CARBON PRICING LEADERSHIP COALITION

Executive Briefing
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What Are the Options for Using Carbon Pricing Revenues?

Carbon pricing policies put a price on greenhouse gas (GHG) emissions to provide economic incentives to businesses and households for an efficient, market-based transition to a low-carbon economy. Revenues generated from carbon taxes, levies, and cap-and-trade schemes are an important consideration for public policy - the way they are used can impact the economic effectiveness of pricing mechanisms, influence environmental outcomes and can help improve the political acceptability of their introduction or increase.

In 2015 alone, carbon pricing policies generated USD 26 billion in revenues worldwide. While this sum accounts for only a very small percentage of total government revenues, it can be a larger proportion in some jurisdictions. Further, revenues are expected to increase as coverage and levels of pricing measures become greater.

These revenues, when carefully and strategically considered, can represent a significant financial resource for governments to support public policy goals. There is an array of possible options for the use of revenues. By engaging with stakeholders, governments can identify the most important priorities and trade-offs. Importantly, carefully considered use of revenues can help to address a country or region's unique challenges associated with carbon pricing policies.

KEY MESSAGES

- In 2015, governments generated USD 26 billion in carbon pricing revenues worldwide.
- Carbon pricing revenues present opportunities to address unique challenges of carbon pricing and achieve economic and environmental gains.
- Revenues can be used to support investments to combat climate change, reduce distortionary taxes, address fairness and competiveness concerns, or drive government spending on public priorities.
- Multiple priorities may require a multi-part approach to revenue use and periodic review is recommended.
- Careful study, public engagement and stakeholder consultation help to define the revenue use best suited for each jurisdiction.



HOW CAN CARBON PRICING REVENUES BE USED?

There are a range of approaches to the use of revenues taken by jurisdictions that have adopted carbon pricing. In evaluating options, there are several key principles for jurisdictions to consider, including: potential economic and environmental gains, efficiency, interaction of spending with the carbon price itself, potential cost of distortions created by a revenue spending policy, and how progress toward objectives can be monitored and verified. To assist in the decision-making process, this brief highlights some of the ways that the USD 26 billion in global carbon revenues generated annually are being deployed.

Each carbon price revenue option has benefits and costs and must be tailored to the specific circumstance and needs of a jurisdiction, and aligned with existing policies. Furthermore, policymakers must balance concerns of simplicity, transparency and accountability for the use of revenues with dynamic and evolving needs for expenditure. Robust policymaking processes, including public consultation, can help to determine appropriate measures for a given jurisdiction.

In designing a revenue-spending program, policymakers should consider several guiding questions: *Should a carbon pricing policy be revenue-neutral and balanced by tax cuts in other areas? Should it be used for public debt and deficit reduction? Should carbon revenues be used for increased government spending? If yes, should revenues go to the national treasury and be used for general governmental expenditures, for investments into climate change, or other public priorities?*

With these in mind, carbon revenues can be used to achieve a wide range of objectives. Several common uses are outlined below including: using revenues to reduce other taxes, addressing household fairness and transition challenges, providing transitional support to industry, reducing debt, directing revenues to general spending, investing in emission reduction and climate investment. Many jurisdictions employ a combination of these revenue uses to achieve multiple objectives simultaneously.

1) USING REVENUES TO REDUCE OTHER TAXES

Carbon taxes are 'Pigouvian' taxes - or taxes on vice. This means that they tax market activities with negative externalities (e.g. emissions that contribute to global warming) whose costs are not reflected in the normal market price. These taxes are often viewed as superior to taxes on socially valuable activities such as household or corporate income, consumption of goods, or investment in infrastructure or R&D. Such taxes are often considered 'distortionary' and governments may therefore seek to reduce them.

This is why a carbon tax can increase the efficiency of the tax system even if it is revenue neutral - all increases in government revenue from carbon taxes or trading schemes are offset by reduction of other taxes. Consequently, there is no net increase in government intake. This option has been proposed as a way of simultaneously addressing climate change and paying for the removal of other taxes that have negative side effects on economic activity.

Using revenues to reduce taxes on household and corporate income can lead to stronger economic growth and higher employment. For example, the recent **French energy tax reform introduced a carbon component** in the calculation of domestic consumption taxes. The carbon component covers all fossil fuels and reached EUR 22 per tCO_2 in 2016. It is expected to generate €4 billion in revenues in 2016. A major part of these revenues

BRITISH COLUMBIA

One example of a revenue-neutral approach is British Columbia's carbon tax, which is mandated under provincial law to be revenue neutral. Since introduction of the tax in 2008, British Columbia's uses of carbon tax proceeds include business tax cuts and tax credits, personal income tax cuts (targeted at lower-income categories), low-income tax credits, and reductions in property taxes. For the 2015/16 budget, British Columbia anticipates generating CAD 1.2 billion in carbon tax revenues, and will direct approximately 2/3 of the offsetting tax reductions to business and 1/3 to individuals. Regardless of usage, which changes annually, in order to achieve revenue neutrality the government designs a package of taxation reductions to match the anticipated revenues and issues a public report outlining the use of revenues.

contribute to funding the reduction in labor taxation through the implementation of a tax credit for encouraging competitiveness and jobs called CICE (Crédit d'impôt pour la compétitivité et l'emploi).

BENEFITS

- *Promote economic activity:* Improves and rationalizes tax policy and can reduce distortionary effects of other taxes in order to promote economic activity at both the household and corporate level.
- *Improves the efficiency of the tax system:* Allowing a shift to taxes with lower distortions, administrative collection costs and lower evasion rates has the add-on benefit of improving public acceptance of taxes – by taxing "bads" (pollution) rather than "goods" (labor, income, etc.).

CHALLENGES

- *Preferential treatment:* Depending on design, could impact some firms or households more than others, possibly requiring other tax adjustments to avoid competitive distortions or undue impact on lower income brackets.
- *Ensuring efficacy of carbon price:* Reducing other taxes may reduce the effectiveness of carbon pricing policy. Carefully monitoring the behavior of economic agents is essential in order to achieve the desired level of GHG reductions.

2) DIRECTING REVENUES TO HOUSEHOLDS

SUPPORTING VULNERABLE HOUSEHOLDS

Under carbon pricing policies, consumers may face higher energy prices which can be particular impactful on low-income households that generally spend a proportionally larger share of their incomes on energy products. To address these concerns up front and alleviate impacts on vulnerable groups, governments can direct revenue use accordingly. As outlined above, revenues can go toward tax reductions or tax credits targeted at reducing the overall tax burden on households to compensate for increased energy prices. In addition, revenues can also be transferred to households through programs to subsidize energy efficiency upgrades to help households lower their energy use and costs. For example, **France has committed EU ETS revenues to fund the National Agency for Housing to support energy efficiency investments** in buildings, including **for low-income households.** Carbon revenues also can be a broader tool for addressing inequality and the needs of the poor and disenfranchised. This is the case in **California, where state law stipulates that at least 25 percent of auction revenues from the State's cap-and-trade program go to projects that benefit disadvantaged communities—such as the Affordable Housing and Sustainable Communities Program**—and at least 10 percent to projects located within disadvantaged communities. Cash transfers can also be targeted to low-income households in particular to address fairness concerns.

UNIVERSAL OR TARGETED CASH TRANSFERS

Universal cash transfers, often referred to as "cap-and-dividend," "tax-and-dividend" or "fee-and-dividend" can also direct revenues to households. These cash transfers are universal equal payments to all citizens or residents in a jurisdiction. Some proposed cash dividend programs are modeled around the **Alaska Permanent Fund**, which for over three decades has paid out annual dividends to residents from mineral leasing revenues.

A number of jurisdictions with carbon pricing have forms of carbon dividends. For example, **a portion of the revenue from Switzerland's CO_2 levy is redistributed equally to all residents of Switzerland** through health insurers, with the amount settled against health insurance premiums.

TRANSITIONAL JOB ASSISTANCE

Carbon revenues might also be used to assist workers in transition from select industries that are significantly impacted by a carbon pricing over the longer term, such as coal mining, to better align job skills with needs of a lower-carbon economy. Spending on job training, career assistance and other community supports may be a priority use of resources in some jurisdictions.

BENEFITS

- *Address household affordability:* Tax reductions or spending programs that transfer funds to households can help address the social impact of increased energy bills if targeted at low-income or vulnerable populations.
- *Enhance public support:* By providing tangible benefits to households, this approach can improve public support and perceived ownership of the carbon pricing program.

CHALLENGES

- *Potentially missed opportunities to improve productivity of the overall economy.*

3) PROVIDING TRANSITIONAL SUPPORT TO INDUSTRY

Although the adoption of carbon pricing can spur investment in innovation and modernization that can lead to competitive advantages and economic gain, a common

concern is that carbon pricing may threaten business competitiveness. As carbon is not priced globally, there is a chance that certain industries, especially energy-intensive and trade-exposed industries, may initially face competiveness pressures from companies in other jurisdictions not facing a similar carbon cost.

Carbon revenues can be used to help address these concerns. Revenues can fund production and investment tax credits, R&D tax credits, or support energy efficiency investment and innovation to help companies transition to a low-carbon future. For example, the **UK national Climate Change Levy** addressed the concern of businesses about how they might adjust to potentially higher energy costs. The package involved three main elements: reduced tax rates for the most exposed industries; funding for corporate participation in the UK's pilot emissions trading system (a precursor to the EU ETS); and establishment of the Carbon Trust, which was set up as a publicly funded company to help business improve energy efficiency and to fund low carbon innovation. The energy efficiency programs saved business several billion pounds in energy expenditures, and helped to materially reduce costs of key industries, including offshore wind.

BENEFITS

- *Drive economic growth:* Targeted R&D and investment credits could help improve economic performance of supported industries.
- *Reduce industry opposition:* By reducing taxes while implementing a carbon price, this approach can address concerns of impacted industries.

CHALLENGES

- *Ensuring efficacy of carbon price:* Spending must be carefully crafted to properly align with the emission reductions goals of the carbon pricing policy; care must be taken to prevent/correct unwanted distortions to the carbon pricing instrument.
- *Picking winners and vested interests:* Supporting specific firms and sectors can create competitive disadvantage to others. Supported industries may not be viable in the long-term. This also creates risk of capture by vested interests which become dependent on public funds, and invest in capturing government funds rather than improving productivity.

4) REDUCING PUBLIC DEBT AND/OR DEFICIT

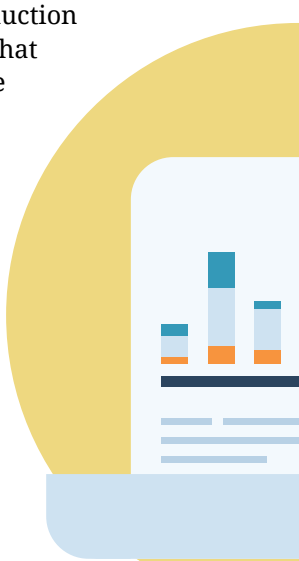
High levels of national debt and fiscal deficit can impact economic growth by increasing interest rates, reducing or crowding out private sector investment and necessitating future tax increases to pay the principal or interest on the debt. Governments looking to pay down debt or close existing budget deficits may therefore find channeling revenues to debt reduction to be an attractive use of revenues. For example, the 2010 introduction of the **Irish tax on carbon pollution raised much-needed revenue** and may have avoided the necessity for even harsher fiscal tightening measures during the economic downturn.

BENEFITS

- *Long-term economic benefits:* Reducing high debt levels could reduce debt-servicing costs, reduce perceived risk to creditors thereby lowering the cost of borrowing, and improve economic growth.
- *Intergenerational fairness:* Debt reduction reduces the cost of climate change that must eventually be paid back by future generations.

CHALLENGES

- *Limited public appeal:* Debt reduction is a less tangible use of revenues to the general public and may garner less active public support.
- *Does not deliver direct environmental benefit.*



5) USING REVENUES FOR GENERAL SPENDING

Carbon revenues are only one of the many types of revenues governments collect; these funds can similarly be used to finance a wide array of government activities. All government revenues not earmarked for specific purposes enter the public treasury. As general public resources, these funds can then be directed through the regular policymaking process towards any public priority for which resources are currently insufficient. This covers the full range of public spending priorities from health and education to infrastructure and defense, and allows for a shift in allocation when budgetary needs change over time. This approach is considered by economists to promote efficient and flexible allocation of budget resources to governments' strategic priorities. **In the EU ETS, 9 out of 28 member states** (including for example Denmark, Finland, Ireland, Poland, Sweden and the UK) have opted to direct their auction revenues to their

respective national treasuries. This also may be attractive to lower-income countries.

BENEFITS

- *Increased resource availability:* Increased availability of funds for critical near- and long-term investments that may currently be under-resourced in the budgeting process.
- *Economic support:* Funds can be used to promote investment, job creation and economic competitiveness and improve budget balance.

CHALLENGE

- *Lack of clear returns:* By directing revenues to general budgets, there is less clarity for public as to the specific impact of carbon revenues—including environmental benefits.



6) PROVIDING FUNDING FOR CLIMATE INVESTMENTS

Revenues can be spent directly on climate change-related investments. This can enhance the impact of climate policies by combining a price signal with targeted spending. This climate-specific investment can include, for example, support for low-carbon energy deployment and energy efficiency, research and innovation, climate friendly infrastructure, and international commitments. Furthermore, public investments, if carefully used, can also help to crowd-in additional private finance for growing clean industries that are urgently needed to fund the transition to a low-carbon economy.

SUPPORT FOR LOW CARBON TECHNOLOGY AND INNOVATION

Using revenues for investment in clean energy deployment is particularly widespread. Spending on renewables and energy efficiency investments accounts for **more than half of all revenue spending in EU ETS participant states and of the Regional Greenhouse Gas Initiative (RGGI) in the northeastern United States.**

Directing revenues to 'innovation funds' that facilitate the development of low-carbon technologies is also an increasingly common option. For example, **Quebec and California have also chosen to direct some carbon revenues into dedicated low-carbon innovation funds** where they can then target specific barriers that prevent the adoption of improved technologies. **In Alberta, facilities can directly contribute to the province's Climate Change and Emissions Management Fund** as one of the four compliance options under the Specified Gas Emitters Regulation. The fixed fee of CAD 15 per tCO_2 is then used in this dedicated fund to achieve further emissions reductions in Alberta and help the province to adapt to climate change through green technology and innovative solutions.

From 2009 to 2012, RGGI states directed over 70% of revenues from the cap-and-trade program to energy efficiency and renewable energy projects—these are estimated to avoid 8 million tons of CO_2 emissions and save consumers more than USD 2 billion in energy savings.

Public infrastructure may be another area to focus investments, and may produce environmental and economic gains depending on the investment. For example, some jurisdictions like California have invested in lowering emissions through spending on improved public transportation.

California has chosen to direct a significant share of its annual cap-and-trade revenues, amounting to some USD 900 million thus far, to build high-speed rail and intercity rail networks to promote the use of public transit, and to lower emissions from transportation. Similarly, in Québec, all cap-and-trade program revenues are put into a dedicated Fund to address climate change. Estimated at more than CAD 3 billion between 2013 and 2020, two-thirds of the revenues are targeted to reduce GHG emissions in the transport sector via investments in public transit and transport system electrification.

INTERNATIONAL COMMITMENTS

Developed country governments may use revenues to fund international climate change commitments, such as contributions to multilateral climate change funds for developing country assistance. For example, the **United Kingdom has used part of the financial equivalent of its auction revenues to support international climate finance** by investing in Clean Investment Funds (CIFs), a series of funds totaling several billion dollars that assist developing countries in combatting climate change. **In the case of the German government's Special Energy and Climate Fund**—all revenues from emissions trading have been available for measures geared towards transforming the energy system (Energiewende) and for domestic and international climate protection since 2012.

BENEFITS

- *Funding prioritization:* Prioritization of critical climate investments that are often not funded at necessary levels to achieve climate goals.
- *Corrective potential:* Addressing issues of equity, insofar as polluters are often individuals and firms that have profited from emitting activities at the expense of the broader public, particularly or adaptation measures targeted at those adversely impacted by climate change.
- *Thematic coherence and public support:* Spending revenues from climate pollution to solve and redress climate-related problems has a thematic coherence that can be appealing to the public.

CHALLENGES

- *Market distortions:* Redistributing carbon revenues can create market distortions, as with many spending policies.
- *Negative perception of increased public expenditures:* As above, the growth of government spending is often viewed negatively, especially in industrialized countries.
- *Risk of inefficiency and budget disintegration:* Advanced earmarking limits the flexibility and efficiency of allocating public funds across dynamically changing social priorities. It creates precedence, which is followed by other sectors. Care must be taken to ensure that the carbon revenue destination is aligned with other policies.
- *Inadequate level of expenditures:* Spending programs tied to specific revenue sources run the risk of being underfunded if revenues shrink or are inefficiently allocated if surge in revenues exceed expenditure needs.
- *Picking winners:* Earmarking can create a vested interest dependent on particular revenue sources and outside of the regular fiscal scrutiny and discipline.

SEIZING OPPORTUNITIES AND MANAGING TRADE-OFFS

Decisions on the use of carbon pricing revenues are part of a broader public discussion on government revenue and expenditure. Arguments can be made for fiscal balancing

Summary Table: Pros and Cons of Common Options for Revenue Use

Approach	Opportunities	Challenges
Using Revenues to Reduce Other Taxes	• Improve efficiency of tax system burden to improve public support • Promote economic activity	• Preferential treatment of certain groups • Ensuring efficacy of carbon price
Directing Revenues to Households	• Address household fairness • Enhance public support	• Potentially missed productivity opportunities
Transitional Support for Industry	• Drive economic growth • Reduce industry opposition	• Ensuring efficacy of carbon price • Picking winners and vested interests
Public Debt and Deficit Reduction	• Long-term economic benefits • Intergenerational affordability	• Limited public appeal
Using Revenues for General Spending	• Increased resource availability • Economic support	• Lack of clear returns
Funding for Climate Investments	• Funding prioritization • Corrective potential • Thematic coherence and public support	• Market distortions • Negative perception of Increased public spending • Risk of inefficiency • Inadequate level of expenditures • Picking winners

and cutting taxes, increasing spending and supporting industry or households or using carbon revenues for public investments in climate-related projects. Invariably, hard choices must be made. Earmarking is often frowned upon by economists as inefficient. Yet, skeptical publics often prefer to clearly understand what they are funding with their tax payments. Therefore, earmarking might facilitate this understanding and so increase public support for carbon pricing.

In the end, these decisions are about public priorities and circumstances that can dramatically differ from one jurisdiction to another. While one jurisdiction may place most value increasing the environmental impact of the carbon pricing scheme, others may need to use funds toward addressing economic issues and competitiveness concerns. Furthermore, others might want to put household fairness first or only think about public acceptability of the revenue use.

Defining the use of carbon revenues is not only a challenge, but also an opportunity for jurisdictions to customize the policy according to their individual priorities. Most jurisdictions will have multiple priorities which can justify multiple approaches to revenue recycling. For example, the state of California applies its emissions trading scheme revenues to eight different programs and British Columbia applies its carbon tax revenue to many different types of tax cuts and credits.

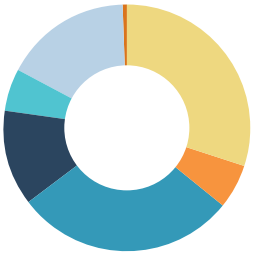
Additionally, priorities can change over time. Often, they will necessarily shift when, for example, competiveness pressures become less prominent due to increased carbon pricing implementation on a global scale. Therefore, periodic review of revenue recycling priorities is necessary. Regardless of choices made, all revenue options have costs and benefits, and should be carefully studied. Careful study, public engagement and stakeholder consultations, as well as an effective communication strategy that turns the economic 'burden' of carbon pricing into a fiscal 'benefit,' are key ingredients to successfully seizing the opportunities from carbon pricing revenues.

USE OF REVENUES FROM CORPORATE INTERNAL CARBON PRICING

Companies across a diverse range of sectors increasingly see carbon pricing as the most efficient and effective means to cut carbon emissions. Leading companies are taking steps to incorporate the cost of carbon into decision-making processes by using an internal "shadow price" on carbon or, in some cases, internal fee-and-dividend programs. These carbon fee programs can help meet emissions reduction targets and generate their own internal 'revenues' that can then be put toward companies' selected spending priorities. There are many options for the use of these revenues and, while there is minimal comparative data available on current usage, revenues can help achieve additional emissions reduction and sustainability priorities.

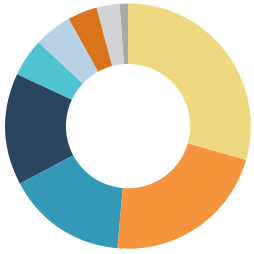
Example: Beginning in 2012, Microsoft made a company-wide carbon neutrality commitment and implemented an internal carbon fee program to achieve it, using a carbon price to hold business units financially responsible for their emissions. Funds received through the program are earmarked for environmental programs. In 2015, more than half of carbon fee fund investments went to green power and sustainable energy innovation, and the rest toward internal carbon reduction grants, carbon offset community projects and program management. The projects funded through the carbon fee help the company reduce emissions and operate more efficiently.

Figure 1: Revenue Spending by EU Member States (2013–2015)



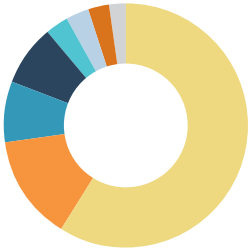
Renewables support	1.62
Energy Efficiency support	1.58
International support and climate finance	704.7
Conservation and adaptation	133.9
Low-emissions infrastructure	678.1
Transversal research and development	296.9
Mixed spending	130.1
Other public spending (not directly resulting in emissions reductions)	389.1
ETS administration costs	8.9

Figure 2: Revenue Spending by RGGI Member States (2008–2013)



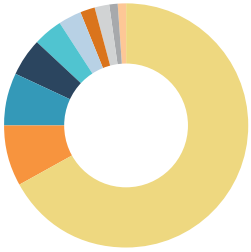
- Residential efficiency and clean energy
- Business and commercial efficiency and clean energy
- Low-income rate relief and efficiency
- Municipal, state and community
- Clean technology and
- Administration
- General rate relief
- Other
- RGGI, Inc.

Figure 3: California's Revenue Spending Plan (2013–2015)



Access to public and low-carbon transit	550
Affordable housing, Transit and Sustainable Communities	130
Housing energy efficiency and renewable energy	75
Conservation projects (wetlands and sustainable forests)	67
Water efficiency projects	30
Daily digesters R&D and water efficiency (Dept. of Food and Agriculture)	25
Waster diversion	25
Energy efficiency in public buildings	20

Figure 4: Québec's Revenue Spending Plan (2013–2020)



Sustainable transport	1776.7
Transition to a low-carbon economy (including carbon markets)	224.4
Sustainablility of buildings	188.5
Social Programs	143.5
Research and development of technology	100.6
Community engagement	91.5
Renewable energy	50.5
Monitoring and reporting	45
Biodiversity	24
Sustainable agriculture and waste management	20.3

Source: Vaidyula, M. and Alberola, M. (2016)

FOR MORE INFORMATION

This Executive Briefing was prepared by the Carbon Pricing Leadership Coalition, which includes governments, businesses and civil society groups working together to identify and address the key challenges to successful use of carbon pricing as a way to combat climate change. The content for this brief is a synthesis of ideas and literature derived from the key references on carbon pricing listed here, which are also available at the CPLC website: **www.carbonpricingleadership.org**.

For more information on this topic, visit:
http://www.carbonpricingleadership.org/resource-library/

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