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**RE: Environmental Defense Fund comments relating to linkage between Washington's emissions market and the joint California-Quebec emissions market**

Dear Ms. Potts,

Environmental Defense Fund (EDF) appreciates the opportunity to provide input as the Department of Ecology (Ecology) evaluates a potential linkage between Washington's emissions market and the joint California-Quebec emissions market. EDF is a non-profit, non-governmental, and non-partisan organization that links science, economics, and law to create innovative, equitable, and cost-effective solutions to urgent environmental problems. EDF has over three million members and activists across the country, including over 100,000 in Washington state.

EDF brings deep expertise to climate policy design, particularly the design of enforceable, declining, economy-wide limits on climate pollution. EDF has long pursued initiatives at the state, national, and international levels designed to reduce emissions of climate-altering and health-harming air pollutants. EDF has been deeply involved in the design and implementation of California's cap-and-trade program since the program's launch in 2012. We continue to provide technical and policy expertise to make the program as strong as possible going forward and provide analysis of quarterly auction results—as we also now do in Washington.

EDF engages with both the California-Quebec emissions market and the Washington's emissions market to advocate for the deep emissions reductions needed to address the urgent challenge of climate change while creating a more sustainable and equitable future for all. Our goals for these both emissions markets include:

- Promoting ambition in the greenhouse gas emissions limits set by these markets in order to achieve the near- and long-term emissions reductions required to avert the worst impacts of climate change. Cap stringency must deliver cumulative greenhouse gas emissions reductions in alignment with science-based climate targets.
- Ensuring that emissions reductions are accurately quantified and that any offsets used to meet compliance obligations are additional and verifiable, and result in real, quantifiable, and permanent reductions in greenhouse gas emissions.
- Ensuring that the benefits of these emissions markets are shared equitably, particularly among communities that are disproportionately impacted by climate change and pollution. This includes ensuring that revenue from these markets is allocated to support investments in low-income and frontline communities, such as clean energy, energy efficiency, and transportation programs. This also includes securing air quality protections that work alongside and within market-based programs to ensure that air quality improves in communities that face disproportionate air pollution burdens.

Washington's Climate Commitment Act makes the state the country's frontrunner on climate action, with the most ambitious enforceable limits on climate pollution of [any state in the nation](#). By taking bold action to reduce greenhouse gas emissions, Washington is demonstrating that it is possible to address the urgent challenge of climate change while creating a more sustainable and prosperous future. Now, Washington is taking the next step forwards by evaluating whether to link the Climate Commitment Act's cap-and-invest program with the joint California-Quebec emissions market.

Linkage can offer important benefits to the state of Washington, driving climate action at the regional scale and enabling increased cost-effectiveness while maintaining the environmental integrity of the linked jurisdictions' declining caps on emissions. Through linkage, Washington can make its cap-and-invest program as strong and predictable as possible, helping facilitate ambitious climate action for decades to come and creating a foundation for broader climate action in the future.

## **Benefits of linkage between Washington's market and the joint California-Quebec emissions market**

By linking their carbon markets, Washington and California would demonstrate continued leadership on climate action and send a strong signal to other states and countries about the importance of reducing greenhouse gas emissions in an effective, coordinated manner. In evaluating the benefits of linking, we urge Ecology to consider the following:

**Linkage will create substantial economic benefits for Washington state, enabling greater levels of cost-effectiveness while maintaining the environmental integrity of the state's declining cap on emissions.**

Linkage between emissions markets in Washington, Quebec, and California will create substantial economic benefits for Washington State while preserving the environmental integrity of the cap-and-invest program. A 2022 joint report from EDF and IETA found that **“fundamentally, formal linkage leads to a single allowance price across all linked jurisdictions, thereby reducing total costs to final consumers without sacrificing environmental benefits. In turn, these cost reductions make it easier for regulators to achieve ambitious climate targets and lower overall cap levels.”**<sup>1</sup>

Earlier research by the OECD in 2014 similarly found that “linking schemes can improve cost effectiveness by increasing the size and liquidity of carbon markets.”<sup>2</sup> A larger, linked market will provide more opportunities for companies to find lower-cost options to reduce their emissions, helping to lower compliance costs for companies in Washington while still maintaining the same level of aggregate, cumulative greenhouse gas emissions reductions across the linked jurisdictions. This will allow Washington to achieve greater levels of cost effectiveness while maintaining the environmental integrity of the state's declining cap on emissions.

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<sup>1</sup> Environmental Defense Fund and International Emissions Trading Association. A Roadmap for Linkage: Aligning California and Washington's Carbon Prices. July 2022.

<https://ieta.org/resources/Resources/Reports/ARoadmapforLinkageJuly2022.pdf>

<sup>2</sup> Dellink, Rob et al. Towards global carbon pricing: Direct and indirect linking of carbon markets. OECD Journal: Economic Studies. 2014. <https://www.oecd.org/economy/growth/towards-global-carbon-pricing-direct-and-indirect-linking-of-carbon-markets.pdf>

Linkage will reduce the overall cost of compliance for regulated businesses in Washington. The economic analysis<sup>3</sup> published by Washington’s Department of Ecology, which examined the potential outcome of linking markets between Washington and California, showed that if market participants had certainty that the program would link with California’s program by 2025, the result would be a significant drop in the initial Washington allowance prices. This is compared to a market in which there was no expectation of linkage – with initial allowance prices dropping 30% from \$58.31 in a program without an expectation of linkage to \$40.74 in a program with an expectation of linkage to California.

Broader economic research also finds that program linkage yields efficiency gains; a recent study from economists at the University of Massachusetts Amherst found that linkage “yields lower total abatement costs and greater economic surplus in each program,” compared to independent systems.<sup>4</sup> This study built on earlier research by Resources for the Future, which found in 2013 that “bilateral linking of cap-and-trade programs offers potential efficiency gains through lower-cost emissions reductions.”<sup>5</sup>

These cost-effectiveness and efficiency gains can enable greater climate ambition across the two jurisdictions. The price reductions modeled by the Department of Ecology in a scenario with an expectation of linkage suggest that in a linked market, Washington is less likely to trigger an auction of allowances from the Allowance Price Containment Reserve—keeping those allowances out of the market and lowering the overall emissions under the cap.

**Linkage between the programs will allow for more streamlined auction administration and program management, while also increasing overall market security.**

Linking Washington’s market with the joint California-Quebec market will streamline auction administration and program management by utilizing a shared auction that leverages California and Quebec’s proven approach. Washington has already taken steps towards this outcome by utilizing the Western Climate Initiative as its auction platform—the same auction platform used by California and Quebec’s joint auctions. Linkage also establishes a single allowance price across all linked jurisdictions. Washington’s market already includes safeguards against market manipulation, but a single allowance price acts as an additional safeguard while also making it easier for regulated businesses that must comply with programs in multiple jurisdictions.

Linkage can also enhance market security, and “offers opportunities for sharing of risks related to changing circumstances.”<sup>6</sup> When multiple carbon markets are linked, there is a larger pool of allowances available for trading, creating a more liquid market; increased liquidity tends to also increase market resilience and the ability of the market to absorb shocks such as sudden changes in commodity prices or

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<sup>3</sup> Revised Preliminary Regulatory Analysis, Washington State Department of Ecology Air Quality Program. May 2022. <https://apps.ecology.wa.gov/publications/documents/2202019.pdf>.

<sup>4</sup> Woerman, Matt. Linking carbon markets with different initial conditions. *Journal of Environmental Economics and Management*. May 2023. <https://www.sciencedirect.com/science/article/abs/pii/S0095069623000384>

<sup>5</sup> Burtraw, Dallas et al. Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets. *Resources for the Future*. April 2013. <https://media.rff.org/documents/RFF-DP-13-04.pdf>.

<sup>6</sup> Ibid.

in currency exchange rates.<sup>7,8</sup> This increased liquidity and security makes it easier for companies to plan their emissions reductions and invest in low-carbon technologies.

Furthermore, by sharing information, regulators can learn from each other's experiences and share best practices, leading to more effective program management and a stronger overall market. Administration of a linked market is also more efficient, benefiting from reduced program costs and streamlined processes that benefit both regulators and companies across a linked system.<sup>9</sup>

Streamlined compliance, reduced administrative costs, a single allowance price, and increased market security all contribute to a more effective and efficient cap-and-invest program that will drive down greenhouse gas emissions over time.

**Linkage between Washington's program and the joint California-Quebec emissions trading system would be a major achievement for the climate, building momentum for bold climate action and signaling a common, large-scale effort to reduce greenhouse gas emissions.**

Climate change is a global problem, and greenhouse gas emissions are a global pollutant. Climate leadership states like Washington are essential for driving progress to cut emissions, and Washington's Climate Commitment Act is an important model of climate action that other jurisdictions should follow. Linkage would be a concrete step towards achieving the greater level of cooperation that is necessary to prevent the most dangerous and irreversible impacts of climate change.

**To realize the benefits of linkage to their fullest potential, we urge Ecology to work towards a functioning linked market as soon as possible, but no later than 2025.** Linkage during the first compliance period of the Washington cap-and-invest program would provide stability and certainty to regulated entities while locking in benefits for energy affordability as soon as possible.

## Linkage Criteria

The Climate Commitment Act lays out four criteria that must be evaluated before Washington can move forward with linking its program with another jurisdiction. Those criteria include:

- 1) Ensure that the linking jurisdictions have provisions to ensure their programs provide benefits to vulnerable populations and overburdened communities.
- 2) Ensure that linking would not have an overall negative effect on highly impacted communities in the linking jurisdictions.
- 3) Ensure that linking markets would not impact Washington's ability to achieve its greenhouse gas emissions reduction limits, including an analysis of pre-2020 unused allowances in a linked program.
- 4) Ensure that linking markets would reduce the cost of compliance for covered businesses.

In evaluating these criteria, we recommend that Ecology consider the following:

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<sup>7</sup> Environmental Defense Fund and International Emissions Trading Association. A Roadmap for Linkage: Aligning California and Washington's Carbon Prices. July 2022.

<https://ieta.org/resources/Resources/Reports/ARoadmapforLinkageJuly2022.pdf>

<sup>8</sup> Santikarn, M. et al. A Guide to Linking Emissions Trading Systems. International Carbon Action Partnership. 2018.

[https://icapcarbonaction.com/system/files/document/icap\\_guide\\_to\\_linking\\_full-report\\_1.pdf](https://icapcarbonaction.com/system/files/document/icap_guide_to_linking_full-report_1.pdf)

<sup>9</sup>Ibid.

**The Climate Commitment Act gives Ecology broad authority to adjust the program as needed to ensure that Washington’s achieves its 2030, 2040, and 2050 climate targets.**

The Climate Commitment Act (CCA) grants broad authority to the Washington State Department of Ecology to design and implement its cap-and-invest program, with the flexibility to adjust the program as needed to ensure that the state meets its 2030, 2040, and 2050 emissions reduction targets.

Specifically, the [CCA states](#) that Ecology has the authority to evaluate the performance in the program of reducing greenhouse gases, and that "If the evaluation shows that adjustments to the annual allowance budgets are necessary for covered entities to achieve their proportionate share of the 2030 and 2040 emission reduction limits identified in RCW 70A.45.020, as applicable, the department shall adjust the annual allowance budgets accordingly."

This provision gives Ecology the power, if necessary, to adjust the number of allowances available to regulated entities to ensure that the state stays on track to meet its 2030, 2040, and 2050 climate targets.

Additionally, evaluation of Washington’s ability to meet its 2030, 2040, and 2050 climate targets should include consideration of complementary policies that will work alongside the cap-and-invest program to collectively ensure that the state can meet its goals. Together, these policies create a comprehensive and flexible approach to reducing greenhouse gas emissions and transitioning to a clean energy economy.

**Cumulative emissions reductions are a critical metric for effective climate action, and progress towards shared emission reduction goals at the regional scale can be reflected in emissions accounting.**

The impact of long-lived greenhouse gas emissions in the atmosphere is cumulative; much of the pollution we are emitting into the atmosphere today will linger and continue to cause warming for decades to come. Cumulative emissions levels are a major determinant of the level of warming that our planet experiences, and it's critical that our approach to climate policy is consistent not only with in-year targets, but also with assessments of carbon dioxide budgets that estimate the cumulative amount of carbon dioxide that can be emitted while staying below science-based temperature targets. That is, effective climate policy needs to achieve an emissions decline **pathway** with a persistent downwards trajectory that aligns with estimated carbon dioxide budgets.

Cap-and-invest and cap-and-trade programs with allowance budgets that decline year-over-year are designed to effectively reduce cumulative emissions over time, ensuring that emissions decline in line with a cumulative carbon budget that’s aligned with an in-year goal. In a linked emissions market, different marginal costs for reducing pollution will likely lead to a net flow of allowances between jurisdictions. For example, the linkage between California and Quebec, which has been operating since 2014, offers several guideposts for navigating the questions that arise when a smaller market merges with a larger market.

Quebec is typically a [net importer of allowances](#) from California, though it was a net exporter to California during the first two years of linkage.<sup>10</sup> It is important to note that though Quebec is a net importer of allowances from California, each net allowance imported by Quebec means that one fewer net emissions allowance was available to regulated entities in California. This approach is consistent with

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<sup>10</sup> California Air Resources Board and Government of Quebec. Report on the Net Flow of Compliance Instruments between Quebec and California for the Period 2013-2020. December 2022. <https://www.environnement.gouv.qc.ca/changements/carbone/rapport-flux-echanges-droits-emission-ges-quebec-californie-2013-2020-en.pdf>

achieving a regional shared carbon budget based on climate targets in the two jurisdictions, and allowed both jurisdictions to achieve their individual climate goals.

**An evaluation of linkage criteria should reflect studies on local air pollution in communities in California that face a disproportionate share of environmental health harms.**

Under the declining economy-wide cap on emissions, individual regulated businesses make decisions about when and how to reduce emissions based on allowance prices. As explained by ASU Professor [Danae Hernández-Cortés](#), a given cap-and-trade program’s ability to reduce emissions and decrease environmental disparities is critically dependent upon the location/spatial distribution of polluting facilities, the marginal abatement costs of those facilities, and their geographic proximity to disadvantaged communities. Strictly looking at emissions production, the ability of facilities to accumulate emissions permits while under the market’s cap could theoretically result in an increase in emissions. If the greenhouse gas pollutants regulated under the market are co-emitted with local air pollutants, an increase in emissions would likely coincide with an increase in localized air pollution, thereby amplifying the health impacts experienced by the overburdened communities who typically live nearer to polluting facilities. To calculate how a cap-and-trade program will affect environmental justice gaps, it is thus imperative to note where regulated facilities are located and to model how the emissions that they produce under the program will travel in relation to downwind and disadvantaged communities.

In the long-term, [California's Scoping Plan](#) plays out a strategy for achieving emissions reductions of 48% below 1990 levels by 2030. Air quality co-benefits will be substantial. But *where* those co-benefits are located is critical for ensuring that air pollution improves in the most impacted communities. A [2017 report from CalEPA’s Office of Environmental Health Hazard Assessment](#) also points out that data analysis of GHG emissions and air pollutants is complicated by differences in regulatory programs, and advocate for “co-reporting of criteria, air-toxic and GHG emissions for the facilities subject to the Cap-and-Trade Program” to aid investigation of emissions impacts.<sup>11</sup> Similarly, the [California Air Resources Board has specifically recommended](#) working “with air districts to assess emissions reduction opportunities” and improving “emissions inventory and data transparency” in order to achieve further reductions in air pollution.<sup>12</sup>

A variety of academic studies have been conducted that assess the environmental justice impacts of California’s cap-and-trade program. A [recent study in the Journal of Public Economics](#) evaluated how California’s environmental justice gap—the disproportionately higher pollution concentrations that are systemically experienced by people of color and low-income communities—has changed since the introduction of California’s cap-and-trade program in 2013. The study found that since California’s program launched, the environmental justice gap has narrowed and disparities in local air pollution concentrations from industrial sources regulated by the market have fallen.<sup>13</sup> In other words, as a result of

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<sup>11</sup> California Environmental Protection Agency Office of Environmental Health Hazard Assessment. Tracking and Evaluation of Benefits and Impacts of Greenhouse Gas Limits in Disadvantaged Communities: Initial Report. February 2017. <https://oehha.ca.gov/media/downloads/environmental-justice/report/oehhaab32report020217.pdf>

<sup>12</sup> California Air Resource Board. California’s Clean Air Approach and Update on the Cap-and-Trade Adaptive Management Process. November 2016. <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2016/111716/16-10-5pres.pdf>.

<sup>13</sup> Meng, Kyle C. and Danae Herdandez-Cortez. Do environmental markets cause environmental injustice? Evidence from California’s carbon market. Journal of Public Economics. January 2023. <https://www.sciencedirect.com/science/article/pii/S0047272722001888>

cap-and-trade, California's disadvantaged communities have experienced a greater reduction in pollution than their non-disadvantaged neighbors.

However, while California has made important progress towards addressing air pollution in disproportionately impacted communities, there remains a significant need for targeted air pollution policies and enhanced monitoring and enforcement to ensure that air quality continues to improve in California's disadvantaged communities and ultimately such unacceptable disparities are eliminated.

**In evaluating how California's program has benefitted vulnerable populations and overburdened communities, consider data on how investments of cap-and-trade program revenue have been targeted to provide benefits to California's priority populations.**

Investment in environmental justice communities is a clear priority in California's carbon market. At least 35% of the revenue from California's auctioned allowances must be used to benefit priority populations, including disadvantaged communities, low-income communities, and low-income households. CalEPA defines disadvantaged communities based on census tract data relating to socioeconomic status and pollution exposure. Currently, these designated communities include those in the top 25 percent of tracts "experiencing disproportionate amounts of pollution, environmental degradation, and socioeconomic and public health conditions," those scoring in the highest five percent on the CalEnviroScreen Pollution Burden metric, those identified as disadvantaged by the 2017 census, and those residing on Tribal lands. Low-income households are those at income levels at or below 80 percent of the California state median.

As of 2022, 73% of the cumulative \$9.3 billion implemented by California Climate Investments are benefiting priority populations, significantly exceeding that 35 percent statutory minimum.<sup>14</sup> This includes contracts of more than 9,000 affordable housing units, funding of more than 850 transit agency projects, and reductions in more than 78,000 tons of criteria air pollutants.

**In Washington state, effective implementation of the Climate Commitment Act's air quality protections can help ensure that the cap-and-invest program provides air quality benefits to communities that are overburdened by air pollution and environmental health harms.**

Section 3 of the Climate Commitment Act tasks the Department of Ecology with a four-pronged commitment relating to air quality protection. Ecology must: 1) identify both the communities overburdened by air pollution and the sources of that pollution, 2) expand the state's air quality monitoring infrastructure, 3) reduce criteria air pollutants in those communities, and 4) evaluate reduction strategies periodically to make sure goals are being met. If implemented effectively, these provisions will provide an important safeguard to ensure that criteria air pollution levels are reduced in overburdened communities.

The CCA geographically defines those "overburdened communities" as areas in which "vulnerable populations face combined, multiple environmental harms and health impacts or risks due to exposure to environmental pollutants or contaminants through multiple pathways, which may result in significant disparate adverse health outcomes or effects." That classification is very similar to California's statutory language (described above), which was also updated in 2022 to include Tribal lands in its designation of

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<sup>14</sup> California Air Resources Board. Annual Report to the Legislature on California Climate Investments using Cap-and-Trade Auction Proceeds. April 2023. [https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/ci\\_annual\\_report\\_2023.pdf](https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/ci_annual_report_2023.pdf)

disadvantaged communities.<sup>15</sup> Overlap in this definition and in the minimum revenue investment requirements reflects Washington and California's shared focus on disadvantaged communities, which in turn suggests a promising foundation for linking the two states' carbon markets.

**A minimum of 35%, and a goal of 40%, of revenue from Washington's cap-and-invest program must be invested in projects that create direct benefits for communities overburdened by air pollution. An additional 10% or more must be invested in projects that are supported by Tribes.**

CCA funding will fund emissions reductions, climate resilience, and air quality improvements in overburdened communities. Specific programs will likely include increasing access to public transportation through transit grants, supporting the clean energy transition through renewable energy investments and affected worker assistance, and addressing health inequities via strengthened air quality monitoring networks. Investment of auction revenue is a critical mechanism for ensuring that overburdened communities and vulnerable populations receive direct benefits from the cap-and-invest program. California's more established cap-and-trade boasts a successful legacy of projects that have collectively saved 560 billion gallons of water, reduced 72 billion vehicle miles traveled, and generated 3.6 billion KWH of renewable energy. With more than 200,000 new urban trees planted, more than 21,000 new jobs created, and more than 10,000 new affordable housing units developed, the California Climate Investments provide a clear model for how CCA proceeds can be invested into the Washington communities most in need of them.

Thank you for considering our comments on potential linkage between Washington's emissions market and the joint California-Quebec emissions market. EDF appreciates the work that the Department of Ecology has done to build and launch a nation-leading cap-and-invest program, and we look forward to continued opportunities for engagement as Washington considers taking a next step towards a coordinated, regional market for reducing climate pollution.

Respectfully submitted,

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<sup>15</sup> California Air Resources Board. Priority Populations. Accessed May 2023.  
<https://www.caclimateinvestments.ca.gov/priority-populations>