6 million.

Recommendations

Energy Code

The Washington State Energy Code is in good shape. As noted in this report, Washington is a national leader in this area and ranked in the top three for energy code adoption and implementation. Challenges remain in continuing to develop additional efficiency through codes. With this in mind, we offer the following recommendations.

Cost and Benefit Analysis

Improving the energy code will become more difficult if we continue to simply use traditional code implementation methods and related cost and benefit calculations. The following recommendations support advancing the code through the introduction of new methodologies and funding.

- Identify state funding for the cost and benefit analysis. It is fortunate that Northwest Energy Efficiency Alliance (NEEA) has been able to provide financial support for this analysis in the past. However, they are seen as an advocate for energy efficiency rather than an independent third party. The Washington State Building Code Council (SBCC) and Commerce should identify funding and manage experts to complete this essential rulemaking activity.
- The cost and benefit evaluation of outcome-based energy codes will require a new approach. This will require an assessment of benefits of a more flexible approach compared to the potential cost of providing lower energy buildings.
- The current cost and benefit analysis is focused on cost and benefits to the building owner or occupant. An alternate assessment could be made to document additional benefits to society as a whole. This could include the benefits created by avoiding the need to construct new electrical energy generating resources or incorporating the social cost of carbon[30] in the assessment.

Washington State Energy Code Compliance Studies

- Identify funding and complete a commercial building energy code compliance study. This is an outstanding obligation with respect to conditions for accepting federal ARRA funding.
- We need to improve commercial building energy compliance, particularly for the commercial lighting provisions. To improve compliance, examine alternative inspection

[30] Federal Government rulemakings have recently included the social cost of carbon in their life cycle cost analysis. This cost assessment method is detailed in *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866,* May 2013. http://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf

processes for commercial building lighting systems. This could include third-party inspection, enhanced commissioning process, or by assigning the task to state Department of Labor and Industries electrical inspectors.

Funding for Energy Code Development

Identify funding to support energy code development. The current in-kind funding method for code development services may not provide enough support to reach the state efficiency goals. It results in a rather ad-hoc code development process that does not provide comprehensive solutions. Making independent third-party consulting services available to the SBCC would be beneficial in creating a more comprehensive approach to advancing the code.

Building Energy Use Disclosure

To create a transparent market for energy efficient commercial properties, we make the following recommendations.

Revise the Washington State Commercial Benchmarking and Disclosure Law to:

- Require annual benchmark reporting to government. This improves quality and encourages ongoing energy management.
- Add multi-family apartments to the scope.
- Provide exemptions for industrial properties.
- Create a public reporting framework. Choose between public disclosures of individual building energy use or aggregated reporting that provides useful comparisons.
- Include an enforcement provision with fines for non-participation.

- Work with utilities to enable whole-building access to consumption data and automated data uploading. Support utilities in recovering costs and earning efficiency credit for data access.
- Provide adequate funding for the government role. This includes government support for training, outreach, reporting, and enforcement.

Create Residential Energy Bill Disclosure Requirements

Annual energy bills should be available to all residential utility customers at time of sale or when a property is offered for rent. The annual energy use summary would be disclosed to prospective buyers or renters. For sellers who want to demonstrate recent improvements in housing, a home energy audit can supplement the energy bill disclosure. The following actions would help achieve this:

All housing units – An annual energy report is provided to all consumers statewide by the serving gas or electric utility. The annual energy report includes energy use and costs. The reporting format is made consistent statewide to facilitate report comparisons.

- Housing for sale or rent – The most recent annual energy report is disclosed to prospective buyers or renters.
- For existing homes that do not have a billing history or that would like to demonstrate home energy improvements – Provide a uniform state standard for disclosure using a detailed home energy audit.
- Develop a compliance assurance method consistent with existing real estate transaction requirements.

Improving Access to Capital for Energy Efficiency Projects

Policy makers in Washington continue to believe that the state should use financing to support energy efficiency in buildings. In 2013, Governor Inslee and the Legislature allocated $15 million of state funds to create the Clean Energy Revolving Loan Fund. Commerce awarded these funds to two lenders, Craft3 and PSCCU, to be matched with private capital and used to make loans for energy efficiency and renewable energy projects in Washington. The loan programs target residential and commercial building owners and build on the experience gained by Craft3 and PSCCU in the credit enhancement program discussed above. In addition, these loans support other commercial energy projects such as anaerobic digesters or other clean energy technologies.

A central purpose of the credit enhancement and loan programs sponsored by the state is to build the confidence of commercial lenders through more experience with clean energy loans. Energy projects have different financial characteristics than the assets that are typically financed by banks and credit unions, particularly in the residential sector. As the overall portfolio of energy loans increases, lenders will better understand the risk characteristics of these loans. A large portfolio of loans with similar characteristics also improves access to secondary capital in the larger financial market, thereby lowering financing costs for future borrowers.

Commerce will also continue to explore alternative mechanisms to increase access to capital for energy projects. The loan mechanisms described above are unlikely to achieve the desired penetration in every market segment. Rental properties, whether commercial or residential, remain a challenge for financing. On-bill financing mechanisms and energy conservation "purchased power" agreements appear to be promising approaches, and Commerce will look for opportunities to encourage their implementation in Washington.

Under an energy conservation "purchased power," "pay for performance," or "metered energy efficiency transaction structure" agreements utilities would make periodic payments based on metered energy use reductions. This is in contrast to current programs that pay for specific energy efficiency measures at the time they are installed. With this structure, utilities are assured they are provided continued energy savings over time. As a result, they are able to provide higher incentive payments.

Energy conservation "purchased power" agreements closely aligned with other recommendations in this report. This includes outcome based codes, utility incentives supporting an aspirational code, commercial building benchmarking and disclosure. All of these policies support reporting and implementing energy efficiency based on measured reductions in energy use. The "purchased power" agreement is the method of recognizing these outcomes through utility incentives. In 2014 Commerce will be supporting additional investigation into the implementation of performance based utility incentive structures.

Enabling Net-Zero Energy Buildings

A net-zero energy building is a building which, on an annual basis, uses no more energy than is provided by the building's on-site renewable energy sources. Designers first implement energy efficient design and technology solutions to the building to reduce the loads – making the building net-zero ready. Then renewable energy systems are added that are capable of meeting remaining loads. Washington State has several notable examples of net-zero energy buildings. This includes the Bullitt Center, a six-story 50,000 square-foot office building in Seattle, and zHome, a 10 unit townhome in Issaquah.[31]

Net-zero design criteria maximizes the implementation of energy efficiency. In most cases, efficiency design and technologies are less expensive than the purchase of renewable energy equipment. As a result, efficiency comes first. Numerous projects demonstrate very low energy use can be accomplished. Federal Center South, a 209,000 square foot office building, uses about 1/3 the energy of most recently constructed office buildings.[32] Fire Station 72, built by the City of Issaquah, reduces energy use to about 1/3 of that used by the typical fire station.[33] The offices of architects Rice Fergus Miller have demonstrated that net-zero ready is an achievable goal for major renovations.[34]

Within the public sector, net-zero schools may be most adaptable to net-zero energy strategies. A study completed by the National Renewable Energy Lab identified educational institutions as one of the leading candidates for net-zero energy buildings.[35] This study analyzed the opportunity to achieve net-zero energy across the building sector. Only warehouse, big box retail, and religious facilities are more adaptable than education facilities. Schools were determined to be very capable of attaining net-zero criteria because the energy saving design and the technologies are readily available, and the area needed to implement renewable energy systems is typically available on school sites.

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[31] Bullitt Center, http://www.bullittcenter.org/, zHome, http://www.z-home.org/
[32] Federal Center South, http://www.wbdg.org/references/cs_fcsb1202.php
[33] 2013 ASHRAE Technology Award Case Study, *Fire Station Rescue*, ASHRAE Journal, September 2013, p. 58.
[34] Northwest Energy Efficiency Council, *Member Project Spotlight: Rice|Fergus|Miller-Office Building* http://www.neec.net/news/member-project-spotlight-ricefergusmiller-office-building
[35] Griffith, B. et al, Assessment of the *Technical Potential for Achieving Net-Zero Energy Buildings in the Commercial Sector*, National Renewable Energy Lab, Golden, 2008.

Schools have been developed that achieve net-zero energy in most climates in the U.S.[36] Washington schools have already demonstrated the ability to move toward net-zero. The Office of Superintendent of Public Instruction report, *High-Performance School Buildings 2012*, provides reference to schools in Bellingham and Camas that have Energy Star scores above 95.[37] These buildings are likely net-zero ready.

The examples above achieved low energy use because it was an included design intent. The building owners set specific energy end use targets and carried them through the design-build process. After the buildings are completed, owners and occupants must collaborate to assure energy use targets are achieved. The following recommendations establish the unit of measure needed to move to net-zero buildings. The primary mover is the establishment of specific design targets for energy use.

Establish Energy Use Per-Square-Foot (EUI) Targets for New Buildings and Major Renovations by Building Type

This effort further clarifies the energy code targets. RCW 19.27a.160 states that by "2031 state energy code must achieve a 70 percent reduction in annual net energy consumption, using the adopted 2006 Washington state energy code as a baseline". By moving from a "percent better" to an "energy use per square foot" the targets are clarified. This effort supports the development of design criteria for outcome based codes, performance based design-build contracting and net-zero ready design criteria.

Commerce will be seeking partnerships and funding to assist in the development of EUI based building targets specific to the State of Washington.

Develop and Implement Solar-Ready Design Criteria

A small investment during the design phase of a project can prepare buildings for future application of solar energy systems. Solar ready designs designate space for solar equipment to assure that this space is kept free from obstructions. The structure is reviewed to assure it can accommodate the solar and electrical equipment in the future. This approach is very low cost and will reduce the cost of solar installations in the future.

Commerce is currently leading a U. S. Department of Energy funded project, Rooftop Solar Challenge II. This project brings together state and local government in Oregon and Washington to develop and implement streamlined permitting of solar projects and consider the application of solar ready criteria.

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[36] New Buildings Institute*, Getting to Zero 2012 Status Update: A First Look at the Costs and Features of Zero Energy Commercial Buildings,* Vancouver, 2012.

[37] Washington State Office of Superintendent of Public Instruction, *High-Performance School Buildings 2012*, Washington State, Olympia, October 2012, page 17.

For Public Buildings, Implement Energy Use Per-Square-Foot (EUI) Targets

Washington State's green building standards, RCW 39.35D, requires all state-funded projects with buildings over 5,000 square feet to be designed, constructed, and certified to at least a LEED silver standard. Under this recommendation, the LEED requirements would be modified to include a EUI target by building type. The LEED standard has provided uneven results with respect to energy conservation. Compared to the 2012 WSEC it is somewhat out of date. This would establish specific EUI performance criteria for state funded buildings. We recommend that this begin with the development of EUI targets for the most prevalent building types funded through the state capital budget.

Appendix A: Relevant Statutes

RCW 19.27A.150 Strategic plan — Development and implementation.

(1) To the extent that funding is appropriated specifically for the purposes of this section, the department of commerce shall develop and implement a strategic plan for enhancing energy efficiency in and reducing greenhouse gas emissions from homes, buildings, districts, and neighborhoods. The strategic plan must be used to help direct the future code increases in RCW 19.27A.020, with targets for new buildings consistent with RCW 19.27A.160. The strategic plan will 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.

(2) The department of commerce must complete and release the strategic plan to the legislature and the council by December 31, 2010, and update the plan every three years.

(3) The strategic plan must include recommendations to the council on energy code upgrades. At a minimum, the strategic plan must:

(a) Consider development of aspirational codes separate from the state energy code that contain economically and technically feasible optional standards that could achieve higher energy efficiency for those builders that elected to follow the aspirational codes in lieu of or in addition to complying with the standards set forth in the state energy code;

(b) Determine the appropriate methodology to measure achievement of state energy code targets using the United States environmental protection agency's target finder program or equivalent methodology;

(c) Address the need for enhanced code training and enforcement;

(d) Include state strategies to support research, demonstration, and education programs designed to achieve a seventy percent reduction in annual net energy consumption as specified in RCW 19.27A.160 and enhance energy efficiency and on-site renewable energy production in buildings;

(e) Recommend incentives, education, training programs and certifications, particularly state-approved training or certification programs, joint apprenticeship programs, or labor-management partnership programs that train workers for energy-efficiency projects to ensure proposed programs are designed to increase building professionals' ability to design, construct, and operate buildings that will meet the seventy percent reduction in annual net energy consumption as specified in RCW19.27A.160;

(f) Address barriers for utilities to serve net-zero energy homes and buildings and policies to overcome those barriers;

(g) Address the limits of a prescriptive code in achieving net-zero energy use homes and buildings and propose a transition to performance-based codes;

(h) Identify financial mechanisms such as tax incentives, rebates, and innovative financing to motivate energy consumers to take action to increase energy efficiency and their use of on-site

renewable energy. Such incentives, rebates, or financing options may consider the role of government programs as well as utility-sponsored programs;

(i) Address the adequacy of education and technical assistance, including school curricula, technical training, and peer-to-peer exchanges for professional and trade audiences;

(j) Develop strategies to develop and install district and neighborhood-wide energy systems that help meet net-zero energy use in homes and buildings;

(k) Identify costs and benefits of energy efficiency measures on residential and nonresidential construction; and

(l) Investigate methodologies and standards for the measurement of the amount of embodied energy used in building materials.

(4) The department of commerce and the council shall convene a work group with the affected parties to inform the initial development of the strategic plan.

RCW 19.27A.160 Residential and nonresidential construction — Energy consumption reduction — Council report.

(1) Except as provided in subsection (2) of this section, residential and nonresidential construction permitted under the 2031 state energy code must achieve a seventy percent reduction in annual net energy consumption, using the adopted 2006 Washington state energy code as a baseline.

(2) The council shall adopt state energy codes from 2013 through 2031 that incrementally move towards achieving the seventy percent reduction in annual net energy consumption as specified in subsection (1) of this section. The council shall report its progress by December 31, 2012, and every three years thereafter. If the council determines that economic, technological, or process factors would significantly impede adoption of or compliance with this subsection, the council may defer the implementation of the proposed energy code update and shall report its findings to the legislature by December 31st of the year prior to the year in which those codes would otherwise be enacted.

RCW 19.27A.170 Qualifying utilities — Maintenance of records of energy consumption data — Disclosure.

(1) On and after January 1, 2010, qualifying utilities shall maintain records of the energy consumption data of all nonresidential and qualifying public agency buildings to which they provide service. This data must be maintained for at least the most recent twelve months in a format compatible for uploading to the United States environmental protection agency's energy star portfolio manager.

(2) On and after January 1, 2010, upon the written authorization or secure electronic authorization of a nonresidential building owner or operator, a qualifying utility shall upload the energy consumption data for the accounts specified by the owner or operator for a building to

the United States environmental protection agency's energy star portfolio manager in a form that does not disclose personally identifying information.

(3) In carrying out the requirements of this section, a qualifying utility shall use any method for providing the specified data in order to maximize efficiency and minimize overall program cost. Qualifying utilities are encouraged to consult with the United States environmental protection agency and their customers in developing reasonable reporting options.

(4) Disclosure of nonpublic nonresidential benchmarking data and ratings required under subsection (5) of this section will be phased in as follows:

(a) By January 1, 2011, for buildings greater than fifty thousand square feet; and

(b) By January 1, 2012, for buildings greater than ten thousand square feet.

(5) Based on the size guidelines in subsection (4) of this section, a building owner or operator, or their agent, of a nonresidential building shall disclose the United States environmental protection agency's energy star portfolio manager benchmarking data and ratings to a prospective buyer, lessee, or lender for the most recent continuously occupied twelve-month period. A building owner or operator, or their agent, who delivers United States environmental protection agency's energy star portfolio manager benchmarking data and ratings to a prospective buyer, lessee, or lender is not required to provide additional information regarding energy consumption, and the information is deemed to be adequate to inform the prospective buyer, lessee, or lender regarding the United States environmental protection agency's energy star portfolio manager benchmarking data and ratings for the most recent twelve-month period for the building that is being sold, leased, financed, or refinanced.

(6) Notwithstanding subsections (4) and (5) of this section, nothing in this section increases or decreases the duties, if any, of a building owner, operator, or their agent under this chapter or alters the duty of a seller, agent, or broker to disclose the existence of a material fact affecting the real property.