

# MEMORANDUM



**To:** Oregon Global Warming Commission

**From:** Cathy Macdonald, OGWC Chair  
Alan Zelenka, Assistant Director for P&I  
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**Date:** November 16, 2022

**Re:** Updated Proposal on Co-Benefits and Other Evaluation Criteria

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At the October 7, 2022, Commission meeting, the Commission discussed the straw proposal for conducting a co-benefits analysis and including the co-benefits in our analysis of the TIGHGER actions.

ODOE staff were directed to work with a subcommittee of the Commission to address the issues raised at the Commission meeting regarding the co-benefits and other evaluation criteria and to develop an updated proposal for scoring the TIGHGER actions. Issues raised by the Commission largely centered around the overall scoring approach, the specific evaluation criteria, and the weighting of the criteria.

Staff and the subcommittee met twice to discuss these issues. This memo summarizes the latest thinking on these issues, informed by subcommittee conversations and additional staff research, and includes an updated scoring proposal for Commission consideration.

## I. Overall Approach

At the October meeting, Commissioners generally supported scoring the actions based on co-benefits and other evaluation criteria, but there were some concerns about the overall scoring approach including:

- The need for greater community-based engagement and input to better inform the co-benefits analysis;
- How useful the overall scoring exercise would ultimately be; and
- Whether to integrate all the criteria together or handle as separate data points (e.g., assess co-benefits separately)

### *Proposed Resolution*

The subcommittee discussed the best course of action at length and in the end largely supported staying on track to develop a co-benefits analysis in time to finalize and deliver the report to the Legislature by early next year, but recommended the following:

- a. Look to incorporate other existing, relevant state agency work/learnings (e.g., Oregon Health Authority reports) into our analysis to the extent possible
- b. Include a section in the report teeing up equitable implementation questions/ideas (e.g., focus on historically underserved and low-income Oregonians first to maximize equitable implementation of policies and programs)
- c. Provide the Commission with more than just the overall scoring for each action
  - i. Provide the scoring results for each of the co-benefit criteria individually
  - ii. Provide the scoring for all of the co-benefit criteria combined

- d. Assess the value of the scoring results and make a final determination of whether or how to include and use it in development of the Roadmap
- e. Acknowledge the limitations of the co-benefits analysis in the Roadmap.

In addition, the subcommittee also endorsed the concept that we should pursue resources for a next phase of work focused on community engagement and defining how the state should approach equitable implementation of the actions identified in the Roadmap. This work would ideally be done in partnership with community-based organizations to inform design of actions in the Roadmap as well as future iterations of the Roadmap/TIGHGER analysis. [See recommendation 4(b) in the [Draft Recommendations Memorandum](#)].

## **II. Discussion of Specific Criteria**

At the October Commission meeting, Commissioners raised several possible additional evaluation criteria as well as refinements to the straw proposal criteria.

### ***Potential Additional Criteria***

Newly proposed criteria included resilience (community and political); avoided risks and associated costs; avoided costs from climate impacts; and timing of reductions (e.g., early action). Commissioners also expressed concern that including additional criteria could potentially dilute the value of the existing straw proposal criteria. Commissioners also suggested that some of the additional criteria could be included under the existing straw proposal criteria.

### ***Proposed Resolution***

The subcommittee reviewed the additional criteria and agreed to not include them as separate evaluation criteria either because we weren't able to identify data we could use to evaluate the criteria, they were covered by other criteria, or they could dilute the power of the other criteria. Where there were opportunities to enhance the scoring effort by tucking these items into the existing straw proposal criteria, staff did so: Political feasibility and implementation timing are included under the risk and uncertainty criteria in the updated proposal.

### ***Straw Proposal Criteria***

#### **A. Equity**

At the October meeting, the Commission expressed strong interest in considering equity, but raised several questions around the equity co-benefit:

- Can we assess/distinguish equity based on the actions in the scenarios or is that more of a how to implement the actions question, or both?
- If we can assess equity based on the actions, what data can we use?
- Should equity be a separate criteria or woven throughout the other criteria, or both?
- What definition of underserved communities should be used?

### ***Proposed Resolution***

Assessing equity is a complex topic with many different factors one could consider (e.g., socioeconomic status, demographics, health, environmental hazards, housing and transportation, language and education, geography, and more). One can also prioritize within any of these factors or across multiple

factors. Further, one can approach the factors more broadly or work to consider or distinguish these factors down to a census tract level.

Efforts are underway to offer more guidance on best practices and tools to help with this type of analysis. For example, [HB 4077](#) (2022) requires a subset of Oregon state agencies to create an environmental justice mapping tool. Agencies will be able to consider results of the environmental justice mapping tool when developing administrative rules or agency policies or programs. A [social vulnerability index for wildfire risk](#) was recently developed by Oregon State University and provides a sense of what a tool like this can offer.

Further, the TIGHGER actions do not include specific implementation details. The actions do not address whether certain groups will be prioritized in implementation (e.g. low income folks), whether certain Census tracts will be prioritized during implementation, or other implementation considerations that could impact equity. To overcome this challenge, as noted earlier in the memo, there is interest in including a section in the Roadmap report that tees up these types of equitable implementation questions/ideas. And, further, that the Commission recommend and pursue resources for a next phase of work focused on community engagement and equitable implementation.

With that said, we think there is still a way to, and value in trying to consider equity across the actions at this stage as part of the co-benefits analysis. Doing so would ensure that there is at least some starting point for comparing the actions based on equity and that equity does not get lost in the conversation moving forward.

To do so, staff recommends the following:

- a. Include a separate equity co-benefit as originally proposed, instead of weaving it throughout the other criteria, so it is clear how equity is being assessed.
- b. Focus the analysis on benefits to environmental justice communities as defined in HB 4077 (2022): “Environmental justice community” includes communities of color, communities experiencing lower incomes, communities experiencing health inequities, tribal communities, rural communities, remote communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities. [HB 4077 (2022), Section 10(4)]. Remote community is defined later in Section 10 of the bill as a community with low population density and high geographic remoteness.
- c. Use relevant, existing state agency work to inform the analysis. In 2018, OHA prepared a paper titled [Climate Change And Public Health in Oregon](#) regarding the health risks of climate hazards and co-pollutants of greenhouse gas emissions. Some of the relevant key findings in the OHA report include:
  - Low-income communities and communities of color are more likely to be exposed to air pollution because of where they live, work, and go to school.
  - Strategies to reduce greenhouse gas emissions have the potential to create multiple health “co-benefits” (improvements to population health in addition to the mitigation of climate change). These health benefits arise from lowering exposure to “co-pollutants” and through

the creation of healthy alternatives and community assets, such as increased access and use of active transportation infrastructure.

- Health benefits are greatest when these improvements occur among populations most vulnerable to the health effects of climate change.<sup>1</sup> (Note: Many of the environmental justice communities named in HB 4077 are identified as communities most vulnerable to the health effects of climate change.<sup>2</sup>) The report identified several actions as particularly beneficial: Healthy Homes, Active Transportation, Community Connectedness, Affordable Housing, and Sustainable Food Systems.<sup>3</sup>
- Many strategies to reduce climate pollution are the same strategies that we must implement to reduce health inequities.<sup>4</sup> Communities of color and low-income households already bear a disproportionate burden of disease in Oregon<sup>5</sup>

Based on this information, Staff recommends that we use health-related criteria in assessing equity:

- Reduction in air pollution – the greater an action reduces air pollution, the higher the benefit to environmental justice communities.
  - Reduction in other health inequities – an action that also reduces health inequities would benefit environmental justice communities more.
- d. Use reduction of energy burden (as assessed by SSG) as an additional way to assess the equity of actions. Many environmental justice communities are particularly impacted by energy burden.

Of course, there are a number of further design elements that could advance equity, but are not part of the TIGHGER action descriptions to be able to assess (e.g., whether environmental justice communities will be prioritized to receive the benefits of a policy or program first). Similarly, each of the actions have the potential to negatively impact equity if not implemented well (e.g., displacement of EJ communities). All of these considerations can be discussed further in a qualitative way in the Roadmap report section on equitable policy implementation recommended earlier in the memo.

## **B. Health**

The Commission expressed strong interest in considering health, but raised several questions around the health co-benefit including:

- Whether to consider quality of life in the health co-benefit and how to define it?
- Which illnesses to consider (e.g., cancer, asthma, heat stroke, etc.)?
- Whether indoor air pollution should be considered in addition to outdoor air pollution?
- Whether there was also a way to get at equity via the health co-benefit (e.g., health inequities)?

### *Proposed Resolution*

Staff recommends that the Commission use the EPA-COBRA data as a sub-criteria under the health co-benefit, and instead of including a quality of life sub-criteria, include a sub-criteria on reduction in other health risk factors/burdens.

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<sup>1</sup> OHA Report (2018). Page 3.

<sup>2</sup> See OHA Report (2018). Compare Pages 7-8 with HB 4077 “environmental justice community” definition.

<sup>3</sup> OHA Report (2018). Pages 22-27.

<sup>4</sup> OHA Report (2018). Page 2.

<sup>5</sup> OHA Report (2018). Page 7.

Sticking with the EPA-COBRA sub-criteria defines a universe of illnesses for consideration and provides a known, consistent data source to use in assessing the actions. Staff further detailed out the illnesses and pollution included in the EPA-COBRA model in the updated proposal. One of the additional illnesses the Commission was interested in adding – asthma – is already considered in the EPA-COBRA model. In addition, as part of the TIGHGER modeling, SSG already calculated the COBRA data for each action providing ready data for comparison. With that said, the COBRA data has its limits as it doesn't rely on local data, but for what data is readily available in the timeframe we need it, the COBRA data is a useful indicator.

The other health risk factors/burdens sub-criteria would be based on the actions identified in OHA's 2018 report – Climate Change and Public Health in Oregon (also mentioned in the equity section earlier in the memo). These actions include: increasing physical activity through land use improvements and active transportation; improving home indoor air quality and comfort; or improving nutrition through sustainable food systems. These actions cover many of the items raised in the original quality of life sub-criteria. Further, this sub-criteria includes the ability to factor in indoor air pollution from gas stoves, which was one of the suggested additions from some Commissioners. While there are other confounding factors (e.g. ventilation), there is a growing body of evidence regarding the health risks of indoor air pollution from gas stoves (see e.g. [Rocky Mountain Institute's Health Effects from Gas Stove Pollution](#)). And, on initial review, there is only one TIGHGER action that would likely receive a bump up in scoring based on that specific consideration – 100% electric new non-heating equipment sales for all buildings by 2035.

Finally, as explained in the equity discussion above, both the EPA-COBRA sub-criteria and other health risk factors/burdens sub-criteria can also be used to assess equity – as part of the equity co-benefit. This means that the health sub-criteria would also separately factor into the equity score. They would only be a portion of the equity score and the overlap is warranted given that environmental justice communities can receive even more benefits from the health co-benefits than the general population.

### **C. Jobs and Economic Prosperity**

The Commission expressed interest in considering jobs and economic prosperity, but raised a couple of questions around the jobs and economic prosperity co-benefit including:

- Whether to include jobs or just focus on economic prosperity?
- Whether to include climate impacts such as crop loss in economic prosperity?

#### *Proposed Resolution*

Staff recommends considering job years as part of this co-benefit. Job creation is an important benefit of climate action that many stakeholders and decisionmakers are interested in. SSG calculated the job year data for the actions as part of the analysis. While the job year data cannot currently be disaggregated further to types of jobs or income quartiles, understanding the general relative magnitude of job creation for each action can still be informative.

Regarding including specific climate impacts as a factor in economic prosperity, there is already a separate evaluation criteria that gets at avoiding climate impacts. That criteria is the GHG Emission Reduction Amount, which assesses the relative amount of GHG emissions reduced by an action.

## **D. Cost Effectiveness**

Two issues were raised by Commissioners to consider adding into the cost-effectiveness evaluation criteria: the potential for stranded assets and the availability of tax credits.

### *Proposed Resolution*

The subcommittee discussed the stranded assets concept and recommended that it should be included in the report narrative instead of as a criteria for comparing each of the actions. Infrastructure to carry out the actions (e.g., transmission lines or pipelines) was not part of the TIGHGER modeling, making it harder to consider a criteria based on that. But, like other potential negative impacts that could come from pursuing actions, stranded assets can be discussed in the report as part of those additional considerations.

Regarding the availability of tax credits, we still do not know enough about the federal tax credits that will be available. As a result, it would be challenging to factor in the availability of tax credits as an action comparison criteria at this time. With that said, tax credits will likely reduce the cost of actions, so should be something that are considered when more information is available. Towards that end, we can mention it in the report, and staff also offered a potential Roadmap report recommendation that would highlight this issue (see Recommendation 6 in the Draft Recommendations Memorandum).

## **E. Risk and Uncertainty**

The Commission expressed interest in including the risk and uncertainty criteria, but offered some input and a question regarding how best to apply the criteria:

- Should it be included in the overall evaluation criteria weighting or separate?
- Make sure it applies to the co-benefits criteria as well as the other evaluation criteria
- Detail out the specific risks and uncertainties being considered (e.g., technology)
- Potentially include policy resilience as part of the criteria

### *Proposed Resolution*

The updated risk and uncertainty criteria reflects the Commission's input. The risk and uncertainty criteria now also applies to the co-benefits criteria and Staff detailed out the specific risks and uncertainties that will be considered: technical feasibility, political feasibility, and implementation timing.

Staff continues to recommend the risk and uncertainty criteria be included in the overall weighting. This allows for relative scoring of the actions based on all the criteria.

## **III. Weighting**

Several Commissioners provided suggested numerical allocations for the weighting as well as general feedback. Some of the key themes regarding the weighting were:

- Overweight equity
- Reduce the weighting of Cost-Effectiveness and increase the weighting of GHG Emission Reduction Amount

### *Proposed Resolution*

The subcommittee agreed with the themes from the Commissioner input and the updated proposal reflects those themes. We used the average of all the Commissioner weighting submissions (some of which were submitted after the meeting) to come up with the following allocation:

<b>Criteria</b>	<b>Weighting</b>
GHG Reduction Amount	24
Cost-Effectiveness	20
Equity Co-Benefit	16
Health Co-Benefit	15
Jobs and Economic Prosperity Co-Benefit	14
Risk and Uncertainty	11

#### **IV. Updated Proposal**

The updated co-benefits and evaluation criteria proposal is available on the next page.

## Updated Co-Benefits and Other Evaluation Criteria Proposal

	Criteria	Definition	How Scored?	Data Source	Weighting	
MAC Curve Analysis	GHG Emission Reduction Amount	Relative amount of GHG emissions reduced	The higher the cumulative MTCO2 reduced, the higher the score	SSG TIGHGER Data: cumulative MTCO2 reduced	24	
	Cost-Effectiveness	Relative net cost/benefit of emissions reductions, "bang for your buck"	The lower the \$/MTCO2, the higher the score	SSG TIGHGER Data: \$/MTCO2	20	
Co-Benefits	Equity Co-Benefit	Relative level at which the action can serve environmental justice communities. Environmental justice communities include communities of color, communities experiencing lower incomes, communities experiencing health inequities, tribal communities, rural communities, remote communities (low population density and high geographic remoteness), coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities.	Assessed by looking at: 33% - <i>Reduction in air pollution</i> . Many environmental justice communities are typically exposed to more air pollution. 33% - <i>Potential to address other health inequities</i> . Many environmental justice communities experience more health inequities. 33% - <i>Relative level at which the action will help alleviate energy burden</i> (reducing the number of Oregonians paying more than 6% of their income on energy). Many environmental justice communities are particularly impacted by energy burden.	SSG TIGHGER Data: EPA-COBRA data  See "Reduction of other health risk factors/burdens" in the health co-benefit.  SSG TIGHGER Data: Energy burden reduction	16	
	Health Co-Benefit		50% - <i>Avoided health impacts and associated cost savings from reduction in air pollution/co-pollutants</i> Health cost savings specifically from reduced mortality, heart attacks, hospital admissions, emergency room visits, asthma exacerbations, acute bronchitis, respiratory symptoms, restricted activity days, and work loss as a result of reducing air pollution. Reductions in air pollution include pollution from primary fine particulate matter (PM2.5) and precursors of secondary PM2.5, including nitrogen oxides (NOx), sulfur dioxide (SO2), ammonia (NH3), and volatile organic compounds (VOCs).  The higher the health cost savings, the higher the score. 50% - <i>Reduction of other health risk factors/burdens</i> Actions proven to reduce other health risk factors/burdens include: - increasing physical activity through land use improvements and active transportation, - improving home indoor air quality and comfort, or - improving nutrition through sustainable food systems	SSG TIGHGER Data: cumulative estimated dollar amount from the EPA-COBRA analysis  TIGHGER action descriptions. Informed by high value climate and health actions in OHA 2018 Climate and Health Report and consideration of indoor air quality risks from natural gas stoves. Only one action specifically relates to the latter.	15	
		Potential to improve public health	If action is one of these types, it receives full points. Otherwise, it receives no points.			
	Jobs and Economic Prosperity Co-Benefit		50% - <i>Number of cumulative person job years estimated to be created over time as a result of implementing the action</i>  The higher the number of cumulative job years, the higher the score. 50% - <i>Decrease in household or business building energy cost (from the reduction in energy use) and transportation costs</i>  The higher the decrease in costs, the higher the score.	SSG TIGHGER Data: Cumulative person job years  SSG TIGHGER Data: Household or business building energy and transportation costs.	14	
Other	Risk and Uncertainty	Likelihood the cost-effectiveness, GHG emission reductions, and co-benefits from the action will actually materialize given risks and uncertainties (confidence in the probability: low/medium/high)	The higher the likelihood (i.e. the less risk and uncertainty), the higher the score. Assessed by looking at:  40% - <i>Technical feasibility</i> - Technology proven and available at scale (yes/no); if yes, more likely to happen - Reliance on maximum technical potential (yes/no); if yes, possible won't be able to fully achieve  40% - <i>Political feasibility</i> - Behavior change needed (high/medium/low); the more behavior change needed, the more potential to be less politically acceptable/adhered to - Amount of direct costs/savings (high/medium/low); if more direct costs, potentially less politically feasible (even if reduce a lot of emissions or significant co-benefits)  20% - <i>Implementation timing</i> - Timing of action/benefits (near-term, mid-term, long-term). The longer the lead time, the higher potential to not happen or go off course.	- Professional discretion - SSG Modeling assumptions for each action  - Professional discretion - SSG TIGHGER data: Net Cost/Benefit data  - Professional discretion based on action descriptions	11	