

Eugene Climate Action Plan 2.0

Buildings and Energy Chapter Meeting Eugene Climate Action Plan

Wednesday, July 11, 2018 • 2–5 pm
University of Oregon, EMU Miller Room
1395 University St, Eugene, OR 97403

Present: Tiffany Edwards, Chamber of Commerce; Jeff Perry and Mike Penwell; City of Eugene; Mike McCann, Juan Serpa Muñoz, Matthew Schroettig, and Eli Volem, EWEB; Roger Ebbage, Troy Hanson, and Luis Maggiori, Lane Community College; Shanna Brownstein, Northwest Natural; Eleni Tsivitz, University of Oregon

Climate Action Plan 2.0 Project Team: Chelsea Clinton, City of Eugene; Brittany Judson, City of Eugene; Jessica Lisiewski, City of Eugene; Ethan Nelson, City of Eugene; Joshua Proudfoot, Good Company

Opening Remarks

Chelsea Clinton gave an overview of the project vision including a review of the core project commitments (Triple Bottom Line, Strategic Doing and Adding Value) and an overview of the project equity initiatives.

Introductions

Participants and community members introduced themselves and provided what they hoped to get out of the meeting or process. Common themes included connecting with each other and across organizations, learning about other endeavors and new ideas, sharing, looking to the future, partnership, best practices for reducing single occupancy vehicle travel, and mapping out our community investments.

CAP 2.0 project goals and process

Chelsea Clinton provided a more detailed overview of the CAP2.0 project including the CRO Goals, 2017 Mayor's CRO Ad Hoc Work Group, core project commitments, equity initiatives, Large Lever Shareholders, CAP2.0 project timeline, and project team.

Equity Discussion

Chelsea Clinton facilitated the discussion. The group discussed the difference between equality and equity. Then the group reviewed the project equity lens. Last, the larger group broke out into smaller groups to share their organization's equity framework.

Discussion of Best Management Practices – facilitated by Josh Proudfoot

Josh Proudfoot presented some Best Management practices (page 3 of agenda).

- Definition of **mitigation vs. adaptation** discussion: Mitigation is reducing greenhouse gas emissions, including buying offsets. Ideally, it's addressing emissions at the source. Adaptation is anticipating changes to come and preparing accordingly.

- Definition of **high impact practices vs. important triple bottom line practices**: High impact practices have system level impacts that have a very high impact on greenhouse gas emissions. Important triple bottom line practices are climate related actions that have a variety of benefits across our community, but have a smaller impact on total greenhouse gas emissions or climate adaptation. Some actions cost more, some actions cost less, and some have cobenefits. For example, rooftop solar has many benefits, but has a lot less GHG reduction potential compared to a large scale utility project. Economies of scale are important. Some investments are more efficient to reduce GHG.

Additional high impact best management practices:

The group brainstormed additional best management practices, and those practices that should be reclassified as high impact practices or triple bottom line practices.

- Jay Ward, Energy Trust of Oregon – behavioral modifications between user of building and building itself
- Juan Serpa Muñoz, EWEB – Education regarding emissions. Industries may not have awareness of what works and does not work and the available technology. Educate on peer facilitates that use best practices for validation.
- Shanna Brownstein, NW Natural – focusing on the city block level instead of the building level. More efficient practices if implemented at the block level – for example electrification of thermal appliances – would like to include “benefit” at forefront. Increasing peak generation means increasing peak carbon. Using electricity may not make sense from a financial and carbon standpoint – peak use of electricity may not be better than direct use of natural gas.
- Matt Schroettig, EWEB – focusing on smart electrification. Suggest changing wording to carbon free resources instead of renewable energy. If not, we may want to have a conversation about how we’re defining renewable.
- Mike Penwell, City of Eugene – This list of items is missing the synergies of overlapping strategies. For example, when we design a building we often think about and prioritize 2fers 3fers and 4fers in making decisions. Bullet point thinking leads to one benefit at a time, when decisions are made combining multiple items and weighing them.
- Jay Ward, Energy Trust of Oregon – There are 90,000 manufactured homes prior to 1990 in Oregon – huge energy load. There are opportunities to make investments to lower that energy load.
- A group member asked: Where’s water on this list?
 - Josh Proudfoot, project team: It’s going to be covered in natural resources.

Equity Discussion of Best Management Practices – facilitated by Josh Proudfoot

- Eleni Tsivtzi - Net zero is a wonderful goal –but it may have unintended consequences
 - Josh Proudfoot, project team: Net zero community is more important than net zero building. Cost of implementation matters – at the community level everyone’s bought into much bigger generation source.
- Shanna Brownstein, NW Natural - Net zero community basis – creating wealth in communities that traditionally access to resources. People that don’t own their homes can’t invest in solar rooftops. The renewable natural gas benefits MWMC ratepayers. Decreasing rates is another equity opportunity.

- Juan Serpa Muñoz, EWEB – We need to make sure buildings are accessible to populations that cannot afford them, especially considering the housing crisis.

Mitigation Actions of Each Organization – Facilitated by Josh Proudfoot

The group shared their high impact and important Triple Bottom Line (TBL) mitigation actions that their organizations are working on.

City of Eugene – Jeff Perry

Actions:

- We're working on electrifying a lot of our systems. There are equity benefits as well – long term reduction of costs and more comfort.
 - Regarding equity, the initial costs can be greater in some cases.
- Long term – solar and photovoltaics – longer term strategy.
- Analysis shows that moving away from natural gas to a heat pump system has a long pay off but it does pay off.

City of Eugene – Ethan Nelson

Actions:

- Mark Whitmill could not be here today.
- Mike is one of project managers for new city hall.
- City wide, we adopted policy to work with Building Codes Division and legislature to take on more efficient, high performance codes.
- The Reach Code occurred some years back – calls for greater efficiency.
- Executive order from the governor requires a number of different codes for high performance, low emission or zero emissions.
- City implementation of new code standards within 5 years, if not sooner.

Further Discussion:

- Josh Proudfoot, project team – Net zero building codes are in process which is a really significant shift. All new construction will be net zero – no more energy is consumed than is generated on site or exported. Totally passive house.
- Eli Volem, EWEB – Executive order 17-20 – all residential code by 2023 has to be net zero. DOE set net zero code as the target. Eli stated there are efficiency requirements, but doesn't know if it has to have renewable energy on it.
- Jay Ward, Energy Trust of Oregon – We are part of the BWIG working group – it has to be net zero "ready." That allows for it to be easily adopted at low cost.
- Jay Ward: Multifamily residential yes – there is a subcomponent that talks about affordable housing.
- Josh Proudfoot, project team – Increased cost due to investments is taken into account in the financing model. There's a higher upfront cost. It increases the mortgage payments, but decreases the cost of utilities. It ends up saving a lot on the energy.

- Ethan Nelson, project team - Rates and equity are intertwined. We understand that we can drive high performance, but what does that do to housing? We need to understand that driving high performance comes at a cost.
- Jay Ward mentioned the SB 978 (2017) process. They are working on structuring rate design in such a way that it addresses some of these concerns about affordability.
 - Shanna Brownstein – NW Natural - comment was due yesterday and then reporting to legislature in September.
 - Equity: There are split incentives between renters and owners. Regarding incentives from the state – how do you keep property owners from jacking up their rent or kicking people out directly or indirectly? How do you make sure affordable housing stock that has good energy efficiency and weatherization? How do you create such a tax structure? Should the utilities be gathering information on people’s income to administer programs more equitably – and are we the right entity to be collecting that information? There may be privacy issues and definitely administrative burden issues – utility companies probably aren’t the right agency to tackle this.

Northwest Natural – Shanna Brownstein

Actions:

Reduce the carbon intensity of the product we’re delivering. To do this we are looking at:

- Renewable natural gas (in partnership with MWMC). This energy source is taken off wastewater treatment. It would displace upstream gas. The carbon intensity of RNG varies based on source. There are good air quality benefits, especially when applied to transportation.
- Power to gas – excess renewable energy from wind and solar during peak production – split hydrogen and inject it into pipeline. This displaces upstream gas. Using power to gas technology, you can take sun or wind from June and use it in the middle of winter. You’re splitting the hydrogen off and you can use it interseasonally. It depends on an interseasonal battery. Good for hour to hour storage.
- By looking upstream, we have a large potential to reduce emissions. Lifecycle analysis shows that looking upstream at the burner tip we can get large reductions. Northwest Natural is a leader in the country as a small producer – we might impact other utilities and other natural gas companies. Our CEO sits on the American Gas Association Board. A big question within the industry is how can we value gas produced in an environmentally responsible way to incentivize those practices?

Energy Trust of Oregon – Jay Ward

Actions:

- We have commercial and residential programs on efficiency.
- We are tasked by utilities commission to deliver our programs in a cost effective manner. It narrows what we focus on. It’s more expensive to insulate the walls, so we don’t do that.
- On the commercial and industrial side there’s more opportunity– a lot of them are using old technology. For example, boilers at Springfield School District reduce gas by 50%.
- Our programs save 41,000 therms per year.
- Portland – working on conversion of woodstoves to something more efficient. We’re working with utilities. This affects lower income populations. It has equity implications – woodstoves and

multifamily housing – the owners don't pay bills but the renters pay bills but don't have control over the appliances.

Lane Community College – Luis Maggiori

Actions:

- Lane Community College has a goal of being carbon neutral by 2050
- LCC is in the process of updating the Climate Action Plan.
- We have a focus on the health of our community
- We're making improvements to our room scheduling and use of spaces – if we increase efficiency we will reduce our need for space and our space footprint. This has the biggest bang for buck.
- We also focus on education and awareness of energy efficiency.

Lane Community College –Troy Hanson

Actions:

- In facilities, we are currently focusing on lowest cost measures
- We are drafting the Facilities Master Plan - pulling from the climate action plan and equity discussion – we are just getting started.
- We are recommissioning existing buildings to optimize operations of HVAC controls.
- We are wrapping up bond construction projects including new renovations lighting and HVAC upgrades and low energy
- We're looking at solar - probably photovoltaic. Solar thermal is problematic – there's not very good payback with gas costs. Also complexity creates a challenge for system to operate as intended. There are maintenance concerns.
- We have a cost effectiveness operating practice of meeting the 1.0 cost benefit ratio – Does the energy savings justify the cost of the measure over the useful life of the system?
 - Natural gas prices are low, which makes it harder to make efficiency upgrades because they're not cost effective.
 - Does Energy Trust of Oregon take on carbon into consideration?
 - Jay Ward, Energy Trust of Oregon: No. Results would change if that was included.

Lane Community College –Roger Ebbage

Discussion:

From the equality perspective, theoretically all of this will minimize education costs. But we're not seeing a downward trajectory.

Ethan Nelson, project team—President Hamilton mentioned the role of education at LCC. LCC might not have large GHG reductions, but it does have educational assets around this topic. LCC does work in renewable energy technology, conducts energy studies in buildings at U of O, and dedicates the downtown campus as living learning lab. These are assets that have a major impact. Those LCC programs are critical moving forward, especially with EWEB at the table, who often provides funding for some of these things.

Actions:

- Downtown campus was supported by the bond. It's also an educational component – educational community building on energy education. There's a solar water heating system. 90% of people don't know what it is. The solar water heating system and evacuated tubing ray supplies the hot water for the building and dorm. The building is a teaching tool – to have these systems exposed within the building. It has built-in visuals to work with our students and demonstrate how a geothermal system works. There are three different photovoltaic systems. There are a couple of examples of demonstration characteristics.

U of O – Eleni Tsivitz

Actions:

- Office of sustainability creating the Climate Action Plan 2.0
 - The equity considerations are broad – but focused on access to education.
- Recently amended the Oregon Model for Sustainable Development
- Analyze energy data and track energy goals. In doing that, we shifted focus to lower emissions vs. simply reduction of amount of energy.
- Added social equity to people goal for the Oregon model.
- Recently completed the Utility Masterplan. Some of that has to do with efficiency and resiliency.
- We're working on an update to the transportation plan. Promoting active modes, increasing access on affordability, prioritizing walking, biking, public transportation to campus.
- Currently assessing, and implementing ___ vision project - how to accommodate growth over a long period of time within campus boundaries while maintaining beauty and functionality of campus. We are not encouraging growth beyond boundaries.

EWEB – Matt Schroettig

Actions:

- Currently working with a number of stakeholders and the state to design and support carbon pricing (cap and trade) in 2019.
- We keep track of our portfolio mix and carbon intensity.
- EWEB adopted a resolution to renew and reiterate our commitment to mitigate our impacts on climate change – adding language to focus on mitigation. ODOE's website includes Oregon's energy mix and it shows the mix for electric utilities are available. EWEB is the lowest in Oregon.
- Back in January, EWEB hosted a carbon forum which identified the least cost method to decarbonizing for electricity. The findings are:
 - Carbon tax is good, cap and trade is better.
 - The least cost effective is natural gas.
- Highlighting smart electrification.
- We're maintaining the same approach when it comes to community scale solar and renewable purchasing. We are winter peaking, which forces some limitations
- Impact is the coal is staying on longer than any of us want.

EWEB – Mike McCann

Actions:

- We have more resources through 2028 and we're not seeing load growth. Most folks in PNW are not seeing growth. The loads are flat, despite population increase. This could be due to efficiency. As a result we have excess power.
- In our power mix, we'll assess what the cheapest ones are and we can sell the desirable ones, which will displace fossil fuels.
 - For example, the wind farm in Wyoming—we plan to sell to another utilities—decrease their resource mix. It's a win-win: We don't need the excess generation, and it will displace fossil fuels from the utility that we sell it to.
- When the electricity prices go low, we can use the electricity to generate hydrogen. Surplus energy can be put it in transportation sector. Power to gas for hydrogen production.

EWEB – Eli Volem

Actions:

- We've had programs for a long time to support low-income populations.
 - Lacking diverse groups like non-English speakers and people of color.
 - We're working on improvements to the limited income program to reach more people and be more efficient.
- We have programs on smart electrification.
- We talk to customers about carbon and support their goals to reduce carbon.
- Home Energy Scores – We're getting information out to tenants on home energy scores.
 - This may not be the best way – it's a minimum \$200 cost to do a home energy score. Historical building performance information is good, but we need to put it into format that someone can understand and access. Participants were middle income, white. We did workshops to increase participation.

EWEB – Juan Serpa Muñoz

Actions:

- We're working on Scope 1 and scope 2 emissions internally.
- We have a robust set of residential and commercial, limited income programs:
 - Rebates
 - manufacturing discounts
 - partnerships
 - Looking at energy burden = what percentage of income goes to their bills may be a better approach to achieve goals.
- Partnerships- We're working with Electrify America.
- Support carbon legislation at state level.

EWEB –Discussion Equity and Co-benefits

- Mike McCann, EWEB – asked what it would mean if everyone got an electric car? At the household level electric vehicles don't take a lot of electricity to operate, but the issue is more with timing. We may want to look at price signals to charging at different times. If everyone charged at the same time – say in the evening when they get home from work, it could create peak load issues. Price signaling would encourage the use of timers to avoid that issue.

- Mike McCann, EWEB - The amount of solar generation in EWEB's mix is 0.1%. Mostly rooftop Photovoltaic at residential homes.
- Matt Schroettig, EWEB:
 - There are equity considerations to price signaling. Low income folks might have the least ability to address their usage patterns.
 - By the end of the planning cycle, EWEB will have undergone new power contract.
 - Equity impacts include cost, cleanliness.
 - In an energy efficient economy, this community has competitive advantage. EWEB has clean mix, which means lower carbon pricing impact on utility. This would attract businesses who'd want to access lower cost carbon free resources.

Future Climate Conditions in Eugene – presented by Josh Proudfoot

Josh presented on the Future Climate Conditions whitepaper - what we can expect the future conditions in Eugene to be in the next 30 – 100 years from climate change. Some key anticipated changes included:

- Increase population - Increased economic activity in Oregon with decrease in the South and Midwest.
- Hotter and drier summers 10-12 degrees Fahrenheit warmer by 2100.
- Warmer winters with the same amount of precipitation, but less snow/more rain. Snowpack in Cascades nearly gone by 2040.
- Increased wildfires – 500-600 percent more surface area by 2040.
- Halved summer stream flows by 2040.
- Turnover of vegetation to a different vegetation regime by 2080.

Some specifics that may be relevant to planning:

- The McKenzie River has some storage in the lava sponge which provides some buffering protections against snowpack loss. However, dry year after dry year after dry year – we'll lose the benefit.
- Hydro dams- we need to see more storage.
- We've heard from other agencies that the FEMA maps (100 year flood plain) are incorrect and aren't updated with current information:
 - Shanna Brownstein, NW Natural: There are economic challenges and impacts in revising FEMA maps because the FEMA maps influence home value and influence federal insurance around floods. Houses in FEMA zones get FEMA funding. It has huge implications as to values of homes.

Adaptation Actions of Each Organization – Facilitated by Josh Proudfoot

City of Eugene – Mike Penwell

Actions

- We're looking at heat pump technology. In the future, we're switching from a predominantly heating load to predominantly cooling load, where heat pumps might make more sense.

- We're considering it for swimming pools – but using heat pumps increases the cost of heating our pools, which raises our rates, which may have social equity impacts. Fuel switching isn't a slam dunk – costs more.
- Climate Recovery Ordinance goals
- We may want to consider introducing solar to heat our outdoor pools.

City of Eugene - Ethan Nelson

Actions:

- Passive buildings codes – maintains cooler temperatures in hot season and warmer temperatures in cold season. It increases water conservation and saves natural resources.
 - How to encourage community members to support zero-scaping?
- Heat island effect – we have a very progressive urban forestry program that is focused on how to manage shade, keep homes and facilities shaded as species change – planting species that thrive under future climate conditions.
- The City of Eugene provides heating and cooling stations during heat spells. This is especially relevant to low income populations and/or elderly populations.

EWEB – Mike McCann

Actions

- We don't have a lot of storage in our system, so looking for alternatives.
 - There are hydro impacts from climate impacts already. We are at risk of running out of water in summer – especially from the McKenzie River.
 - One of generating units shut down in early July because no more water (usually happens in august). 3 McKenzie River projects shut off by end of summer.
 - It hasn't happened every year (it happened three years ago last) but probably will happen every year from now on.
- We'll need more energy supply as the population grows.
 - We've been a heating load dominant utility thus far. If it's going to be warmer in winter and hotter in summer – that provides opportunity for some alternate sources of energy. Solar and battery makes sense with summer peaks.
- We are adding capability to test for toxic algal blooms.
 - We'll need additional water supply and treatment. With increased water temperature we'll have increased algal blooms and moss, treatment costs go up.
 - This year, in order to meet flow requirements, the Army Corps of Engineers had to release water from two rivers, and there were algal blooms in each river. Saw bacteria in intake, but not in finished treated water.
 - We see toxic algae every year.

EWEB – Eli Volem

Actions

- We're working on our 10 year Strategic Plan
 - Goal is to synchronize supply and demand
 - Smart grid – smart meters and micro grid
- Negotiation with Bonneville for renewal of that contract.

- Change in the number of ways that the utilities operate. The negotiation will be around that is the best interest of EWEB owners.
- Selling extra power
- Recognizing the changing circumstances within Pacific Northwest, how do we want that power to be allocated? Need is changing in future.

Energy Trust of Oregon – Jay Ward

Discussion

- ETO is structurally funded by public purpose charge – only authorized through 2025. Funding and programming could be renewed beyond 2025.
- With warmer winters, there will be less demand for electric and gas resources, and thus less energy use. Energy Trust won't be able to claim those savings.
- Power council and IRP – electric side – 99% of load growth.
- With a dual peak in summer (due to summer cooling) we'll need to adapt our programs. We currently don't do cooling.
- Irrigation modernization program.

Lane Community College - Roger Ebbage

Actions

- LCC Program is now fully online to serve the broader community:
 - Lane Community College's service territory reaches from Lane County to Douglas County. However most LCC students are from Eugene. There's a missed opportunity to train people outside of Eugene to meet social equity goals.
 - Now we can get the practical part of that coursework done where people are living instead of having them come to Lane.

Key Takeaways and Next Steps – Facilitated by Chelsea Clinton

Everyone shared what they learned or took away from the meeting today.

Themes: Impressed with the utilities taking on this challenge. City of Eugene taking the lead. Clear we need to work together on this issue. Opportunity to build partnerships. It's complex and requires us to all work together. Some impacts already seeing are scary. Stressed importance of what we're doing. Learning that there's a lot to learn. Building the table. Expressed appreciation.

Next steps: The City of Eugene will follow up on information you gave today.