CARBON POLLUTION FEES: A NEW WORKABLE APPROACH
March 12, 2013

The carbon pollution pricing discussion draft released by Rep. Henry A. Waxman, Sen. Sheldon Whitehouse, Rep. Earl Blumenauer, and Sen. Brian Schatz is based on a new approach that minimizes compliance and administrative burdens, while maximizing the environmental effectiveness of the program. The discussion draft requires covered entities to pay a fee for each ton of carbon pollution reported under the existing Environmental Protection Agency (EPA) greenhouse gas emissions reporting rule. In contrast, previous proposals for a carbon tax have commonly levied the tax at the point of production or first sale of a fossil fuel. Advantages of the new approach include: more complete coverage of emissions; lower compliance burden for sources; lower administrative burden for the government; and appropriate deployment of agency expertise.

I. CARBON POLLUTION FEE BASED ON REPORTED EMISSIONS

Today's proposal takes advantage of the detailed and rigorous new information made available by EPA's greenhouse gas emissions reporting rule. In developing the reporting rule, EPA consulted with the relevant industries and determined that the reporting system would provide the most complete and accurate information with the least burden by focusing on: (1) the point of emissions for most industrial sources and (2) fuel suppliers for most residential and commercial sources.[1]

A carbon pollution fee based on the reporting rule would apply to entities already covered by the reporting rule and assess the fee based on each ton of reported emissions. The fee would be collected by the IRS, but the determination of which entities are subject to the fee and the amount of the fee due would be based on the emissions data already collected by EPA.

Under this approach, industrial sources burning coal, oil, or natural gas, industrial sources producing greenhouse gases through noncombustion processes (e.g., cement kilns), and other large sources of greenhouse gases (e.g., oil and gas producers and landfills) would pay fees based on their direct emissions. Emissions from most commercial and all residential sources would be attributed to the fuel suppliers: oil refineries and natural gas local distribution companies. Fees for emissions of certain fluorinated gases with high global-warming potential would be paid by the producer or user of the industrial gas.

II. ADVANTAGES OF FEE ON REPORTED EMISSIONS

A. <u>Maximizing Coverage</u>

A fee on reported emissions would cover a greater proportion of total U.S. greenhouse gas emissions than a tax on sales of fossil fuels. Broader coverage reduces the potential for

[1] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Mandatory Reporting of Greenhouse Gas Emissions Final Rule (GHG Reporting) Final Report*, at 2-4 (Sept. 2009) (online at www.epa.gov/ghgreporting/documents/pdf/archived/EPA-HQ-OAR-2008-0508-2229.pdf).

leakage and perverse incentives that may occur with partial coverage. Under the draft proposal, roughly 7,000 facilities would pay a fee, covering 85% to 90% of total U.S. emissions.[2]

The proposal includes several important sources of greenhouse gas emissions that would not be covered under a tax on fossil fuel. CO_2 emissions unrelated to combustion are produced from certain industrial processes, such as cement and iron and steel. These emissions comprise 5.0% of total U.S. greenhouse gas emissions. Methane is released by fossil fuel production, landfills, and agriculture, contributing 8.4% of total emissions. Nitrous oxide produced by a variety of industrial processes and agriculture accounts for 5.0% of total emissions. And fluorinated gases, such as HFCs, PFCs, and SF_6, are used as refrigerants, in manufacturing semiconductors, and other applications, contributing 2.2% of total U.S. greenhouse gas emissions. These sources cumulatively make up about 20% of the greenhouse gas inventory in the United States. Sources accounting for two-thirds of these emissions are large enough to report their emissions to EPA and would be covered in the discussion draft.

In contrast, a tax on fossil fuel production would not impose any price on these emissions.

A fee on reported emissions would also better address the substantial practical challenges of taxing natural gas. Under the EPA reporting rule, emissions from natural gas are reported in four ways: (1) large industrial users of natural gas report their direct emissions from combustion; (2) emissions from residential and commercial users are attributed to and reported by the natural gas distributors that supply these users; (3) direct emissions from the production process are reported by larger producers; and (4) emissions from natural gas liquids are attributed to and reported by natural gas liquids fractionators and importers. This approach limits the number of reporting entities and results in very high coverage of emissions.

In comparison, the other options all have problems. Taxing carbon in natural gas at the point of production may be impractical, as there are over 500,000 producing natural gas wells in the United States.[3] Applying a tax at the point of first sale would require establishing a new regime, as the federal government does not currently tax the vast majority of natural gas production. In addition, taxing at the point of first sale would exclude the CO_2 emissions from combustion and flaring in the natural gas production process (as well as the methane emissions from venting and fugitive releases referenced above). The CO_2 and methane emissions that occur upstream of the point of first sale might be in the range of 5% or more of the emissions from natural gas.[4]

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[2] U.S. Environmental Protection Agency, *Greenhouse Gas Reporting Program 2011: Reported Data* (online at www.epa.gov/ghgreporting/ghgdata/reported/index.html).

[3] U.S. Energy Information Administration, *Number of Producing Gas Wells* (Jan. 7, 2013) (online at www.eia.gov/dnav/ng/ng_prod_wells_s1_a.htm).

[4] While information is not available on the quantity of emissions upstream of the point of first sale, 5.4% of the gross production of natural gas is burned or released upstream of the processing facilities, and an additional quantity escapes as fugitive emissions. U.S. Energy Information Administration, *Natural Gas Gross Withdrawals and Production*, (Jan. 7, 2013) (online at www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_m.htm); U.S. Energy Information Administration, *Natural Gas Consumption by End Use* (Jan. 7, 2013) (online at www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_m.htm). There is considerable uncertainty regarding the rate of fugitive emissions from natural gas, with estimates ranging from 1% to 8%.

And taxing natural gas at the processing plant would exclude the large portion of natural gas production that is used directly without being processed. This is a significant quantity of natural gas. According to the Energy Information Agency (EIA), 28% of natural gas was used without being processed in 2011.[5] Emissions of methane and CO_2 that occur upstream of the processing plant through venting, flaring, combustion, and leaks would also be missed.

A fee based on reported emissions also addresses several limitations of current fossil fuel taxes on coal and oil. It covers emissions from liquid fuels from tar sands, which are exempted from existing taxes.[6] It also accounts for the actual carbon content of coal, which varies substantially between coal types, states, and basins.[7] Existing taxes on coal provide no informational basis for assessing a carbon fee that takes this into account, but if the fee does not account for the carbon content, there is no incentive to reduce emissions by choosing coals with less carbon.[8]

B. Minimizing Compliance Burden and Administrative Burden

The discussion draft also minimizes compliance burden by minimizing the number of covered sources, minimizing new requirements, and using information that is already collected.

About 7,000 sources would pay fees under the approach in the discussion draft. In contrast, a tax levied on producers would include 514,637 natural gas wells.[9] According to EIA staff, there may be 13,000 to 15,000 oil and gas producers operating in the United States.[10] Moving the tax on natural gas downstream might reduce the number of entities paying the fee, but at the expense of covering a smaller proportion of the emissions, as described above.[11]

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[5] U.S. Energy Information Administration, *Natural Gas Gross Withdrawals and Production* (Jan. 7, 2013) (online at www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_m.htm); and U.S. Energy Information Administration, *Natural Gas Plant Processing* (Jan. 7, 2013) (online at www.eia.gov/dnav/ng/ng_prod_pp_a_EPG0_ygp_mmcf_a.htm).

[6] Congressional Research Service, *Memorandum – Tar Sands/Oil Sands: Background Information and Statutory References*, at 10 (Oct. 19, 2012).

[7] For example, the average carbon content per MMBtu of anthracite is approximately 11% higher than for bituminous coal. U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2010, Annexes*, Table A-39, (Apr. 15, 2012) (online at http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2012-Annexes.pdf).

[8] Congressional Research Service, Telephone communication to Committee staff (Dec. 14, 2012). Federal taxes on coal only distinguish between coal from underground versus surface mines. U.S. Energy Information Administration, *Carbon Dioxide Emission Factors for Coal* (Aug. 1994) (online at www.eia.gov/coal/production/quarterly/co2_article/co2.html).

[9] U.S. Energy Information Administration, *Number of Producing Gas Wells* (Jan. 7, 2013) (online at www.eia.gov/dnav/ng/ng_prod_wells_s1_a.htm).

[10] U.S. Energy Information Administration, Telephone communication to Committee staff (Mar. 4, 2013).

[11] While placing the tax on natural gas processors would clearly reduce the number of covered entities, it is unclear what the effect would be of putting the tax at the point of first sale, as information on the number and composition of first sellers is not publicly available.

The discussion draft would apply to no sources not already reporting emissions to EPA and would require no new information from the vast majority of covered sources.[12] In contrast, IRS excise taxes do not currently cover natural gas, tar sands oil, or the many noncombustion sources of greenhouse gases. Nor do federal excise taxes collect the information that would be necessary to determine the carbon content of different coals.

In addition, the discussion draft may offer administrative advantages to the government. The Treasury Department would not have to develop a new program for identifying covered sources and issue rules to establish methodologies for calculating emissions. To calculate the fee obligations, the Treasury Department would simply reference EPA's database to identify the sources liable for the fees and the quantities of their emissions.

C. Anticipating Carbon Capture and Sequestration

This proposed approach also works well in the context of carbon capture and sequestration or reuse, such as the use of carbon dioxide for enhanced oil recovery. Emissions captured by a power plant are not reported as released and hence would not be subject to the fee. Emissions injected underground also would not be subject to a fee as long as the entity conducting the injection meets monitoring and other requirements to assure permanent sequestration. In contrast, under an upstream approach, the coal producer would pay a tax for each ton of carbon pollution in the coal, regardless of whether that carbon is subsequently sequestered. The government would then need to provide tax rebates to downstream entities that sequester the carbon or permanently inject it underground for enhanced oil recovery.

D. Appropriate Application of Agency Expertise

Finally, the proposed approach based on the reporting rule but administered by the Treasury Department would make each agency responsible for the area in which it has expertise. The IRS would carry out its basic mission of collecting taxes and enforcing the requirements to pay taxes. EPA would continue to be responsible for establishing and enforcing the requirements for sources to estimate their greenhouse gas emissions. There is great diversity of greenhouse gases, emission sources, and points of emission. EPA already has worked extensively with emitters to develop the detailed understanding of industry structures and operations necessary to identify the most effective and efficient means of measuring and monitoring emissions.[13]

[12] In a few instances, some additional information would need to be provided to avoid double-counting emissions, but these instances are not common and the information should be readily available. For example, some natural gas distribution companies supply some large industrial sources that report their direct emissions. These distribution companies would need to inform EPA of the quantities supplied to industrial sources to avoid paying fees for the associated emissions. This would also be the case for a small portion of the oil sold by refineries and for some producers and users of industrial gases.

[13] EPA conducts this work under the reporting rule and through the many EPA voluntary programs that address greenhouse gas emissions, which include EnergyStar, Green Power Partnership, Natural Gas Star, AgStar, and the Landfill and Coalbed Methane Outreach Programs.