May 15, 2023

Washington Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503

On behalf of Resources for the Future (RFF), we are pleased to share the accompanying comments with the Washington Department of Ecology on the potential for Washington to link its carbon market with the shared market of California and Quebec.

RFF is an independent, nonprofit research institution in Washington, DC. Its mission is to improve environmental, energy, and natural resource decisions through impartial economic research and policy engagement. RFF is committed to being the most widely trusted source of research insights and policy solutions leading to a healthy environment and a thriving economy.

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Dallas Burtraw serves as Chair of the California Independent Emissions Market Advisory Committee. The views expressed by both authors are their own and do not necessarily reflect the positions of their institutions. If you have any questions or would like additional information, please contact Dallas Burtraw at **burtraw@rff.org**.

Sincerely,

Dallas Burtraw
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Comments to the Washington Department of Ecology on Connecting Washington's Cap-and-Invest Program to Other Carbon Markets

Dallas Burtraw and William Shobe

We appreciate the opportunity to provide comments on the potential for Washington to link its carbon market with the shared market of California and Quebec. These comments assume that Washington is considering full integration of its market with the jurisdictions of California and Quebec. Full integration of two markets would allow compliance instruments issued in one jurisdiction to be used for compliance in the market of the other jurisdiction.

The economic advantages of linking markets with California and Quebec are substantial and outweigh any disadvantages. Linking would substantially advance Washington's climate policy goals.

Improved cost effectiveness: A primary advantage is the anticipated improved cost effectiveness of a larger carbon market because it is likely to identify emissions reduction opportunities at a lower cost than can a narrow market. One might view this short-run advantage as inconsequential if the long-term policy goal is the virtual decarbonization of the entire economy. However, the attainment of that policy goal hinges on addressing the challenges that appear in the near term. Fluctuations in renewable resources and fossil fuel supply imply fluctuations in the marginal cost of emissions reductions that will be reflected in allowance prices. A market with more diverse energy resources covering a larger geographic area will be less susceptible to variations in resource availability, leading to less price volatility in the carbon market, which lowers the cost of compliance planning by regulated entities.

Market stability: Reducing the cost of compliance is especially important in the early years of a carbon market because, as a new regulatory institution, the carbon market will be unfamiliar to many businesses and households. Prices in every air emissions market, including markets for sulfur dioxide, nitrogen oxides, volatile organic compounds, and greenhouse gases, rise above the anticipated marginal cost of compliance at the launch of the market.[1] This price rise is motivated by the lack of familiarity with the market by regulated parties who tend to exhibit risk-averse behavior by acquiring allowances to ensure their ability to comply with regulations. At the launch of the market, the regulated entities do not have a bank and typically take steps to acquire a bank, driving up the demand for allowances (and their price). Regulated entities are also in the early stages of identifying and implementing changes in operations and investments to reduce emissions. In every previous market, the initial period of relatively high prices has reversed, and prices have quickly fallen to anticipated price levels or below. During this transition period, high prices can be disruptive to businesses and

[1] Dallas Burtraw and Amelia Keyes. 2018. "Recognizing Gravity as a Strong Force in Atmosphere Emissions Markets," *Agricultural and Resource Economics Review,* 47(2): 201-219, **https://doi.org/10.1017/age.2018.12**; see also RFF WP 18-16.

can impose affordability challenges on households. Program design including linking to existing markets can mitigate the price fluctuations associated with standing-up a new carbon market.

Mitigating leakage: A larger market can help mitigate the challenge of leakage of economic activity or emissions to outside the state by aligning the cost of carbon emissions in broader materials and product markets and can provide an economic motivation for investments in clean energy and low-carbon technology and products.

Linking markets promotes policy coordination that improves Washington's economic competitiveness and is essential for addressing climate change.

Regional coordination: An important benefit of linking carbon markets is to promote Washington's climate policy goals on a regional and national basis. The success of the state's carbon market depends on comparable measures taken in other jurisdictions. Further, Washington's coordination with other entities can influence the design of climate policy in other states and nationally.

Participation in a larger market with a large number of actors may reduce the degree of autonomy the state has in policy making decisions. However, the climate policy problem is not one that can be resolved by individual jurisdictions, and meaningful efforts to address the climate crisis inherently involve complex coordination challenges. Joint decision making by multiple jurisdictions is essential for supporting Washington in realizing its climate objectives.

Good governance: Linking jurisdictions within a single market is an effective way to align and coordinate carbon mitigation activities on a broader scale. Nonetheless, it is important for the state to have clear guidelines for public participation in governing the broadened carbon market that would result from linking. Provisions for dispute resolution, and for the possibility of de-linking if required by future circumstances are important components.

Gains from trade: Another potential perceived disadvantage of linking is the financial flow of value and the resulting pattern of investments. Because California and Quebec presently have lower market prices compared to the market price in Washington, one can anticipate that linking would result in Washington compliance entities purchasing allowances from California and Quebec. This appears as financial value flowing outside of Washington to the other jurisdictions, and critics might be concerned that this happens at the expense of investments to reduce emissions that should be occurring inside the state.

There are several responses to this concern. One is that investments in green energy and low-carbon technology and products will accelerate when the program credibility and durability are established. A broader market expands the potential gains businesses will perceive from investing in new technology. Linking to the broader market builds those aspects of Washington's market. Second, the reduction in the cost of allowances in Washington that would likely result from linking would help to reduce the affordability challenge that emerges especially during the initial years of a carbon market. Both outcomes—establishing the credibility of the market and improving the affordability of climate policy—provide crucial support to the durability of the carbon market. Finally, the availability of lower cost avenues for controlling emissions reduces costs for businesses in Washington and *serves to strengthen* the state's economic competitiveness.

Linking carbon markets would comply with Washington's linkage criteria.

Program credibility: Experience in other greenhouse gas markets suggests that price formation in the market is primarily influenced by expectations among the regulated entities.[2] When the market has credibility, entities are willing to make investments to reduce emissions. Linking with other jurisdictions will have a positive effect on Washington's ability to meet emissions reduction commitments because it will greatly enhance the credibility of those commitments, which is essential to unleashing private sector capital to make the investments that are necessary to achieve them.

Encouraging investments: One of the ways that linking encourages investment by covered business is by reducing the *option value* of delaying investments in decarbonization. Option theory suggests that in the face of uncertainty, investors will delay investments even if they appear profitable on an expected value basis to learn more about the future—in this case concerning future carbon regulations and the longevity of the carbon market. Linking will enhance the credibility of carbon pricing and thereby reduce the costs for business that result from delaying the investments that are necessary to achieve the climate policy goals.[3]

Protecting disadvantaged communities: An important feature of the Washington program is the requirement to ensure that linking jurisdictions have provisions to protect vulnerable populations and overburdened communities. California has taken steps to provide this assurance through investments of carbon auction proceeds in disadvantaged communities as identified by the state. Over half of investments in California have been to the advantage of these communities. Moreover, these communities are among those most vulnerable to climate change and to affordability challenges. While there are clear and obvious reasons that carbon pricing is not sufficient to address the climate challenge, carbon pricing is imperative because it improves cost effectiveness and hence the credibility of the climate policy portfolio. Every ton of emissions reduction that can be identified and mitigated through a carbon price is achieved at less cost than the cost that would result from the comparable regulatory program that would be necessary to mitigate that ton. Because a substantial share of emission reduction costs is paid by consumers, reducing the costs of the carbon market works to the advantage of overburdened and disadvantaged communities. Additional provisions to ensure that the carbon market results in air quality improvements across all communities have been suggested in California by the Environmental Justice Advisory Committee and the Independent Emissions Market Advisory Committee.

In summary, linking would have local economic benefits along with national and international ramifications that amplify the leadership role of the state.

Linking has two key benefits. It reduces the cost of achieving Washington's climate goals and broadens the state's influence in advancing climate policy beyond its borders. If Washington links with other jurisdictions in a common effort to drive emissions reductions, it will legitimize and enable efforts to implement carbon pricing and companion regulatory policies to reduce greenhouse gas emissions elsewhere. Linking would substantially enhance the rigor, influence, and durability of Washington's climate policy efforts. The benefits of linking would accrue to all three jurisdictions, but Washington's newly formed carbon market would especially benefit by boosting its stability and the influence that its leadership can have throughout the nation and internationally.

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[2] Geoffroy Dolphin, Michael Pahle, Dallas Burtraw, and Mirjam Kosch, 2023. "A Net-Zero Target Compels a Backward Induction Approach to Climate Policy," under review.

[3] Dallas Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman 2013. "Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets," RFF Discussion Paper 13-04.