

# Carbon Fees Reduce Emissions Even When Fees Are Recycled As Dividends

Michael Jones and Jonathan Marshall

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**Abstract:** *Contrary to a common misunderstanding, the dividend does not prevent CF&D from reducing GHG emissions. Facing significantly higher prices for carbon-based goods, and devoting only a fraction of their dividend checks to such goods, households will reduce their purchases of carbon-based goods decisively despite the recycling of the revenue from the fees.*

A sizable, credible, and broadly applied tax or fee on the sale of fossil fuels (“carbon fee”) will greatly reduce emissions of greenhouse gases. The evidence from sophisticated economic models and the international experience is [convincing](#). Nonetheless, when CCL volunteers advocate for the carbon fee and dividend (CF&D), they often encounter skepticism about its effectiveness. In particular, some questioners wonder *why people will reduce their purchases of carbon-based goods when they are getting their money back through a dividend*.

The simplest answer is that consumers will still want to spend their dividend in ways that deliver the most “bang” (value) for the buck. By raising the cost of carbon-intensive goods and services, the fee will steer spending by individuals and businesses toward lower-carbon substitutes that cost relatively less. The dividend won’t change that calculus. It will simply ensure that most people—particularly those of low and middle income—don’t experience a shock to their overall purchasing power and standard of living as prices of traditional necessities like gasoline and electricity begin to climb.

## **The Dividend is Not a Personalized Refund**

Strictly speaking, households are *not* getting “their” money back. The dividend is not a refund. With a refund, the more you pay for something, the more you get back; so, you have some incentive to buy more. The dividend, on the other hand, is based on the entire pool of fees collected nationally, divided equally among all eligible recipients. No one spends enough to affect the size of that national pool, nor the dividend they collect. The dividend does not affect the *price* of carbon-based goods and services, what consumers pay at the margin when buying more. That job is left to the fee.

## **The Fee Induces Substitution Even When the Dividend Maintains Purchasing Power**

Consider the following example. You can choose to buy electricity from a public utility or install solar panels. The utility meets your current needs for \$800 a year. In comparison, the panels cost \$1,000 each year to lease; so, unless you are a fervent environmentalist, you forgo them. Now suppose that a fee on coal and natural gas boosts your annual utility bill to \$1,100. You will likely go ahead and install the solar panels, saving \$100 a year.

At this point, the “saving” from solar panels is only relative to the alternative, more expensive utility power. You are still paying \$200 more than before for power. Now suppose a \$300

dividend check arrives in the mail. Will you go back to buying your power from the utility, spending your entire dividend on electricity, or will you stick with solar and save the \$100 that remains of the dividend? Most people would stick with the greener option to save money.

This example highlights the substitutions that households will undertake, despite the cost of living adjustment provided by the dividend: the price increase powerfully shifts spending away from carbon-based goods, while the receipt of the check provides but a trivial offset.<sup>1</sup> Businesses face similar options. For instance, to keep production costs as low as possible, public utilities will generate electricity with cleaner fossil fuels or non-carbon sources. Businesses receive no dividends but will nonetheless reduce the carbon intensity of their products.

### **Price Incentives to Reduce Consumption Dominate Spending from the Dividend Check**

In principle, the effect of a carbon fee on emissions could be offset by steeply rising personal incomes, and thus increase overall consumption. The CF&D, however, does not increase average real incomes at all. At best, the dividend maintains the purchasing power of our disposable income in the face of the higher prices of carbon based goods. Consequently, CF&D leaves the aggregate demand for goods and services essentially unchanged.<sup>2</sup>

### **Fee and Dividend Work Hand-in-Hand**

In short, the dividend does not subvert carbon taxes, it enables them. From an *economic* perspective, the fees and the method of recycling the revenues have different roles: the size, coverage, and permanence of fees govern the extent of greenhouse gas reductions, and the method of revenue recycling governs the distribution of its burden.<sup>3</sup> From a *political* perspective, the fees and dividend work hand-in-hand. By promoting social equity and political support from the majority of voters who benefit, the dividend will make any fee on fossil fuels more durable and more likely to win support across party lines. It will thus be an important key to unleashing the power of the market to fight climate change.

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<sup>1</sup> By 2030, the fee mandated by the Energy Efficiency and Carbon Dividend Act will increase the prices of carbon-based goods (e.g., electricity and gasoline) on the order of 25 per cent, but the recycled dividends will constitute no more than 2 per cent of total spending on all products, a trivial offset. The net impact, including all sources of demand for carbon-based goods, is projected to be a decline in annual emissions on the order of 40 per cent. (Preliminary results of the Columbia-Rhodium model, Noah Kaufman, 2019 CCL National Conference presentation).

<sup>2</sup> There may be small effects in the short run. For example, the progressive transfer of the dividend from households with low propensities to spend to those with high propensities can increase aggregate demand; and lessened incentives for business investment from the lower productivity caused by distortions from the carbon tax will reduce it. In the longer run relevant for this analysis, corrective forces will bring spending back into line with production under full employment.

<sup>3</sup> The EMF 32 multi-model simulation of a revenue neutral carbon tax found a) that emissions (given fees) are similar under the different recycling scenarios (e.g., dividends vs reductions in taxes on labor income or capital income); b) the dividends are the most progressive form of recycling; and c) that dividends are the least efficient, because they do not lessen other, distorting taxes. For a fee that starts at \$50 and increases at 5 per cent per year, over the first twenty years, all of the taxes yield small costs of mitigation, ranging from 0.65 (dividend) to 0.45 (labor) to 0.26 (capital) per cent of GDP, costs that do not account for benefits of clean air and are dwarfed by the future benefits of improved climate. See *Climate Change Economics*, vol. 9, no. 1, 2018.