



TO: EWEB Commissioners, Mayor and City Council
FROM: Frank Lawson, General Manager
DATE: January 31, 2019
SUBJECT: EWEB Climate Change Policy Introduction
OBJECTIVE: Information Only

Issue

This memo is a summary of EWEB’s Climate Change Policy and the role of electrification for discussion at the February 11, 2019 joint meeting of the EWEB Commissioners and City Council.

Background

As a community-owned municipal utility, EWEB recognizes the importance of local governance and appreciates that our products and services need to reflect the values of our community partners and customer-owners. Our strategic plan¹ focuses EWEB’s near-term efforts on resiliency (including emergency preparedness and recovery) and the reassembly of our power generating portfolio over the next decade.

The execution of this strategy will not sacrifice our “core values”, which provide the fundamental basis for guiding, testing, and/or overruling our policies, actions, behavior, and decisions. These values are unique and sacrosanct; they cannot be compromised for convenience or short-term gain. As reiterated in the strategic plan, *we value the prudent and sustainable stewardship of our customers’ financial and natural resources, including our impact on affordability and role in reducing the greenhouse gases (GHGs) contributing to Climate Change.*

EWEB Board Policy recognizes that climate change presents ongoing environmental, economic and social risk, and that each community, organization, and segment of the population is impacted uniquely. The primary potential direct impacts to EWEB operations from climate change include changes in streamflow – quantity and timing- affecting hydroelectric generation, impacts to water quality and watershed health, changes in consumption patterns, and increasing threats from weather events. The Board recognizes that EWEB, as a water and electric utility, impacts our climate through electric generation resource choices, business practices and the operation and maintenance of our lands, buildings and transportation fleet.

Discussion

Limiting warming to 2°C or less, an objective agreed upon by the international community, will require that global net GHG emissions approach zero by the second half of the 21st century. This necessity will require a reduction in U.S. GHG emissions by 80% below 1990 levels by 2050 and 40% below 1990 levels by 2035², a target commonly referred to as “deep decarbonization”.

Most comprehensive plans for deep decarbonization include foundational improvements in energy efficiency and conservation, low-carbon electricity, electrification, and low-carbon fuels. As an electric utility, EWEB is involved in all of these aspects of deep decarbonization, which provides the basis for our Climate Change

1 EWEB 2017-2020 Strategic Plan, Adopted August 10, 2017, Amended July 10, 2018.

2 Intergovernmental Panel on Climate Change, *5th Assessment Report*, <http://www.ipcc.ch/report/ar5/>

Policy. Additionally, EWEB recognizes that we operate in the context of other energy suppliers and a highly integrated grid and economy. Therefore, our specific role in deep decarbonization must include some external context, such as:

- **Forms of Energy:** Energy comes in multiple forms, and environmental attributes must be evaluated through the entire energy cycle across all forms (e.g. conversion efficiencies, losses)
- **Regional Electricity:** The electric grid is highly integrated, and the carbon impacts of our local decisions must be evaluated on a regional basis.
- **Forward-Looking Models:** Climate change will have impacts on electricity generation and consumption patterns over the next several decades, meaning past patterns will need to be mixed with new with future projections.
- **Timing Matters:** Even with predicted advancements in storage technology, electricity supply and consumption will continue to be synchronized, and the instantaneous dynamics will impact reliability, carbon content, and cost.
- **Peaking:** Energy suppliers make decisions and build systems based on peak demand, not average.
- **Natural vs. Human Dispatch:** Most renewable electricity generation relies on natural dispatch, making it variable and less dependable.
- **Consumer Behavior:** Customer energy choices are made based on perceived value; the relationship between a product's features/benefits and costs.

The aforementioned external context, along with EWEB's Strategic Plan, Organizational Values, and Climate Change Policy all provide guidance for decisions, partnerships, and investments aligned with deep decarbonization. As we continue to evaluate decisions based on their economic, social, and environmental aspects, our climate change work will focus on the following.

- support an **electric power portfolio utilizing low-carbon, renewable resources** to the extent possible and practical without impacting safety or reliability.
- participate in local, state, and regional efforts to encourage, develop and **enact measures to mitigate carbon emissions in the energy sector** that contribute to climate change.
- continue efforts to **reduce the greenhouse gas emissions from EWEB's operations** through the use of the Triple Bottom Line analytical framework, including impacts on the environment and climate.
- **assist customers with their carbon reductions** through technical assistance and resources that support energy efficiency, alternative fuels, electric and water conservation, and smart electrification.
- prepare for and **minimize the effects of climate change that could impact EWEB's** water and electric supply and infrastructure, damaging EWEB's resiliency and reliability.

These aspects of our climate change policy include a robust evaluation of the environmental, social, and economic impacts to all segments of our community. EWEB is coordinating with multiple partners to understand, define, and execute our role in deep decarbonization. We have sponsored, or partnered, on several studies evaluating the impacts of carbon reduction legislation on cost and reliability, including several by Environmental+Economic Energy (E3). In the upcoming years, EWEB will develop an Integrated Resource Plan (IRP) which will guide the selection of future generating resources.

Carbon reduction goals are clear, but the solutions are complex and involve multiple sectors, technologies, partnerships, research, and a plethora of perspectives on regulatory oversight. In the joint meeting of the EWEB Commissioners and Eugene City Council, we look forward to discussing and presenting more information on carbon policy, electrification of transportation (EV's), and other forms of smart electrification.

Recommendation

None at this time. For more information about EWEB's Climate Change Policy, go to <http://www.eweb.org/Documents/documents-publications-policies/board-policies.pdf>



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: EWEB Commissioners, Mayor and City Council
FROM: Jason Heuser, EWEB Public Policy and Government Affairs Program Manager
Frank Lawson, General Manager
DATE: January 31, 2019
SUBJECT: Oregon Legislative Update re: Carbon Policy
OBJECTIVE: Information Only

Issue

This memo is an overview of EWEB’s position and work on carbon cap and trade state legislation for discussion at the February 11, 2019 joint meeting of the EWEB Commissioners and City Council.

Background

The Oregon Legislature is expected to introduce legislation on February 1st in the House and Senate establishing a state carbon cap and trade program. Known as the “Clean Jobs Bill”, the legislation would cap and price greenhouse gas (GHG) emissions and reinvest these proceeds into carbon reduction measures. In 2018, the legislature created the State’s Carbon Policy Office (CPO) within the executive branch, staffed by the Governor’s office and the Oregon Department of Environmental Quality (DEQ). EWEB has been working with the CPO on the development and design of a cap and trade program as it relates to the electricity sector.

Discussion

The proposed Clean Jobs Bill would cap and reduce Oregon’s emissions to 80 percent below 1990 levels by 2050. In response to recent updates in climate science on the importance of emission reductions in the next 10 years, the legislature may consider adopting an interim target to reduce emissions to 45 percent below 1990 levels by 2035.

Regulated sectors of the economy would primarily include Transportation, Energy (electricity and natural gas), and Large Industrial Sources. It is anticipated that the legislation will use a threshold of over 25,000 metric tons of annual CO₂e GHG emissions to determine which entities have a compliance obligation. This compliance threshold targets large emitters, not individuals or small businesses/institutions.

A cap and trade program sets an economy wide emissions cap, but does not cap any individual entity, nor dictate any specific measures they must take. An entity covered by the program must obtain and retire allowances equal to its reported emissions over a given compliance period. Each entity may decide what compliance action is most cost effective, whether to change business practices to reduce emissions or instead choose from a variety of other compliance options. An

entity might acquire allowances issued in state auction, acquire allowances from other entities in a secondary market, receive a distribution of free allowances from the state, or acquire certified carbon offsets from projects in sectors outside of the cap for a portion of their compliance obligation.

Oregon may elect to link its program to the Western Climate Initiative (WCI), comprised of California and the Canadian provinces British Columbia, Manitoba, Ontario, and Quebec. Linkage to the WCI would provide access to a larger carbon market and is expected to support allowance price stability, lower compliance costs, create more flexible carbon reduction options, and streamline compliance for entities operating in multiple jurisdictions.

An important policy issue to be addressed is the concept of ‘leakage’; a term defined as the movement of emissions, economic activity and jobs from a jurisdiction regulating GHG emissions to a jurisdiction not regulating GHG emissions. Leakage creates local economic harm without any broader GHG emission reductions. A primary strategy Oregon is expected to use to address leakage would be the free allocation of allowances to “Energy Intensive Trade Exposed” (EITE) entities on an output basis to mitigate cost shock to these entities while still providing an economic incentive to reduce GHG emissions. The bill would also have a price containment reserve that releases allowances when prices exceed a specified level, as well as a hard price ceiling.

It is anticipated that the Clean Jobs Bill will include strategies to mitigate potential financial impacts on vulnerable communities, including lower-income and rural communities, communities of color, and Tribes. This would be achieved primarily through the reinvestment of proceeds from allowance auctions, known as revenue recycling. Without revenue recycling, the cost to electric ratepayers of meeting an 80 percent reduction target effectively doubles, for example.

Recommendation

None at this time. This will be a complex and critically important piece of legislation that both EWEB and City of Eugene staff will track closely as it’s introduced and debated.



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: EWEB Commissioners, Mayor and City Council
FROM: Juan Serpa Munoz, Business Line Manager, Electrification
Frank Lawson, General Manager
DATE: January 31, 2019
SUBJECT: EWEB Electrification of Transportation Efforts
OBJECTIVE: Information Only

Issue

This memo is a summary of programs and ideas intended to encourage adoption of electric vehicles for discussion at the February 11, 2019 joint meeting of the EWEB Commissioners and City Council.

Background

Electrification of transportation is a major element of global “deep decarbonization” and an important factor to achieving community carbon reduction goals. About 36% of greenhouse gases (GHG) in Oregon come from the transportation sector. Although the time-of-charging impacts the carbon content of the electricity used for charging, much of the region’s electric power comes from carbon-free sources. The ability to charge EVs when there is abundant clean power available on the grid brings potential benefits to the utility, and with the right price signals in place, to customers. The conversion of fossil fuel burning vehicles to electric ones thus presents an opportunity to help meet the State and local climate action goals.

Discussion

While EVs can result in triple bottom line (social, environmental, economic) benefits to customers, education and incentives do impact adoption rates. Through State and Federal action, a cohesive network of charging stations is available along major highways and in our metropolitan areas. EWEB education, rebate and loan programs offer additional support to both residential and commercial customers interested in EV technology. When offering programs, we evaluate the social equity benefits as consideration of the program design. Current EWEB programs include:

Present EWEB Programs

- ***\$300 Clean Ride Rebate*** for the purchase of a new, leased or qualifying used EV to help with the cost of fueling for a year or with the installation of a Level 2 charger. 77 customers took advantage of this rebate in 2018, compared to just 14 the year before and six in 2016 when we introduced a smaller EV rebate.
- ***Commercial loan*** for public and workplace electric vehicle supply equipment.

- Partnering with the University of Oregon and the City of Eugene to provide **rEV UP Eugene! - Educational workshops on EVs**. Attendees qualify for additional markdowns on the purchase of new EV from participating dealerships and an additional \$250 rebate from EWEB.
- **Ride-and-Drive events** in partnership with BRING, Lane Regional Air Protection Agency and Forth Mobility during National Drive Electric Week.

EWEB continues to adjust its programs based on evaluation of participation rates and other research like best practices among other utilities. Some new programs that are being evaluated and/or planned are listed below.

Potential New EWEB Programs

- **Residential charger loan program** to assist EV owners in installing a level 2 charger at home (in addition to the rebate).
- **Rebate for public and workplace charging** (in addition to loan option).
- Pilot project to partner with a multi-family housing agency and Envoy¹ to bring an **EV car-sharing service to a limited income development**.
- Recognizing that the point of sale is a critical touch point to increase EV adoption, a **dealership incentive program** with sales representative education as well as a volume-based incentive for EV sales.
- EWEB is exploring a specialized **EV rate for commercial fleets**, including delivery vehicles, to address the high financial impact of demand charges for large banks of charging stations.

Other, non-incentive based efforts to encourage transportation electrification include the following:

- **Education and awareness campaigns** through our website, social media and events such as the Good Earth Home, Garden & Living Show. For example, information about the \$3,500 manufacturer's suggested retail price reduction for EWEB customers on the purchase of a 2018/2019 Nissan LEAF is on our website.
- Through high-visibility branding, utilizing **EWEB fleet vehicles** to raise public awareness of EV technology. Utility fleet emissions decreased 24% from 2009 levels through high efficiency vehicles like electric hybrids, and increased use of alternative fuels such as ethanol, biofuel, renewable diesel.
- Participating as a credit generator in **Oregon's Clean Fuels Program**. The value of the fuel credits accumulated can be used in support of the EV programs described above.
- EWEB lead the creation of a **regional transportation coalition** that includes eight other utilities in order to leverage knowledge and coordinate resources to develop a more comprehensive transportation electrification approach for our community and region.

The electrification of the transportation sector requires collaboration and support from

¹ Envoy provides on-demand shared electric vehicles to dedicated parking spaces at various locations (hotels, workplace housing complexes, etc). Individuals in these locations can share and use these vehicles through a mobile application. All insurance and vehicle maintenance is handled by Envoy at a monthly cost for the building owner.

government, utilities, manufacturers and other stakeholders. To this end, EWEB is partnering with local and regional entities, including other utilities in the Northwest, Forth Mobility, Electrify America, Plug in America, Lane Council of Governments, Lane Transit District, Lane Regional Air Protection Agency, University of Oregon, Oregon Department of Environmental Quality, Oregon Department of Transportation and City of Eugene. Collaboration with these partners is helping to shape and evolve our efforts, and as the table below shows, is helping influence consumer interest in EV technology.

DMV - Registered EV ²			
Region/Year	2016	2017	End of June 2018
Oregon	13,261	16,252	17,893
Lane County	NA	NA	1,233
EWEB	321	403	744

Based on this data, as of June 2018, approximately 1,400 - 2,400³ metric tons of carbon dioxide equivalent will be reduced in our community per year, with the variables being miles driven, combusted miles per gallon being replaced, and when charging occurs.

Recommendation

None at this time. For more information about EWEB EV programs, go to: <http://www.eweb.org/residential-customers/going-green/electric-vehicles>

² This information is presented by DEQ using DMV data. DEQ will have final 2018 numbers at the beginning of 2019 Q2
³ Assumes 8,000 miles/year, electricity carbon range 0.015 – 0.468 MTCO₂e/MWh, 22MPG combustion



TO: EWEB Commissioners, Mayor and City Council
FROM: Frank Lawson, General Manager
DATE: January 31, 2019
SUBJECT: Smart Electrification
OBJECTIVE: Information Only

Issue

This memo is a general definition of smart electrification for discussion at the February 11, 2019 joint meeting of the EWEB Commissioners and City Council.

Background

Comprehensive plans for deep decarbonization include foundational improvements in energy efficiency and conservation, low-carbon electricity, electrification, and low-carbon fuels. As an electric utility, EWEB is involved in all of these aspects of deep decarbonization, which provides the basis for our Climate Change Policy.

Discussion

Presently, EWEB has activities and programs in all four areas required for deep decarbonization. We design these programs based on social, environmental, and economic benefits for our entire community. For two decades, EWEB has had a robust energy efficiency and conservation program. Over the past few years, while cutting cost in other areas, our energy efficiency department funding has increased. For over a century, the decisions associated with electricity generation have resulted in the assembly of a generation portfolio that has a low average carbon content. And, more recently we've launched incentives intended to leverage the efficiency benefits of electricity, including the "A fossil-free world starts at home" campaign.

Because of the complexities of the energy system, electrification needs to be done in a way that's socially responsible, economically viable, reliable, and produces the intended reduction in carbon without unintended negative consequences. Based on these considerations, EWEB considers smart electrification to have the following characteristics.

Energy Cycle Benefits – Smart electrification will have benefits across society as determined using the entire energy cycle, including acquisition/generation, conversion efficiencies, transmission losses, and end-uses.

Demand Response Capable – The electricity use has the potential to be shifted to more beneficial times, as carbon content, reliability, and cost are all highly dynamic and have regional impacts.

Cost Effective – It is important for the electricity sector to be competitive with other sectors, and maintain affordability in all social-economic sectors. Electrification will be impacted by consumer choice, which generally includes an economic component.

Non-Coincidental Peak – Increases in electric use during seasonal and daily peak times, with little ability to shift, will cause significant investment and will result in little carbon benefit.

Based on these criteria, most electrification of transportation qualifies as smart electrification given the reduction in carbon, and the ability to use electricity at times when carbon content and prices are low. Some industrial processes meet the same qualifications, and some do not, requiring individual assessment of the triple-bottom-line impacts across society. In the case of space heating, the main criteria associated with “smart” is efficiency. Converting from less efficient devices to more efficient devices such that overall energy use is reduced meets the criteria (e.g. inefficient radiant or combustion heat to high-efficient heat pump). However other fuel-switching approaches create little carbon benefit but have the potential for higher cost to the customer and inefficiency and reliability concerns for the utility.

In the joint meeting of the EWEB Commissioners and Eugene City Council, we look forward to discussing and presenting more information on carbon policy, electrification of transportation (EV’s), and other forms of smart electrification.

Recommendation

None at this time. For more information about EWEB’s Climate Change Policy, go to <http://www.eweb.org/Documents/documents-publications-policies/board-policies.pdf>