4 Reduce Emissions of Carbon Dioxide

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In Chapter 4 of the original 2012 Blue Ribbon Panel report, the Panel noted emissions of carbon dioxide must be significantly reduced to mitigate harm to marine organisms and coastal ecosystems. It described the urgent global and local issue that carbon dioxide emissions present to our oceans. It also noted the leadership role that Washington state and its communities have assumed for the better part of a decade in enacting carbon reduction policies. Given that the absorption of atmospheric carbon dioxide into the oceans is the largest source of acidifying pollution, the Panel recommended Washington continue working to reduce emissions of carbon dioxide under Strategy 4.1.

This chapter describes accomplishments since 2012 in reducing carbon emissions, revised and new actions, and key next steps to continue progress in this area. Refer to Chapter 4 in the original 2012 Panel report for a full summary of why reducing carbon emissions is critical, and for descriptions of each original action.

4.1 Accomplishments since 2012

Carbon Emissions Reductions Taskforce: In

2014, Governor Jay Inslee established the Carbon Emissions Reductions Taskforce composed of 21 leaders from business, labor, health, and public interest organizations. The taskforce provided recommendations on design and implementation of a market-based carbon pollution prevention program. The work of this taskforce informed the proposed carbon emission limit legislation in 2014 and 2016, including the Governor's Carbon Pollution Accountability Act, which sought to set a cap on carbon emissions and have major emitters purchase pollution allowances. While it did not come to fruition, this proposed legislation sets the stage for ongoing efforts to implement innovative carbon policy.

Tax incentives for electric vehicles:

A wide range of fully electric and hybrid cars now benefit from a sales tax break in Washington state.

Elimination of coal fired electricity:

Washington's electric utilities have created a plan for reducing and ultimately eliminating the use of electrical power produced by coal.

Clean Energy Fund: Created by executive order in 2014, this fund provides \$80 million to enable a mix of projects supporting development, demonstration, and deployment of clean energy technologies.

Clean Air Rule: After revising the state's greenhouse gas emission reduction limits to be more aggressive, Washington Department of Ecology's Clean Air Rule began requiring large in-state emitters to gradually reduce emissions over time, beginning in 2017. This rule is the first of its kind in the United States.

Reductions from local jurisdictions:

Local jurisdictions across Washington state have also shown leadership in recent

years by committing to reducing greenhouse gas emissions and sequestering carbon. As an example, King County's 2015 Strategic Climate Action Plan describes a variety of emission reduction and sequestration activities taken on by the county, including the purchase of clean electricity and the commitment to planting one million trees by 2020.

West Coast clean energy economy: Washington,

Oregon, California, and British Columbia have worked together under the Pacific Coast Collaborative to promote clean energy along the West Coast. Their collective work has grown the West Coast's clean energy economy more than twice as fast as the rest of the United States.

4.2 Updated Actions

Specific revisions to the Panel's 2012 action language are <u>underlined</u> for easy reference.

| Action | Original Language | Updated Language | Rationale |
|--------|---|--|--|
| 4.1.2 | Implement additional actions recommended by the Climate Action Team where such actions would reduce acidification of Washington's marine waters | Implement additional actions <u>to reduce</u> <u>carbon emissions</u> where such actions would reduce acidification of Washington's marine waters | • Broadens actions beyond those recommended by the Climate Action Team (no longer in existence) |
| 4.1.3 | Review data model results to validate whether there is a causal relationship between local air emissions and local marine water acidity. If the data confirms such a relationship, take actions to reduce local air emissions that contribute to acidification | Explore relationships between local air emissions and elevated regional atmospheric carbon dioxide through observations and modeling. Use numerical models to evaluate scenarios of elevated regional atmospheric carbon dioxide. Take actions to reduce local air emissions that are shown to contribute significantly to acidification. | Acknowledges the Washington Department of Ecology and the Pacific Northwest National Laboratory's model to characterize the relationship between regional atmospheric carbon dioxide and marine acidity Use the model to explore various scenarios that are supported by additional data and/or atmospheric models of relationships between local air emissions and regional atmospheric carbon dioxide |

4.3 New Actions

| Action | Language | Rationale |
|--------|---|--|
| 4.2.1 | Identify and share key findings from reducing emissions of carbon dioxide with ocean acidification communicators to support outreach and communication efforts designed to raise public awareness of ocean acidification (<i>Related to New Action 8.1.6</i>) | • As part of developing a strong ocean acidification outreach and communications strategy, each topic area is charged with sharing key findings, success stories, and relevant information to ensure communicators can successfully develop accurate key messages |

Predicting the significance of carbon pollution from the top of the Space Needle

Data collected from the top of Seattle's most iconic landmark show elevated local atmospheric carbon dioxide. Washington State Department of Ecology and Pacific Northwest National Laboratory have developed a model that characterizes the effects of local atmospheric carbon dioxide on marine conditions across the Salish Sea. The model found that local sources of atmospheric carbon can be a significant driver of pH in certain areas of Puget Sound, though spatial variability exists. This means that actions to address local carbon emissions are likely to have a meaningful effect in addressing acidifying conditions at the local level. While additional research and model calibration is needed, this key finding can serve to inform statebased pollution control efforts in Washington state moving forward.

4.4 Continuing Progress

In reviewing accomplishments and updated and new actions, the following were identified as key steps to reducing carbon emissions over the next five years:

- In the near term, coordinate a meeting for modelers and other Washington-based researchers with observational data to discuss the current state of the science on the relationships between regional emissions and regional atmospheric CO₂, the marine effects of locally-elevated atmospheric CO₂, and to determine future priority research questions. Use this discussion to guide next steps for carbon-related efforts, policy design, and budget prioritization
- Consider and define MRAC's role in carbon emissions efforts and legislative advocacy
- Update and/or develop ocean acidification materials to highlight new research and current state of the science related to the effects of local emissions on marine acidifying conditions
- Continue enforcement and support for Washington Department of Ecology's Clean Air Rule
- Continue conversations among Washington Department of Ecology, Environmental Protection Agency, and Puget Sound Clean Air Agency to discuss an action plan for regulatory and legislative change related to Washington's carbon commitments
- Continue Washington's leadership in carbon reduction efforts, including but not limited to efforts relating to the state's participation in the Pacific Coast Collaborative