

Proposed Changes to the Draft OGWC Biennial Report to the Legislature 11/22/2020

Existing Recommendations

- 10) **Continue to pursue Cap and Trade legislation.** Putting a price on carbon corrects underlying market failures by including the external costs of GHG emissions and their contribution to climate change. Carbon pricing reduces GHG emissions **efficiently at a lower cost than source- and sector-based mandates for technologies or processes** while encouraging the creation of good jobs in the clean energy sector. While DEQ can cap emissions, they do not have the authority to hold auctions to generate revenue that could be used to assist low-income Oregonians, protect EITE businesses, reduce emissions in uncapped sectors, and/or address the impacts of climate change.
- 11) **Create a state-sponsored “Green Bank” and use the state’s bonding capacity to incentivize private investment in clean technologies and natural climate solutions.** Green Banks are a specialized financial entity that can work with the private sector to create an efficient, reliable and self-sustaining mechanism to achieve GHG reduction goals. A state-sponsored Green Bank is an innovative business model that would increase the availability of capital for the deployment of green technologies as well as projects that increase sequestration on natural and working lands (NWL) by leveraging private sector capital. Unlike grant or incentive payments, Green Bank funds would be invested at or near market rates, ensuring that the organization can cover its own costs, while preserving its capital base for continued deployment.

By blending commercial, public, and philanthropic capital, a Green Bank can deliver catalytic finance solutions capable of supporting the implementation of green technologies and NWL-based projects that otherwise may not be completed. Green Banks possess local expertise on market conditions, the policy landscape, finance actors, and development partners, and leverage that expertise to support investment. Green Banks are not depository institutions.

There are over a dozen Green Banks successfully operating in states across the country, such as California, Colorado, Delaware, Hawaii, Maryland, Michigan, New York, Rhode Island and Washington. **The State of Washington’s Clean Energy Fund (established in 2013) uses a third-party non-profit lender to manage the program protecting the state from liability and reducing program management costs. The Washington Legislature has had a strong hand in adaptive management of the program to ensure it is best advancing the state’s goals. Their program has leveraged five dollars from the private sector for every one dollar of public funding invested and advanced \$76 million in clean energy projects by early 2019. The Connecticut Green Bank, the first in the country started in 2011, and its private investment partners have invested over \$1.6 billion in capital for clean energy projects across the state. The state’s investment leveraged six dollars of private capital for every dollar of public funds invested.**

In 2019, House Bill 2808 was introduced to create a Green Bank in Oregon modeled after the successful Washington Clean Energy Fund was developed for consideration in the 2019 legislative session with support from the Association of Oregon Counties. These states mMostly Green Banks focus on clean energy projects; however, **Oregon the Legislature** could focus the activities of an **Oregon Green Bank** on both clean energy projects and **NWL Natural and Working Lands**-based projects as our state offers significant opportunities to achieve GHG emission reductions across its

land base to provide additional benefits to rural Oregon. **The State could use some bonding capacity or federal stimulus funding to start a Green Bank in Oregon.**

22) Establish stronger codes and incentives to reduce GHG emissions in new and existing buildings.

Exponentially increasing the number of low- and zero-emissions buildings is time-sensitive. The longer we wait, the fewer such buildings will populate our communities in the coming decades. An estimated 80 percent of the buildings that will be using energy in 2050 are already in place today; and every new high-emitting building will hamper our ability to reach the state's 2035 and 2050 greenhouse gas reduction goals. (Also see the Waste and Materials Management section below).

The state should establish a goal for achieving a certain percentage of new buildings to be 'net-zero' carbon buildings, meaning that the operation (and ideally construction) thereof is responsible for minimal carbon dioxide emissions, and any remaining emissions are offset by carbon sequestration. Net-zero buildings are designed and equipped so that all their energy use (e.g., for heating, cooling, lighting, appliances, vehicles charging, etc.) is highly efficient and comes from renewable (non-carbon dioxide emitting) energy sources. A statewide definition of zero-emissions building should be developed along with the state goal (e.g., to distinguish if offsets **from onsite generation of electricity** are allowable).

More incentive programs should be established for both existing and new buildings to minimize GHG emissions resulting from operations (e.g., appliances) and building materials. Equipment installed in existing buildings that is failing or near end-of-life should be replaced with "smart"/grid-connected equipment, like **heat pumps smart thermostats** and water heaters, which can be used to integrate renewable resources. Meanwhile, supporting programs, such as net metering and community solar, should be advanced to help increase the number of low- and zero-emissions buildings in the state.

24) Codify the new appliance energy efficiency standards developed by ODOE. In August 2020, as directed in EO 20-04, ODOE submitted final rules for appliance energy efficiency standards. Notably, these include the requirement that all electric water heaters manufactured on or after January 1, 2022 and sold in Oregon include a common communication port to enable grid-connectivity. Grid-connected devices—such as water heaters, that customers can voluntarily enroll into demand response programs—are critical tools that will help achieve Oregon's GHG reduction targets because they promote smarter energy use and support integrating **variable** renewable resources onto the **electric energy** system. The Oregon State Legislature should pass legislation putting the new appliance energy efficiency standards in statute in the 2021 Legislative Assembly. The Legislature and the ODOE should continue to update appliance standards and building codes to maximize energy efficiency and reduce GHG emissions.

25) Mandate that 100 percent of the state's electricity comes from carbon neutral energy sources by 2045 or 2050. There is growing interest in transforming electrical generation to be 100 percent emissions free. Since 2018, California, Colorado, Maine, Nevada, New Mexico, New York, Puerto Rico, and Washington legislatures have all passed bills aimed at making their state's electricity sector carbon free by 2045-2050. A 100 percent clean electricity grid can help build a clean energy system **through electrification of end-use demand (e.g., heating and transportation), and that could include** producing fuels from electricity like hydrogen and synthetic natural gas.

Achieving 100 percent carbon free or an ambitious carbon neutral goal will require a strong eye toward maintaining resource adequacy, reliability, and affordability. Diverse strategies that include continuing energy efficiency; increased deployment of clean electricity generation, storage, and transmission infrastructure; market reforms, and significant investment in emerging technologies like carbon capture and sequestration for natural gas-powered facilities, long term storage, and zero carbon fuels such as renewable hydrogen.

The Commission supports legislation aimed at getting Oregon's electrical supply to as close to a 100 percent zero-carbon as feasible recognizing that the last 10 to 20 percent will be challenging. This may require the use of resources that are sometimes identified as carbon neutral, but are not carbon free such as biomass, renewable natural gas and renewable hydrogen. If the legislature allows some resources that are carbon neutral, it will be important that the carbon neutral resources be determined on scientifically sound life cycle analyses.

Legislators, ODOE and/or the Northwest Power and Conservation Council will also need to consider and adaptively manage environmental, economic, and community factors that should be considered in determining how much new renewable generation can and should be built in state; barriers to building new transmission facilities; and challenges associated with modernizing smart grid with non-wire alternatives, including distributed energy.

25) Mandate that 100 percent of the state's electricity come from carbon neutral energy sources clean (zero emitting) energy sources. There is growing interest in transforming electrical generation to be from 100 percent zero-carbon dioxide emitting sources of energy. Since 2018, California, Colorado, Maine, Nevada, New Mexico, New York, Puerto Rico, and Washington legislatures have all passed bills aimed at making their state's electricity sector carbon free by 2045-2050, **and the incoming Biden administration has identified 2035 as its target for eliminating emissions from the electric sector. Setting Oregon's sites on 100 percent zero-carbon goal for 20405 or 2050 while maintaining adequacy and reliability of the electric sector provides the right level of long-term ambition.** Setting Oregon's sites on 100 percent zero-carbon goal for 20405 or 2050 while maintaining adequacy and reliability of the electric sector provides the right level of long-term ambition. A 100 percent clean electricity grid can help build a clean energy system through electrification of end-use demand (e.g., heating and transportation), and producing fuels from electricity like hydrogen and synthetic natural gas.

Achieving 100 percent carbon free or an ambitious carbon neutral goal will require a strong eye toward maintaining resource adequacy and reliability and diverse strategies that include continuing energy efficiency improvements; increased deployment of clean electricity generation, storage, and transmission infrastructure; market reforms, and potentially investment in emerging technologies like carbon capture and sequestration for natural gas-powered facilities.

The Commission ~~supports legislation aimed at getting Oregon's electrical supply to as close to a 100 percent zero-carbon electricity as feasible~~ recognizes that **eliminating** the last 10 percent of **GHG emitting energy sources by 2040 may will** be challenging. Legislators, ODOE and/or the Northwest Power and Conservation Council will need to consider and adaptively manage: environmental, economic, and community factors that should be considered in determining how much new renewable generation can and should be built in state; barriers to building new

transmission facilities; and challenges associated with modernizing smart grid with non-wire alternatives, including distributed energy.

New Recommendations

A. The Public Utility Commission (PUC) should open a docket to assess the future of fossil “natural” gas in Oregon. Natural gas is the second largest source of emissions in Oregon, and emissions from natural gas use are only expected to rise in the absence of additional direction from the PUC or legislature. Oregon must transition off natural gas in order to meet its climate goals, and to ensure that ratepayers, especially low-income people, are not burdened with stranded assets as customers switch to electric options. Further, residential use of natural gas appliances poses health risks, with the potential to expose people to harmful indoor air pollution. The PUC should open a proceeding to assess the future role of natural gas in Oregon, including how it fits into achieving the state’s mandatory greenhouse gas reduction goals, impacts of further development of natural gas infrastructure, and considerations for low-income ratepayers.

B. Allow cities and counties to adopt the state Reach Code as the mandatory base code for buildings in their jurisdiction. Largely driven by local climate action goals, cities and counties are increasingly looking for ways to advance energy efficiency in buildings being constructed in their jurisdiction. The state Reach Code is a set of *optional* construction standards designed to increase the energy efficiency of buildings above the mandatory statewide building code. But, cities and counties cannot currently require new buildings be built to the Reach Code standards. They instead rely on individual developers voluntarily choosing to build to Reach Code standards, resulting in a limited patchwork of buildings being built to more efficient standards.

Allowing cities and counties to adopt the state Reach Code as the mandatory base code in their jurisdiction would ensure all new buildings in their jurisdiction are being built to more energy efficient standards. More energy efficient buildings will not only reduce greenhouse gas emissions, but also provide a number of other benefits including savings on utility bills and healthier and more comfortable spaces to live and work. It is also much more cost effective to build more energy efficient buildings from the start than to retrofit existing buildings.

C. Adopt Existing Building Audit and Retrofit Carbon Code. The Legislature should direct the Building Codes Division to develop and adopt a code for retrofitting existing structures consistent with the directions below. Alternately, the Legislature could authorize jurisdictions larger than 600,000 population to develop and adopt such a code, which other jurisdictions could adopt also (without modification, to maintain code consistency from jurisdiction to jurisdiction).

All pre-existing structures with an area of (20,000 sq ft in 2021, dropping to 10,000 sq ft by 2030 and 5,000 sq ft by 2035) or greater should be subject to an energy efficiency audit not less often than every five years, together with recommissioning of the structures’ HVAC and lighting systems. The audit should encompass other GHG’s present (e.g., HFC’s used in refrigerants in HVAC systems). The audit should include potential for retrofitting conduit into associated structural or surface parking to support EV charging. Following the audit, a building owner should be obliged to retrofit all cost-effective¹ (including Social Cost of Carbon) measures and equipment. Additionally,

¹ While the utilities and the Energy Trust have cost-effective analytic tools and methodologies, the State should look also to optional analyses that can package together multiple interactive measures to achieve an outcome

at point of property sale or major (>50% by value or square footage) remodel, all pre-existing structures should retrofit all cost-effective (including SCC) measures and equipment. Major retrofit or replacement of HVAC systems and equipment should require a similar cost analysis and upgrade requirement, including replacement of equipment and appliances using fossil-based gas with high efficiency electrical equipment. Code requirements would apply to buildings with rental units. Code may stipulate Net Zero Carbon (NZC) where feasible, or a Carbon Standard (CS) in lieu of an individual cost-effectiveness test for different structures; the CS should reflect a basic calculation, including the SCC, for a size/type of building.

The retrofit code should also stipulate that any new tenant be provided, in advance of executing a lease, with possible energy/carbon efficiency upgrade measures that could be retrofit into the space in question at the time of the transaction, showing expected payback horizons after applying current utility, Energy Trust or other incentives. As with other possible space improvements, these equipment and efficiency investments are thus introduced into lease negotiations.

Financing for retrofit measures should be accessible through the Energy Trust, or using public or utility financing if less costly.

greater than the sum of the parts (for example, lower temperature lighting can permit smaller HVAC replacement equipment). The State is encouraged to consider alternative methodologies such as the National Standards Practice Manual (<https://nationalefficiencyscreening.org/national-standard-practice-manual/>).