Oregon Global Warming Commission Meeting

October 7, 2022

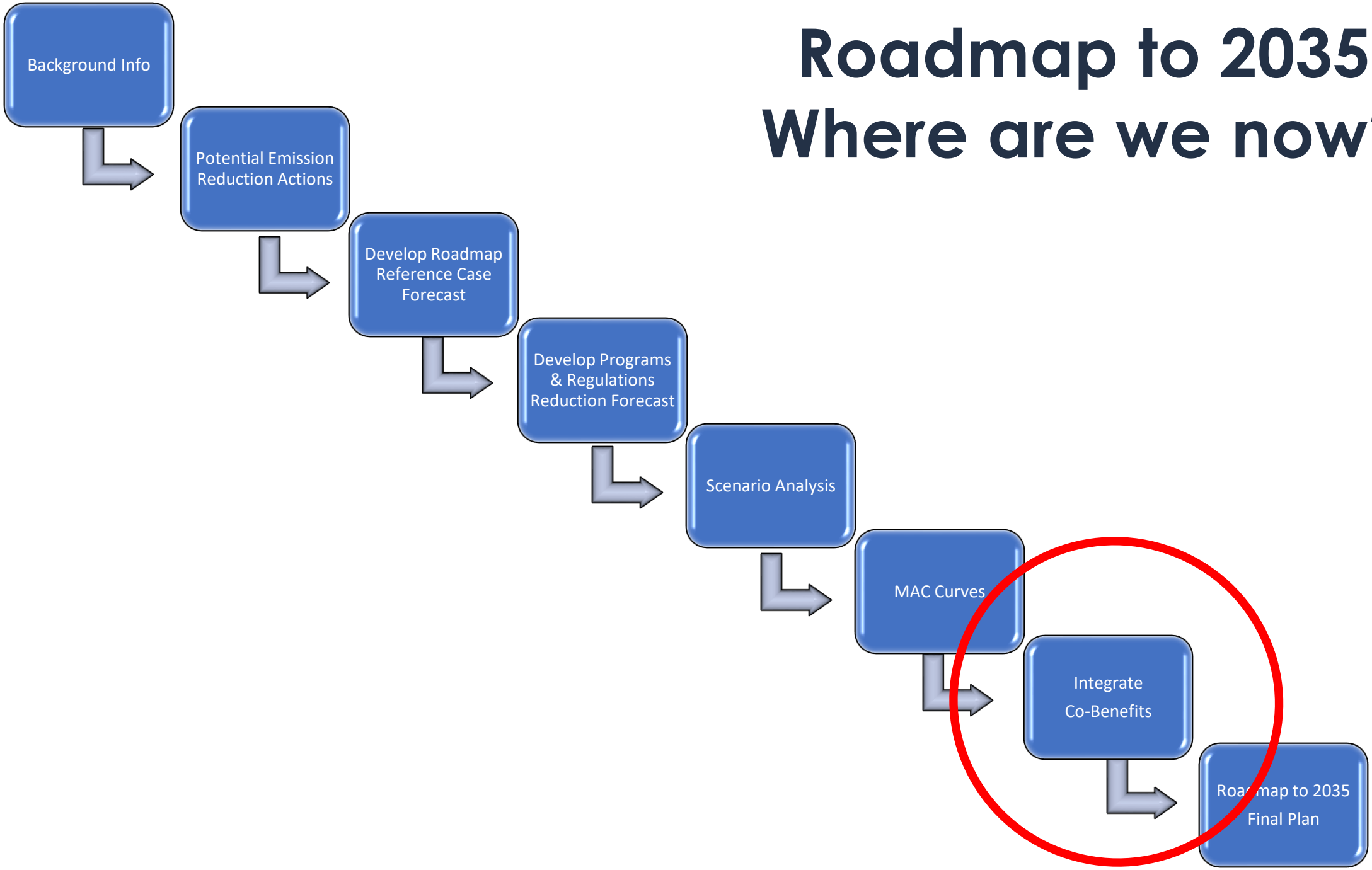
KeepOregonCool
Oregon Global Warming Commission

OREGON DEPARTMENT OF ENERGY

Meeting Overview

- Commissioner Updates (9:00-9:15)
- Overview of Incorporating Co-Benefits (9:15-9:30)
- Straw Proposal Review and Commission Discussion (9:30-10:30)
- Public Comment (10:30-11:00)
- Break (11:00-11:15)
- Finalize Co-Benefits and Other Evaluation Criteria (11:15-12:15)
- Reports and Next Steps (12:15-12:30)
- NWL Advisory Committee Update (12:30-12:45)

Roadmap to 2035
Where are we now?



Where Are We Headed…

- Compare order of actions based on co-benefits and other evaluation criteria scoring and MAC Curves
- Develop recommendations on goals, scenarios, and actions

Common Actions in Both Scenarios

Residential and Commercial energy code reduction of 60% by 2030	25% shift in urban areas to higher density residential dwelling types	10% shift mode shift in urban areas to passenger rail
Efficient heat pumps and water heaters in 100% of new homes and businesses by 2025	100% of new sales EVs by 2035	Carshare increases by 2035
Retrofit 95% of existing buildings reducing energy use by 50% by 2040	100% of new buses are EVs by 2035	Congestion pricing in urban areas resulting in 10% mode shift to transit by 2035
Existing buildings 100% heat pumps and water heaters by 2043	Mode shift 10% from MD to LD in urban counties by 2035	Water system 20% increase in efficiency by 2035
50% hot water heat pumps in commercial buildings by 2043	50% of off-road vehicle sales are EVs by 2035	Recycling Modernization Act*
Non-CPP Industrial load energy reduction of 50% by 2050	10% micro-mobility share by 2035	Food Waste Program 50% reduction by 2030
25% Reduced residential floorspace per building by 2035	10% shift mode shift in urban areas to passenger rail	Landfill Program*

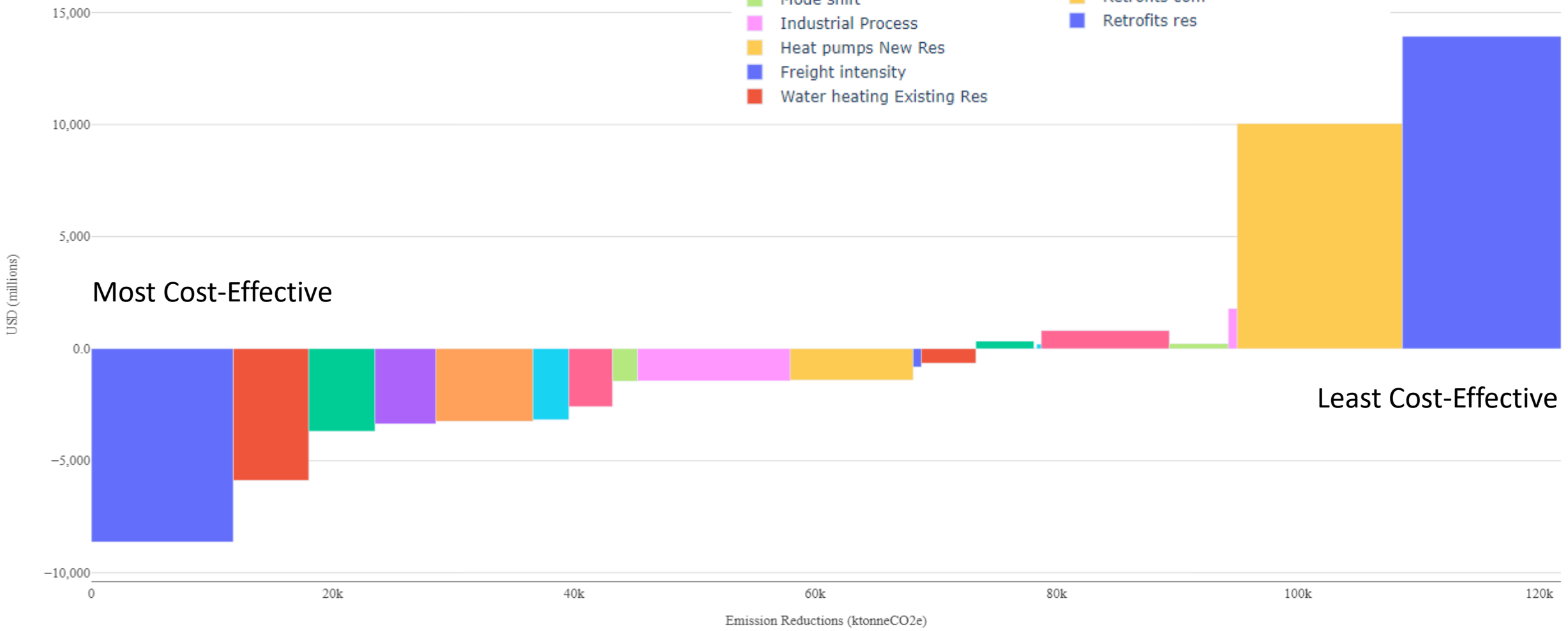
Different Actions in Each Scenario

Electrification Only Actions	Hybrid Only Actions
100% electric new non-heating equipment sales for all buildings by 2035	70% Green hydrogen in industry by 2050
4 TWh of solar on new buildings by 2035	Use full potential of RNG 47.5 TBtus by 2050
16.3 TWh of rooftop solar by 2035	15% hydrogen injection into pipeline by 2035
25% of homes with energy storage by 2035	5% of homes with fuel cells by 2030
100% of diesel backup power replaced with electric battery storage by 2035	5% of fuel share from Pyrolysis of biomass by 2035
70% industrial electrification by 2050	

Financial Metrics

Marginal Abatement Costs

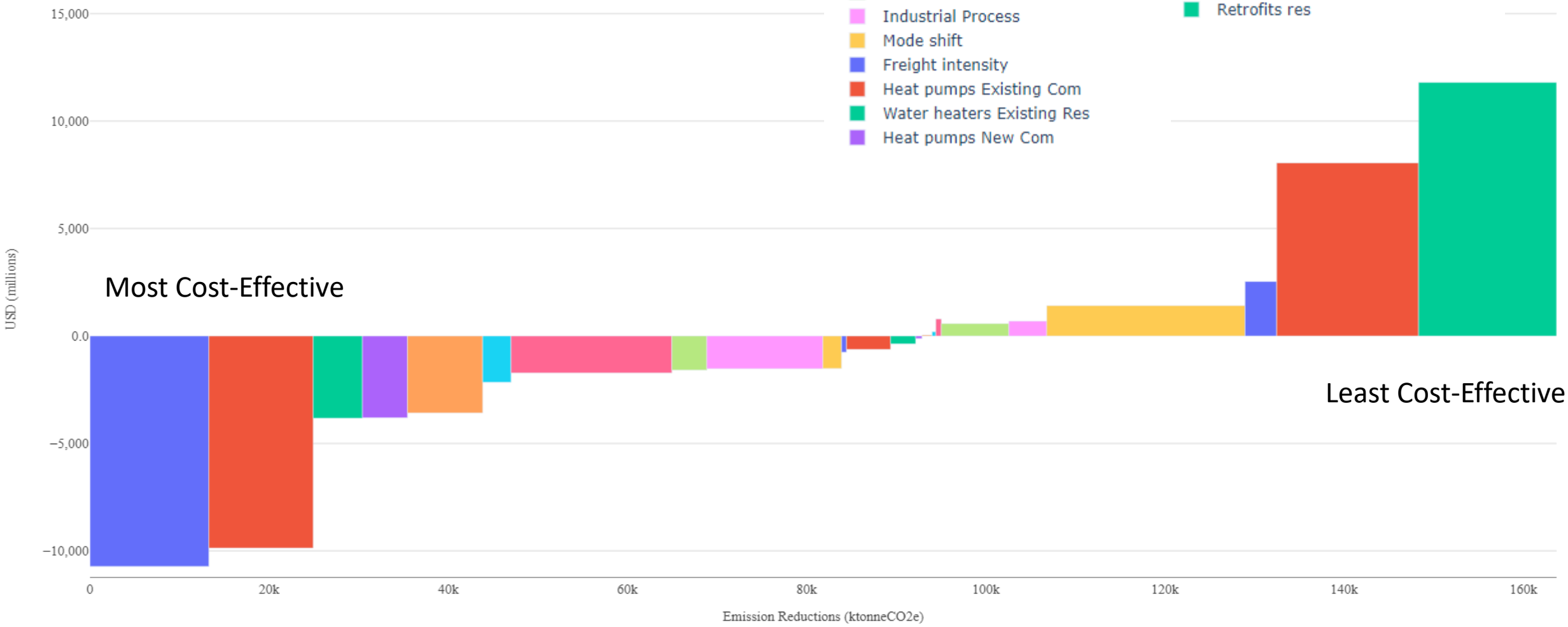
Electrification



Financial Metrics

Marginal Abatement Costs

Hybrid



Process Overview for Incorporation of Co-Benefits

1) Initial ideas on co-benefits and other evaluation criteria offered throughout the process
2) Straw Proposal provided for comment
3) Commission discussion and finalization of the co-benefits and other evaluation criteria including:
   - the selection and definition of, and
   - weight to assign (using a 100-point scale)
4) ODOE staff score the actions based on the weighted evaluation criteria, and rank the actions based on their scores

Today's Outcomes

- Agree on:
  - The Co-Benefits and other Evaluation Criteria to use
  - Definitions
  - Weighting

Co-Benefits and Other Evaluation Criteria Considerations

- **Using evaluation criteria to score the actions is about trying to compare and distinguish actions from one another.** Therefore, the focus should be on selecting evaluation criteria that can help us do that.
  - For instance, an evaluation criterion where its direct or indirect impacts are non-existent or de minimis, or roughly equal to all the other actions, would not be as useful.

- **How we define each evaluation criteria is important.** Evaluation criteria definitions can be straight forward or be multi-faceted.
  - For example, a “health” co-benefit can include not only the EPA-COBRA model dollar estimates of benefit but also increases to quality of life.

- **The number of criteria should be manageable.**

Potential Co-Benefits/Evaluation Criteria

Co-Benefits

- Social Equity
- Access to programs
- Energy Burden
- Jobs
- Health Impacts
- Quality of Life
- Resilience
- Environmental Impacts
- Social Cost of Carbon
- Energy Use Reduction
- Building Energy Cost Reduction
- Transportation Cost Reduction

Other Evaluation Criteria

- Cost Effectiveness
- GHG Emission Reduction Amount
- Risk and Uncertainty

And many other possibilities…

Straw Proposal

Evaluation Criteria	Definition	Weight
Cost-Effectiveness	• Relative net cost/benefit compared to the other actions, "bang for your buck" ($/MTCO2 from the MAC Curve analysis)	25
GHG Emission Reduction Amount	• Relative amount of GHG emission reduced compared to the other actions (cumulative MTCO2 reduced)	20
Risk & Uncertainty	• How likely is the cost-effectiveness and GHG emission reductions from the action likely to actually materialize (confidence in the probability: low/medium/high)	10
Health Co-Benefit	• Health benefits that result from reduction in air pollutants; specific health savings accrue from reduced: mortality, heart attacks, hospital admissions, emergency room visits, and work loss (cumulative estimated dollar amount from the EPA-COBRA analysis) • Quality of Life increases (physical activity, comfort, noise reduction)	15
Jobs and Economic Prosperity Co-Benefit	• Number of cumulative person job years estimated to be created over time as a result of implementing the action • Decrease in household or business building energy cost (from the reduction in energy use) • Decrease in household or business transportation costs	15
Equity Co-Benefit	• Relative level at which the action can serve historically and currently underserved populations and communities • Relative level at which the action will help alleviate energy burden (reducing the number of Oregonians paying more than 6% of their income on energy)	15
	TOTAL =	**100**

Commissioner Homework Response Overview

- 7 responses received
  - 5 voting members
  - 2 ex-officio non-voting members

- A variety of edits to the Straw Proposal including:
  - Criteria additions
  - Criteria definition changes (to all but one - GHG Emissions Reduction Amount)
  - Scoring weight changes

- And, a number of questions on the criteria…

Commissioner Proposed Criteria Additions

Evaluation Criteria
Cost-Effectiveness
GHG Emission Reduction Amount
Risk & Uncertainty
Health Co-Benefit
Jobs and Economic Prosperity Co-Benefit
Equity Co-Benefit

+?

Additional Criteria	Definition
Resilience	The ability of communities, businesses and households to withstand impacts of climate change and other natural disasters
Avoided Risks and Associated Costs Co-Benefit	Cost savings from avoided stranded assets resulting from investments in expanded fossil fuel infrastructure and nascent technologies and fuel sources

Other Commissioner comments:

- I concur with the listed co-benefits listed [in the Straw Proposal]. Do not recommend adding more as it then diminishes the weight of those here.

Commissioner Proposed Definition Changes: *Cost-Effectiveness*

Definition
• Relative net cost/benefit compared to the other actions, "bang for your buck" ($/MTCO2 from the MAC Curve analysis), including cost savings from avoided stranded assets resulting from investments in expanded fossil fuel infrastructure and nascent technologies and fuel sources. • Existing incentives, like federal clean energy tax credits and rebates, that will drive down the upfront costs of clean energy technologies.

Other Commissioner comments:

- Cost-effectiveness is important but not the most important.

Commissioner Proposed Definition Changes: *Risk and Uncertainty*

Definition
• How likely is the cost-effectiveness and GHG emission reductions from the action likely to actually materialize and realized emissions savings measured (confidence in the probability: low/medium/high)

Other Commissioner comments:

- **It appears repetitive to consider the cost-effectiveness in two separate categories.** In the category "Cost-Effectiveness" the cost/benefit is already weighted at 25 points, and now another 10 points are also included. If the cost-effectiveness is determined to be removed, then we are left with the consideration in this section about "probability". In considering this factor, 10 points does not appear to be enough weight. **If something is improbable then everything else goes out the window.**

- Would be interested in **further discussion of how this will be measured**, since some criteria are somewhat subjective.

Commissioner Proposed Definition Changes: *Health Co-Benefit*

Definition
• Health benefits that result from reduction in indoor and outdoor air pollutants; specific health savings accrued from reduced: mortality, respiratory illnesses (asthma, etc.), cancer/exposure to carcinogens, heart attacks, hospital admissions, emergency room visits, and work loss (cumulative estimated dollar amount from the EPA-COBRA analysis) • Quality of Life increases (physical activity, comfort, noise reduction)
~~• Health benefits that result from reduction in air pollutants; specific health savings accrue from reduced: mortality, heart attacks, hospital admissions, emergency room visits, and work loss (cumulative estimated dollar amount from the EPA-COBRA analysis)~~ ~~• Quality of Life increases (physical activity, comfort, noise reduction)~~ [Refer to as Quality of Life/Health Co-Benefit] • Reduction in air pollutants, more efficient building envelope, increased comfort, preserve energy choice for consumers, etc.

Commissioner Proposed Definition Changes: *Jobs and Economic Prosperity Co-Benefit*

Definition
• Number of cumulative person job years estimated to be created over time as a result of implementing the action • Decrease in household or business building energy cost (from the reduction in energy use/use of electric appliances) • Decrease in household or business transportation costs • Benefits resulting from the transition to clean energy, which will shield Oregonians from fossil fuel price volatility
• Number of cumulative person job years estimated to be created (and or existing jobs preserved/expanded) over time as a result of implementing the action • ~~Decrease in household or business building energy cost (from the reduction in energy use)~~ • ~~Decrease in household or business transportation costs~~ • Increase or maintain business and societal resiliency (household and business) measured by least amount of downtime/lost days • Increased EE resulting in savings and lower emissions
• ~~Number of cumulative person job years estimated to be created over time as a result of implementing the action~~ [Refer to as ~~Jobs and~~ Economic Prosperity Co-Benefit] • Decrease in household or business building energy and/or transportation cost (from the reduction in energy use) • ~~Decrease in household or business transportation costs~~

Other Commissioner comments:

- **Some overlap w/ the same benefit for equity**, reduce duplication a bit while keeping higher emphasis where it supports equity.
- Jobs and economic prosperity seem more variable as to whether they trend in same direction with highly valuable GHG solutions, whereas health and equity are more likely to be co-benefits. **Consider reducing weight.**
- While we want to create jobs, **I don't think this is as important as other co-benefits.**

Commissioner Proposed Definition Changes: *Equity Co-Benefit*

Definition
• Relative level at which the action can serve historically and currently underserved populations and communities • Relative level at which the action will help alleviate energy burden (reducing the number of Oregonians paying more than 6% of their income on energy) • <u>Avoided future energy burden resulting from expanded gas infrastructure and investments in expensive, nascent alternative fuels, which will especially impact renters and low-income households who are already disproportionately burdened by high energy costs.</u>
• ~~Relative level at which the action can serve historically and currently underserved populations and communities~~ • Relative level at which the action will help alleviate energy burden (reducing the number of Oregonians paying more than 6% of their income on energy)

Other Commissioner comments:

- **Recommend broadening the definition to include other GHG/household costs, such as transportation, energy and potentially housing** (borrowing from Housing + Transportation Index concept Housing + Transportation Affordability Index | Center for Neighborhood Technology (cnt.org))

- Perhaps a reminder that **underserved communities should include rural and frontier parts of Oregon**.

Additional Commissioner Comments

- Some additional duplication between categories and over-weighting
  - **Reduce overlap between prosperity (for all) and prosperity/cost burden of equity/underserved populations.** Potentially could measure cost as percentage of income and stratify income to put more weight to low income and average income benefits.
  - Could also **emphasize health benefits that accrue more to burdened populations.**
  - Potential to use **social cost of carbon** in place of some other measurements, to reduce duplication.
  - **Proposed straw man weighting may water down GHG impact as compared to co-benefits**, suggest increasing GHG relative impacts and balancing, potentially combining some of the others.

- Questions about the **interplay between the health, jobs, and equity measures**

- Pricing is a successful tool to create behavior change, reduce externalities and communicate through the market that goods are scarce or precious (energy and fuels). **Since price change is embedded in or a result of many actions, emphasizing economic co-benefits may work against those actions.**

- Health and Jobs/Economic prosperity, while important, increase the focus on benefits to the human population and present era. While we all want those benefits, it puts an emphasis on human-centered outcomes, whereas GHG impacts cut across all flora and fauna, which in turn enable life and quality of life for humans. These factors also put weight on actions that benefit the present time whereas the impact of climate change will be extreme and long lasting. **Potential to describe co-benefits to natural environment and health of other species in the definitions, and to consider time horizon.**

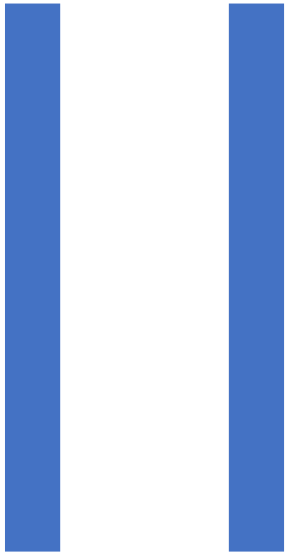
- **There are co-harms as well**, such as covering up good agricultural land with solar panels.

Commissioner Proposed Weighting

Evaluation Criteria	**Weight (Straw)**	Rietmann	Jackson	Anderson	Apter	Macdonald	ODOT
Cost-Effectiveness	**25**	25	20	20	15	15	30
GHG Emission Reduction Amount	**20**	20	20	20	25	25	30
Risk & Uncertainty	**10**	10	15	10	10	10	10
Health Co-Benefit	**15**	15	15	15	13	20	10
Jobs and Economic Prosperity Co-Benefit	**15**	15	15	20	12	15	5
Equity Co-Benefit	**15**	15	15	15	13	15	15
Resilience	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Avoided Risks and Associated Costs Co-Benefit	N/A	N/A	N/A	N/A	12	N/A	N/A

Potential Order/Topics To Work Through

- Additions
  - Resilience
  - Avoided risks and associated costs
    - See also related proposed language in cost effectiveness
  - Other?
- Cost-Effectiveness - Risk and Uncertainty
  - Clarify what is meant by each
  - Overlap/relation to each other
  - Specific definition changes
- Health - Jobs and Economic Prosperity - Equity
  - Overlap/relation to each other
  - Specific definition changes
- Other
- Weighting



BREAK

Biennial Report and *Roadmap to 2035*

- Deliver *Biennial Report* and *Roadmap to 2035* reports by early January to inform upcoming legislative session
  - *Biennial Report* – More of a status update including mention of recent Commission work on NWL and TIGHGER
  - *Roadmap to 2035* – Detailed explanation of the TIGHGER modeling and results with recommendations
    - Recommendations for the *Roadmap to 2035* will be developed and finalized over the next two Commission meetings

Roadmap to 2035 Next Steps

Next Steps	Date
Written comments due on goals, scenarios, and recommendations to consider	October 19
Post scoring results and Draft Recommendations for Commission and public review and comment	October 26
Written comments due	November 2
Commission Meeting to discuss scoring results and Draft Recommendations	November 14-18 (Exact date TBD)
Written comments due	November 29
Commission Meeting to finalize recommendations	December 5-9 (Exact date TBD)
Final modeling on recommendations by SSG ***(if needed)***	By December 16
Roadmap to 2035 published and delivered to Legislature	By January 9

Natural & Working Lands Project

- The Institute for Natural Resources is under contract
  - Hired a Facilitator
  - Drafted a Scope of Work for a Workforce Study
  - Created a Website for the Project
  - Begun engaging technical experts to inform the recommendations on the Inventory improvements
- OGWC Subcommittee
  - Reviewed 47 applications
  - Selected 27 people to be on the Natural and Working Lands Advisory Committee

Natural & Working Lands Advisory Committee

Recruitment Process and Results

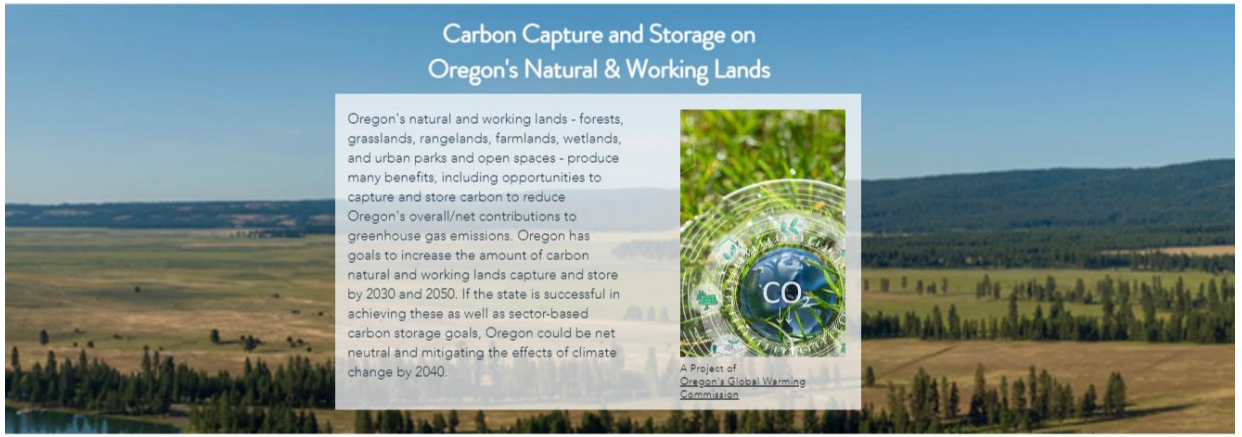
- Announcement for Round 1 of applications due August 5, 2022 – 33 applicants
- Extended application period for Round 2 through September 6, 2022 – 14 applicants
- Qualifications sought:
  - Diverse geographic representation
  - Diverse Expertise
  - Knowledge of Natural and Working Lands Programs
  - Demonstration of interests and needs of people managing natural and working lands
  - Demonstrated track record of working collaboratively.

- Total of 27 Advisory Committee members selected

- All meetings will be recorded, and meeting minutes and recordings will be posted on the OGWC Natural and Working Lands website

First Name	Last Name	Affiliation	Title
Lauren	Anderson	Oregon Wild	Forest Climate Policy Coordinator
Jocelyn	Bridson	Tillamook County Creamery Association	Director of Environment & Community Impact
Mimi	Casteel	Hope Well Wine and Vineyard	Owner, Winegrower and Agricultural Consultant
Gary	Clarida	Retired	Forestry technician, sawyer, and equipment maintenance supervisor
Craig	Cornu	PNW Blue Carbon Working Group	Coordinator
Margaret	Corvi	Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians	Cultural and Natural Resource Consultant
Tyler	Ernst	Oregon Forest Industries Council	Policy Counsel, Manufacturing and Resources
Brian	Glaser	Ernest Glaser Farms	Farm Owner and Operator
Greg	Green	Ducks Unlimited	Director of Conservation Programs - PacNW
Ben	Hayes	Spring Board Forestry	Manager/Principle
John	Hillcock	Wallowa County	Commissioner
Greg	Holmes	1000 Friends of Oregon	Working Lands Program Director/Southern Oregon Advocate
Megan	Kemple	Oregon Climate and Agricultural Network	Co-Director
Dylan	Kruse	Sustainable Northwest	Vice President
Debora	Landforce	2 Fox Farm	Partner
Jan	Lee	Oregon Association of Conservation Districts	Executive Director
Karen	Lewotsky	Oregon Environmental Council	Rural Partnerships Lead; Water Program Director
Nicole	Maness	Senior Analyst/Nonprofit Conservation Program Manager	Partner, Resilient Habitat and Working Lands
Mike	McCarthy	Farmer and Forest Manager	Farmer Emeritus
Dan	Probert	Country Natural Beef	Director
Josh	Robinson	Robinson's Nursery	Co-Owner
Liz	Ruther	Pew Charitable Trusts	Science and Policy Analyst
Amanda	Sullivan-Astor	Association of Oregon Loggers	Forest Policy Manager
Laura	Tabor	The Nature Conservancy	Climate Action Director
Joseph	Vaile	Klamath-Siskiyou Wildlands Center	Program Director
Katie	Voelke	North Coast Land Trust	Executive Director
Teryn	Yazdani	Beyond Toxics	Staff Attorney, Climate Policy Manager

www.ogwcnaturalandworkinglands.org



Oregon's goal:
The Oregon Global Warming Commission adopted a Natural and Working Lands Proposal that sets goals for carbon capture and storage on Oregon's natural and working lands: Sequester at least an additional 5 MMTCO2e per year in Oregon's natural and working lands and waters by 2030, and at least 9.5 MMTCO2e per year by 2050 relative to a 2010 to 2019 baseline. The OGWC recommends that the natural and working lands outcome-based goal should be separate from, and in addition to, Oregon's sector-based emissions reduction goals as established by the Legislature and updated in Governor Brown's Executive Order 20-04.