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## HOLDING DOWN INCREASES IN UTILITY BILLS IS A FLAWED WAY TO PROTECT CONSUMERS WHILE FIGHTING GLOBAL WARMING

### Direct Consumer Rebates a Better Approach

by Chad Stone

Policymakers who are sensitive to the impact on consumers of higher energy prices stemming from climate-change policies should be wary of approaches to consumer relief that keep utility bills artificially low. A more straightforward — and effective — way to provide consumer relief is to refund money directly to consumers through an energy refund (or rebate), financed with proceeds from auctioning the emissions allowances that would be used to enforce an emissions cap.

This analysis explains how higher prices for energy and energy-related products due to emissions restrictions under a cap-and-trade system would affect households' budgets. It identifies several key problems with proposals to give the local utility companies that serve residential and business customers (known as local distribution companies, or LDCs) a portion of the emissions allowances for free and require them to use these allowances to hold down increases in their customers' bills. It also explains why giving allowances to LDCs to suppress increases in utility bills is not the "silver bullet" some proponents have claimed for addressing regional differences in the impact of an emissions cap on household budgets.

#### KEY FINDINGS

- To protect consumers from the higher energy prices resulting from a cap on greenhouse-gas emissions, some have proposed using a substantial portion of the proceeds from climate legislation to give local utility companies subsidies to hold down increases in their customers' bills. This approach has three flaws.
- First, it would offset *half or less* of the added costs that households would face under an emissions cap, because the majority of the added costs come in areas *other than* home utility bills.
- Second, it relies on state utility regulators to ensure that the local utility companies use the subsidies to produce well-targeted and effective consumer relief, but the quality of state regulation of utilities is uneven across the country.
- Third, as the Congressional Budget Office and leading economists have noted, incentives to conserve home energy would be weaker, which would keep home energy consumption higher than it otherwise would be. That, in turn would force emissions reductions outside the utility sector to be greater, pushing up the prices of gasoline and other energy-related products further and increasing the economic cost of meeting the emissions cap.
- A more straightforward and effective way to provide consumer relief would be to provide consumers with direct refunds through an energy rebate paid for with some of the proceeds from auctioning emissions allowances.

## How Emissions Restrictions Affect Consumers' Budgets

Putting restrictions on greenhouse-gas emissions is necessary to avoid the costly and potentially catastrophic environmental and economic consequences from global warming. Those restrictions would work by raising the cost of activities that produce such emissions. The added costs are ultimately passed on to consumers, who will pay more for home energy, gasoline, and a broad array of goods and services whose production and transportation to market are energy-intensive.<sup>1</sup>

How much putting a price on greenhouse gas pollution would reduce the purchasing power of the average household in the bottom 20 percent of the income scale — where the average income is only about \$15,000 — depends on a number of factors, including, importantly, the stringency of the emissions cap. The cost is likely to rise from several hundred dollars a year when emissions reductions are relatively modest to substantially more as the emissions cap tightens to achieve greater reductions.<sup>2</sup> Increases in utility bills for electricity and natural gas would account for a little less than half of that impact, according to our estimates. About a quarter of the impact on these households' budgets would come from higher gasoline prices. The rest comes indirectly from the impact of higher energy prices on the production and transportation of an array of other goods and services.<sup>3</sup>

Because low-income households spend a larger share of their incomes on energy and energy-related products than better-off households do, they would be hit hardest by the higher prices from an emissions cap. But middle-income households will feel the squeeze as well. The increase in costs they would face would be smaller as a share of their incomes but larger in dollars.

Increases in electric and gas utility bills would account for only about 40 percent of the impact on middle-income households' budgets. The other 60 percent would come from increases in the costs of other forms of energy and energy products. (Table 1 in the Appendix provides a breakdown of the composition of the increases in costs that households would face, by income group and type of energy consumption.)

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<sup>1</sup> Under a cap-and-trade system, electricity generators, petroleum refiners, and other entities would be required to hold an emissions allowance for each ton of greenhouse gas emissions for which they are responsible. By and large, they would pass the cost of holding the allowances on to consumers, regardless of whether they received the allowances for free or purchased them at market prices. This is because limiting emissions (and requiring allowances for those emissions) reduces the supply of fossil-fuel energy that can be used; with the supply held down, prices have to rise to bring the quantity of fossil-fuel energy demanded down to meet the available supply. Except in the case of tightly regulated utilities, giving allowances away for free provides windfall profits to producers rather than lower prices for consumers.

<sup>2</sup> CBPP has estimated that a relatively modest 15 percent reduction in projected emissions would reduce purchasing power in the bottom 20 percent of the population by roughly \$750 per year. As described in the Appendix, our approach uses methods like those used by the Congressional Budget Office to estimate the distributional impact of putting a price on carbon dioxide emissions. The size of the impact for any given reduction in emissions level is sensitive to assumptions about how intensively consumers are using energy before the policy is implemented and the responsiveness of consumers to changes in the prices of carbon-intensive goods and services ("demand elasticity"). CBPP's \$750 annual cost is derived from specific assumptions about these factors based on data from a few years ago and is roughly consistent with CBO's current estimate of about \$700, which is derived from similar data and assumptions.

<sup>3</sup> The relative importance of utility bills could be even less than these estimates suggest. CBO, for example, reports that on average, about 40 percent of the impact on households' costs comes from indirect factors.

## Emissions Allowances Can Be Used to Offset Consumer Impacts

The most straightforward way to offset the impacts of a cap-and-trade system on consumers' budgets is for the government to sell the emissions allowances to the electricity generators, petroleum refiners, and other entities required to hold them in a cap-and-trade system and to refund the proceeds to consumers, or at least to refund enough of the proceeds to offset the increased costs that consumers up to certain income levels would bear.

Energy refunds or rebates would protect households against the loss of purchasing power from higher energy-related prices without blunting consumers' incentives to respond to those higher prices by conserving and investing in energy efficiency improvements. Because energy-related products will cost more, households with the flexibility to conserve energy or to invest more in energy efficiency will get more value for their budget dollar by taking these steps than by using their refund to maintain their old ways of energy consumption.

The utility company approach takes a different tack and allocates a portion of the emissions allowances *free* to local utility companies. The local utilities, or LDCs, would not have a direct use for the allowances they were given, because they do not generate the electricity they distribute and thus don't themselves emit greenhouse gases. Instead, the utility companies would sell the allowances and use the proceeds to offset the higher prices they would have to pay under a cap-and-trade system for the electricity generated by their affiliates or that they purchase in the competitive wholesale market. State utility regulators would then have the task of making sure that LDCs used their valuable emissions allowances as intended to keep higher prices for fossil fuels from translating into higher utility bills.

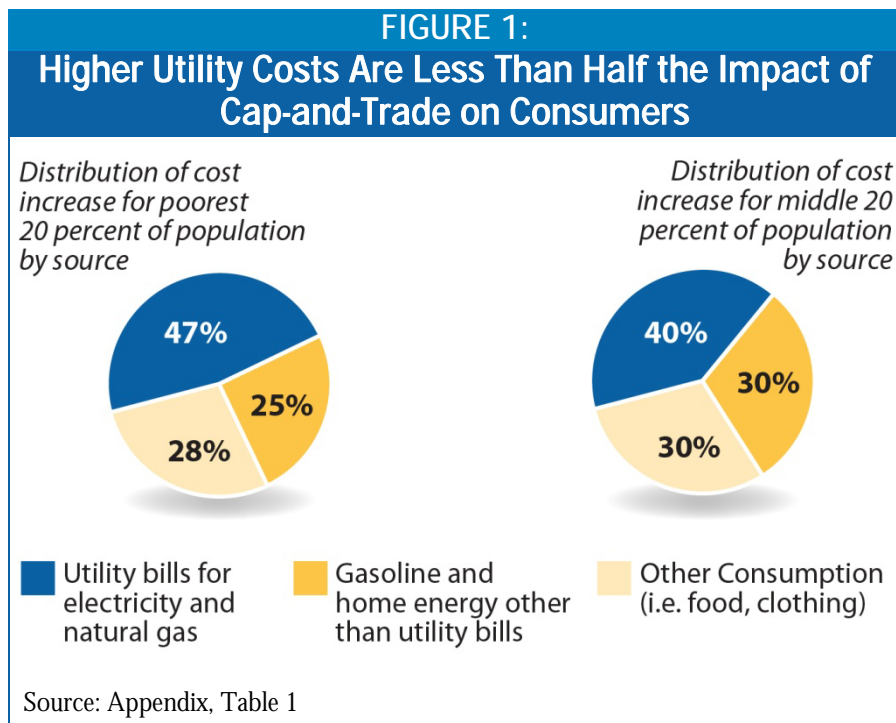
### Three Large Problems with the LDC Approach

Several considerations militate against using an LDC approach that is aimed at keeping customers' bills from increasing as the primary vehicle for consumer relief in climate change policy. Three concerns in particular, stand out.

- **Such an approach would not offset the bulk of consumers' increased costs.** As noted, increased utility bills would account for *less than half* of the impact of higher energy-related prices on consumers' budgets (see Figure 1). Therefore, having LDCs suppress increases in utility bills would fall well short of restoring consumers' lost purchasing power due to the higher energy prices.

This would be even more true for middle-income households than low-income ones. Figure 1 shows that as one moves up the income scale, increases in costs for items other than home utility bills would make up an increasing share of the impact of higher energy prices on families' budgets.

In addition, if consumer relief were channeled through LDCs, households that heat with fuel oil would be bypassed, unless they were assisted through some supplementary measure. Otherwise, they would fail to receive relief from their higher home heating costs, much less their higher costs for gasoline and other energy-related products.



- **State regulation of LDCs is uneven.** Proponents of the LDC approach argue that LDCs are regulated utilities and will be required to use the allowances they are given to benefit consumers. In fact, the quality of state utility regulation is uneven across the country. The mere fact that utilities are regulated is not a guarantee that free allowances to LDCs will produce well-targeted and effective consumer relief everywhere. LDCs' ideas of what would be the best use of the allowances would not necessarily align with policymakers' goals. This problem would be lessened if Congress set rules for how the LDCs were to use these funds. Depending on the strength of the regulators in a state, however, some of the funds still might not be used in optimal fashion or might go for overhead or turn in utility companies' bottom lines.
- **This approach would cause prices for other forms of energy and energy-related products to rise more and would raise the overall cost of meeting the cap.** Keeping utility bills low under a cap-and-trade system would blunt the "price signal" that an emissions cap is designed to send in order to encourage more efficient home (and other) energy consumption. It thus would keep electric and gas consumption higher than it otherwise would be. (This effect might be lessened by certain federal rules specifying how the LDCs are to deliver the consumer relief but would not be eliminated.<sup>4</sup>) Reductions in the use of *other* forms of energy would then have to be greater in order to produce total emissions reductions sufficiently large to comply with the overall emissions cap.

<sup>4</sup> Providing relief in the form of reductions in the fixed portion of utility bill charges preserves the price signal of higher rates in the variable portion of the bill to the maximum extent possible, but that effect is largely blunted if consumers look only at the bottom line of their bill, where they would not experience the "sticker shock" that could prompt changes in behavior.

As a result, while consumers would have lower electricity bills under the LDC approach than under an alternative approach such as direct consumer rebates, they would face higher expenses for gasoline and all indirect uses of energy (i.e., for goods and services that use energy in their manufacture or transport to market). Douglas Elmendorf, Director of the Congressional Budget Office, recently explained this problem:

One option that policymakers have considered is to give allowances to local distribution companies, which purchase electricity from generators and sell it to households. ...

Muting the increase in electricity prices would increase the overall cost of the policy because it would reduce households' incentives to undertake measures to reduce their electricity consumption, such as choosing more efficient appliances or turning down their thermostats. As a result, the burden of meeting the cap would fall more heavily on other sectors, and that additional burden would be reflected in higher prices for other goods and services that households purchase. (For example, the price of gasoline would probably increase more than would otherwise be the case.) As a result, determining the distributional consequences of having the local distribution companies use the value of the allowances to offset increases in electricity prices would require accounting both for the protection that households would receive from electricity price increases and the corresponding increases in the prices of other goods and services that they purchase.<sup>5</sup>

The same point was made last year by Peter Orszag, now the Director of the Office of Management and Budget. Orszag explained, "In regulated electricity industries, distributing the permits at no cost might mitigate or prevent price increases in those markets but only at the cost of requiring even larger price increases in other markets."<sup>6</sup>

To the extent that it blunts emissions reductions in the utility sector, the LDC approach would increase the overall cost to society of meeting the emissions cap. As economist Dallas Burtraw of the non-partisan Resources for the Future noted in congressional testimony earlier this year: "The protection of [individual] sectors from changing prices leads to less consumer response. Consequently, greater emissions reductions have to be achieved in other sectors. In the case of free distribution to electricity consumers (through distribution to local distribution companies), our research indicates this could cause the allowance price to rise by 15 percent."<sup>7</sup> The higher

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<sup>5</sup> Congressional Budget Office, Statement of Douglas Elmendorf, Director, "The Distribution of Revenues from a Cap-and-Trade Program for CO<sub>2</sub> Emissions," testimony before the Committee on Finance, U.S. Senate, May 7, 2009. Similarly, Alan Viard of the American Enterprise Institute has observed that if electric bills are held down, consumers will "buy more electricity, causing the utilities to reduce emissions by less than they would have done in the absence of free allocation. The cap-and-trade system rigidly requires, however, a specified volume of national emission reductions; if one sector makes fewer reductions, the rest of the economy must make more to meet the fixed cap." See Alan Viard, "Don't Give Away the Cap-and-Trade Permits!," American Enterprise Institute, May 4, 2009.

<sup>6</sup> Congressional Budget Office Statement of Peter Orszag, Director, "Containing the Cost of a Cap-and-Trade Program for Carbon Dioxide Emissions," testimony before the Committee on Energy and National Resources, U.S. Senate, May 20, 2008.

<sup>7</sup> Statement of Dallas Burtraw, Ph. D., Senior Fellow, Resources for the Future, Testimony Before the Subcommittee on Income Security and Family Support of the House Committee on Ways and Means, March 12, 2009.

allowance price reflects the fact that achieving the emissions cap becomes more costly when price signals are suppressed in some sectors. Economists from across the political spectrum have made this point.<sup>8</sup>

Most recently, the Environmental Protection Agency, in an analysis accompanying its preliminary assessment of the Waxman-Markey discussion draft now being considered by the House Energy and Commerce Committee, said, “Returning the allowance value to consumers of electricity via local distribution companies in a non-lump sum fashion prevents electricity prices from rising but makes the cap-and-trade policy more costly overall. . . .since greater emission reductions have to be achieved by other sectors of the economy.”<sup>9</sup> (EPA also noted, speaking of a rebate approach, “Auctioned allowances with lump-sum distribution of revenues to households is the least regressive cap-and-trade policy analyzed [in the economics literature] and has been shown to be progressive in some cases.”<sup>10</sup>)

### **LDC Approach Not Necessarily the Best Way to Address Regional Variation**

Consumers living in regions heavily dependent on fossil-fuel power are likely to perceive that they will bear a higher burden under climate change legislation than consumers living in regions with more hydroelectric or nuclear power. Similarly, rural consumers are likely to perceive that they will bear a higher burden because they drive more and use more gasoline. Some advocates of the LDC approach argue that it reduces these regional differences.

However, the regional differences are smaller than they are sometimes portrayed to be. A proper assessment of the importance of regional variation should look at households’ total energy costs, not just their costs for particular items such as electricity. The regions with high gasoline consumption are not necessarily the same as the regions with high utility bills. In addition, a substantial share of the consumer impact of higher energy-related prices would be felt through the indirect effects an emissions cap would have on the prices of other energy-related goods and services, and those effects are likely to be fairly similar across regions. The LDC approach may be more likely to change the *pattern* of regional differences than to reduce the *extent* of those differences.

Assessing regional variation is bedeviled by data limitations and conceptual questions about how to measure and assess equity across regions. The evidence gleaned so far from consumer expenditure data is that: 1) regional effects under a cap-and-trade system would exist, but 2) the range of variation across regions is not large (as a percentage of the average household’s income), and 3) the range and pattern of regional variation are sensitive to particular policy choices, such as

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<sup>8</sup> Thus, Viard has noted that if permits are given free to regulated electric utilities to hold down consumers’ electric bills, then “[t]he emissions reduction is no longer achieved in a cost-effective manner because there is too small a reduction in the output of regulated utilities and too much reduction in emissions in the rest of the economy.” See Alan Viard, *op.cit.*

<sup>9</sup> U.S. Environmental Protection Agency, “EPA Preliminary Analysis of the Waxman-Markey Discussion Draft, the American Clean Energy and Security Act of 2009 in the 111<sup>th</sup> Congress, 4/20/09, p. 39.

<sup>10</sup> *Ibid.*

whether to auction all of the emissions allowances, and, if not, who should receive free allowances and why.<sup>11</sup>

In the same congressional testimony cited earlier, Dallas Burtraw of Resources for the Future observed about an LDC approach, “it is not obvious whether this will diminish or amplify differences in the impact of the program across regions.”<sup>12</sup> Regions in which an above-average portion of the impact of an emissions cap on consumers’ budgets comes from things other than utility bills, and regions in which states have already enacted policies that have reduced emissions but increased consumer costs, might be considered disadvantaged under the LDC approach, compared with regions that have historically experienced lower utility bills because of their reliance on cheaper, but dirtier, fossil-fuel energy.

Consideration of how to address regional variation is surely appropriate. A fully satisfactory policy response, however, is likely to remain elusive. Before embracing a flawed LDC approach, policymakers might want to consider alternatives such as establishing a uniform refund (that varies with family size) and supplementing it by setting aside a modest portion of the emissions allowance value for grants to states in regions that would face disproportionate burdens, in order to provide additional help to residential and business consumers in those areas.

## Conclusion

On both economic and policy grounds, there are at least three significant flaws with the proposal to give local distribution companies free emissions allowances and to have them deliver the bulk of consumer relief by holding down increases in consumers’ bills. First, holding down increases in consumers’ utility bills would address less than half of the impact on consumers’ budgets from placing a cap on greenhouse-gas emissions. Second, state utility regulation across the country is too uneven to ensure that LDCs deliver the relief as policymakers intend. Third, artificially suppressing increases in utility bills would raise the overall cost of meeting the emissions cap and push up prices still more for other forms of energy and energy products. There also is no convincing evidence that a utility-based approach is substantially better than other approaches would be in reducing regional differences.

By contrast, an energy refund approach can efficiently deliver relief to consumers while preserving the incentives for households to conserve energy and to invest in energy efficiency, both of which will be increasingly important as the emissions cap tightens.

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<sup>11</sup> See Dallas Burtraw, Rich Sweeney, and Margaret Walls, “The Incidence of U.S. Climate Policy: Where You Stand Depends on Where You Sit,” Resources for the Future Discussion Paper RFF DP 08-28, September 2008, and Kevin A. Hassett, Aparna Mathur, and Gilbert E. Metcalf, “The Consumer Burden of a Cap-and-Trade System with Freely Allocated Permits,” American Enterprise Institute Working Paper #144, December 23, 2008.

<sup>12</sup> Burtraw, Ways and Means testimony, *loc. cit.*

## Appendix

### Estimating the Impact of Cap-and-Trade on Household Budgets

In estimating the impact of a cap-and-trade program on household budgets, the Center on Budget and Policy Priorities uses methods similar to those that the Congressional Budget Office employs.<sup>13</sup> This approach looks at how the increased costs to producers from having to hold emissions allowances works its way through the economy into consumer prices. It then feeds those price changes into consumer expenditure survey data to estimate the impact by expenditure category for households in different parts of the income distribution.

The results in Table 1 reflect national averages for each quintile (or fifth) of the population, ranked by income from the poorest quintile to the highest-income quintile. As these data show, electricity and natural gas utility bills account for the bulk of the *home energy* impact. Nationally, close to 2 percent of the overall impact on consumers' budgets would come from higher prices for heating oil and from other home energy uses that would not show up in utility bills. The percentage would be larger in particular regions where more homes are heated this way.

Figure 1 in the main report includes home heating oil in the same category as gasoline; together they represent the non-utility, refined petroleum component of direct consumer energy expenditures.

<b>Table 1:</b>					
<b>Impact of Capping Greenhouse Gas Emissions on Consumers, by Source and Income Group</b>					
<i>Percent of Total Impact by Source</i>					
<b>Source</b>	<b>Bottom 20 percent</b>	<b>Second 20%</b>	<b>Middle 20%</b>	<b>Fourth 20%</b>	<b>Top 20%</b>
<b>Home Energy</b>					
Electric utility bills	32.3%	28.8%	26.1%	24.6%	21.7%
Natural gas utility bills	15.0%	14.5%	13.9%	12.9%	12.8%
Home heating oil and other	2.0%	2.1%	2.0%	2.0%	2.0%
<b>Gasoline</b>	23.2%	26.0%	27.9%	27.7%	23.6%
<b>Other consumption (food etc.)</b>	27.5%	28.5%	30.2%	32.9%	39.8%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%
Source: CBPP calculations based on Consumer Expenditure Survey data following CBO methodology					

<sup>13</sup> See, for example, Congressional Budget Office, "The Distributional Consequences of a Cap-and-Trade Program for CO<sub>2</sub> Emissions," Testimony before the Subcommittee on Income Security and Family Support, Committee on Ways and Means, U.S. House of Representatives, March 12, 2008.