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How to Reduce Greenhouse Gas Emissions Now

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ABSTRACT

Support is growing in the 110th Congress for legislation to counter climate change. Yet action on any of the major cap-and-trade proposals will leave a critical policy gap. None of the proposed systems would take full effect for at least five years. Meanwhile, U.S. greenhouse gas emissions continue to increase and company executives are locking in future emissions as they finalize plans for new power plants, factories and cars. The Administration's latest climate action report, circulated in draft in March 2007, estimates that a 19 percent increase in U.S. emissions between 2000 and 2020 will contribute to persistent drought, coastal flooding and water shortages in many parts of the country and around the world. This policy brief proposes that Congress legislate product-by-product and factory-by-factory disclosure of greenhouse gas emissions to create immediate incentives for companies to cut those emissions. Labeling products and disclosing factory emissions would provide market benefits now by exposing inefficiencies and informing the choices of investors, business partners, employees and consumers and would give companies the information base they need to prepare for cap-and-trade regulation.

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Congressional leaders are finally working seriously on long-term approaches to climate change. Three major bills propose variations on a cap-and-trade approach that combines industry emission limits or "caps" with a government-created market for trading emission credits. Sens. John McCain (R-Ariz.) and Joseph Lieberman (I-Conn.) are sponsoring a bill that would gradually reduce emission caps to 60 percent below 1990 levels in 2050. Sens. Bernie Sanders (I-Vt.) and Barbara Boxer (D-Calif.) propose caps that are even more ambitious: 80 percent below 1990 levels by 2050. Sen. Jeff Bingaman (D-N.M.) proposes intensity targets that would reduce emissions

by 2.6 percent per unit of the Gross Domestic Product (GDP) from 2012 to 2021, and by three percent starting in 2022. Another bill, introduced recently by Representatives Pete Stark (D-CA) and Jim McDermott (D-WA), proposes to tax the carbon content of fuels. Boxer, chair of the Senate Environment and Public Works Committee, and Rep. John Dingell, chair of the House Energy and Commerce Committee, are holding hearings. Speaker Nancy Pelosi has created a special oversight committee to coordinate House action.

Even if Congress approves a variation on a cap-and-trade system this year or next, however, a critical policy gap will remain. Any such system would take at least five years to design and implement. Meanwhile, U.S. emissions of heat-trapping gases continue to increase. U.S. emissions of carbon dioxide, the most common greenhouse gas, increased 20 percent from 1990 to 2004. Annual emissions are expected to reach 9.2 billion tons by 2020. The United States remains the world's largest contributor to greenhouse gases. Their main sources are the burning of fossil fuels to produce electricity and heat, and to power cars, planes, trains and other forms of transportation.

About 40 percent of carbon dioxide emissions came from the generation of electric power. As the price of natural gas continues to rise, more electricity is being generated by burning coal, which produces about twice the carbon emissions per unit as does the burning of natural gas. More than 100 new coal-fired power plants are on the drawing boards. Those coal-fired plants will help shape the next half-century of power generation -- and the next half-century of greenhouse gas emissions. Executives will need powerful incentives if they are to alter current plans in order to make significant emissions reductions. Most are understandably reluctant to place their companies at a competitive disadvantage by making bold moves to cut emissions unilaterally. So far, neither the administration nor Congress has come up with any way to reduce such emissions in the next critical years.

How would transparency reduce greenhouse gas emissions?

A factory-by-factory and product-by-product transparency system for greenhouse gases would mobilize the power of public opinion, inform choice, and help markets work better. Requiring disclosure of emissions for each proposed and existing major factory and power plant as well as for each new car, truck, furnace, refrigerator, and other energy-intensive product would expose their relative greenhouse gas efficiencies and their total contributions to such emissions. Once disclosed, emissions data could be used by public officials to design and implement emissions-reduction plans; by local zoning and permit granting authorities to place conditions on the construction or alteration of plants; by investors to more accurately predict material risks; by consumers to make more informed choices among products such as cars, air conditioners and heating systems; and by employees to choose where they want to work. In addition, environmental groups, industry associations, and local and national media could use the information to help pinpoint the most inefficient factories, power plants, cars, and trucks.

Equally important, disclosure would allow chief executive officers and their business partners and competitors to see for the first time the relative greenhouse gas efficiency of their plants and products, and to put pressure on bad actors. Requiring CEOs to sign off on annual emissions reports would ensure that this information

works its way to the top of the managerial ladder. The collective effect of new information and changed choices would create incentives for corporate managers to take feasible steps toward reducing greenhouse gas emissions sooner rather than later.

Voluntary disclosure is not enough because it does not allow investors, employees or consumers to compare major products and facilities, assure standardized metrics, or provide for enforcement of reporting requirements. When public risks are serious, only government-mandated transparency offers the permanence, legitimacy, and accountability that strengthen transparency to serve policy priorities.

A time-tested policy tool

The power of transparency has worked in the past to reduce harmful pollution in the United States. After a disastrous chemical accident at a pesticide plant in Bhopal, India in 1984 claimed more than 2000 lives, Congress required U.S. companies to disclose how many pounds of toxic pollution they were responsible for each year, factory-by-factory and chemical-by-chemical. When the initial numbers were revealed, shame-faced executives promised immediate reductions. CEOs of Monsanto, DuPont, IBM and other major companies made commitments to cut toxic pollution by as much as 90 percent within a few years. The Environmental Protection Agency (EPA) later credited that simple disclosure requirement with reducing reported toxic pollution by as much as half in the 1990s.

Employing transparency requirements to reduce public risks is no longer unusual. Congress frequently constructs such requirements to reduce specific health, safety, or environmental risks. In addition to toxic pollution reporting, automobile safety ratings, nutritional labels, drinking water quality reports, workplace hazard reporting and dozens of other laws enacted in recent years aim to create specific incentives for companies to improve their products and practices. At best, such policies mobilize market forces and empower individual choices with relatively light-handed government intervention.

In fact, the United States has fallen behind other countries in *not* requiring factory-by-factory and product-by-product reporting of greenhouse gases. In countries that are members of the European Union (EU), companies must disclose factory-by-factory emissions of greenhouse gases as well as other pollutants in annual reports available on the Internet. Initiated in 2004 and strengthened recently, that reporting requirement covers emissions from major industries including energy, metals, chemical, paper and waste management as well as emissions from cars, trucks, planes and other mobile sources. In 2005, the EU also launched a cap-and-trade system that requires member states to initiate factory-by-factory reporting of carbon dioxide emissions to verify emission levels and administer allowances. The EU also requires disclosure of carbon emissions by car model. Canada and Mexico require facilities that are large contributors to greenhouse gases to disclose emissions annually.

The time is right for greenhouse gas disclosure. An internationally accepted protocol to measure and report emissions has been tested in a variety of real-world settings including the EU's cap and trade system, the Chicago Climate Exchange, and California's Climate Action Registry. A new class of auditors has emerged to certify

the accuracy of company reporting. Thirty-one states announced in May 2007 the creation of a greenhouse gas registry that aims to provide a standardized way for companies to disclose emissions voluntarily beginning in 2008.

While some substantial cuts in greenhouse gas emissions will require technological advances in carbon sequestration and storage, others can be achieved with existing technology by increasing efficiency, as European companies have demonstrated. British Petroleum, the world's third largest energy company, cut carbon dioxide emissions by 10 percent between 1998 and 2002 by introducing new energy efficiency measures and creating an internal emissions trading scheme among its 150 business units in over 100 countries.

A transparency requirement is politically feasible. It could gain support among both Democrats and Republicans by empowering consumers and investors while also strengthening market mechanisms. Recent developments suggest that there is a demand for such information. Large institutional investors have joined forces in a London-based carbon disclosure project to press companies to report emissions. Wal-Mart, Home Depot, Boeing and other major U.S. corporations voluntarily disclose company emissions as part of that project. A coalition of firms and environmental groups that includes General Electric, Alcoa, Duke Energy, Environmental Defense, the Natural Resources Defense Council, and the World Resources Institute has also urged greater transparency. A transparency requirement would reward companies for reducing emissions, help them manage their own risk, and provide data on which to base a future cap-and-trade requirement.

Designing an effective transparency system

The architecture of legislated transparency matters. Who discloses and what is disclosed must match the dimensions of the problem at hand as closely as possible. Comparability across facilities, product models and companies is critical. Most important, accurate and complete information must be available in an easily accessible format for diverse audiences.

Managers of companies whose products or processes are large contributors to greenhouse gas emissions would disclose those emissions annually using standardized metrics. To be fair and comprehensive, all major emitters -- government agencies as well as companies – would be required to disclose emissions for their operations in the United States and abroad from both stationary facilities and mobile sources. Reporting would include both direct emissions and indirect emissions that result from the use of heat and electricity. It would include both emissions per units of economic output and tons of greenhouse gases. CEOs would be required to sign off on emissions reports and to certify their accuracy.

Agreement on appropriate metrics is important. A rough consensus on how to measure progress is needed to build public trust and to prevent political battles that cripple transparency efforts. Inevitably, disclosure systems start with imperfect metrics. The important question becomes whether those metrics improve over time. Measurement techniques are already sufficient to support trading markets, and U.S. power plants already report carbon dioxide emissions as part of an established cap-

and-trade system for acid rain pollution. Over time, the development of more sophisticated sensors will fine tune initial estimating techniques.

Enforcement is another critical element for effective transparency. Disclosing companies naturally seek to place their contributions to greenhouse gas emissions in the best light. Serious sanctions, verification requirements, and well-staffed enforcement efforts are needed to minimize non-reporting and misreporting, and to close loopholes as companies discover them.

Analysis and feedback requirements are also essential to ensure that reporting keeps pace with new science and technology and to improve the chances that transparency improves over time. Transparency systems can become out-of-date and counter-productive just as other regulatory requirements can. The National Academy of Sciences or another impartial oversight group could be charged with assessing periodically the fairness and effectiveness of the disclosure requirement and its metrics, and regulators could be required to consider those impartial recommendations.

Above all, effective transparency must be user-centered. To be factored in to everyday decision-making routines, information has to be provided at a time, place, and in a standardized format that encourages its use by companies, investors, customers, business partners and the public. Information posted on product stickers and at factory entrances and on company web sites is accessible. Information in government file drawers or complex databases is not. A rating system that assigns stars, letter grades or colors to cars or factories would enable consumers and investors to determine relative emissions' contributions at a glance. In addition, user-friendly web sites can help ensure that data is available quickly and can be aggregated for fair comparisons. Since each user has different information needs, time demands, and capacity to understand technical terms, web sites should allow people to customize information to suit their specific needs.

A factory and product transparency policy for greenhouse gas emissions is feasible. The pre-requisites for effective transparency are already in place. Accurate, complete and up-to-date information can be produced in standardized formats and made truly accessible. Enough company leaders, government officials, consumers, employees and investors care about climate change to factor greenhouse gas emissions into their decisions. Companies have the capacity to reduce those emissions to some degree in response to public pressure.

The information wars will continue, of course. There will be struggles over how to measure the contribution to emissions made by agriculture and other non-point sources. There will be debates over how to structure a trading market for emissions permits and how to distribute those permits. There will be questions about whether reporting rules are fair and whether companies are reporting completely and accurately. Reporting will be more costly to some than to others, and companies may argue that facility and product reporting gives away trade secrets. There will also be limits to companies' will and capacity to reduce emissions quickly and those limits will vary by facility, company, and industry.

Transparency represents a necessary and neglected first step in the U.S. response to climate change. In the long run disclosure of factory and product emissions of heat-

trapping gases represents one element of a portfolio of measures that Congress will approve over the next several years. In the immediate future, it represents a potentially powerful and politically feasible means of creating immediate incentives to reduce those emissions.

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