



NATURAL RESOURCES DEFENSE COUNCIL

**Statement of**  
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**Before the**  
**Committee on Energy and Natural Resource**  
**United States Senate**

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## **Introduction**

Thank you for the opportunity to share my views regarding the Energy Information Administration's analysis of Chairman Bingaman's greenhouse gas cap-and-trade discussion draft proposal.<sup>1</sup> My name is Daniel A. Lashof, and I am the science director of the Climate Center at the Natural Resources Defense Council (NRDC). NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.2 million members and online activists nationwide, served from offices in New York, Washington, Los Angeles and San Francisco.

My testimony will discuss EIA's key findings and shortcomings of EIA's analysis, particularly with respect to the treatment of energy efficiency and technology deployment programs. I will then turn to more general comments on the emission allowance allocation system proposed in the discussion draft.

## **Emissions rise instead of fall**

The Energy Information Administration (EIA) analysis of Chairman Bingaman's greenhouse gas cap and trade discussion draft demonstrates that the proposal would have minimal macroeconomic impacts on the U.S. economy regardless of how emission allowances are allocated. The analysis also indicates, however, that the proposal would not reduce greenhouse gas emissions below current levels through at least 2030, although

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<sup>1</sup> Energy Information Administration, 2007. Energy Market and Economic Impacts of a Proposal to Reduce Greenhouse Gas Intensity with a Cap and Trade System. U.S. Department of Energy, Washington, DC. SR/OIAF/2007-01 (January).

it would slow the rate of emission growth. Emissions grow under the proposal for two reasons: First, the specified reductions in emissions intensity are not rapid enough to reduce emissions below current levels by 2030, and second the “safety valve” provision of the proposal allows emissions to substantially exceed the nominal cap.

While the discussion draft contains many valuable proposals regarding the allocation of emission allowances, faster and deeper emission reductions, such as those proposed by the U.S. Climate Action Partnership in its January 22<sup>nd</sup> *Call for Action*<sup>2</sup>, are essential to prevent dangerous global warming.

### **Macroeconomic impacts are minimal**

EIA’s conclusion that there would be minimal macroeconomic impacts from a greenhouse gas emissions cap and trade program such as the Bingaman discussion draft is robust. Regardless of how emission allowances are allocated EIA finds that the impact on the present value of Gross Domestic Product (GDP) would be less than 0.2 percent, not accounting for the health and environmental benefits the program would produce.

EIA’s analysis suggests that macroeconomic costs would be somewhat higher if all the emission allowances issued under the program are auctioned than under the “Phased Auction” approach outlined in the discussion draft. This conclusion appears to be primarily related to the way EIA analyzed the “Full Auction” case, rather than the inherent merits of this approach relative to the Phased Auction alternative. In particular, EIA assumes that all of the additional revenue generated under the Full Auction would be

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<sup>2</sup> [www.us-cap.org](http://www.us-cap.org)

devoted to deficit reduction, which has a dampening effect on consumption in EIA's model over the analysis time horizon. This result is not primarily related to the cap-and-trade program, however. Any deficit reduction policy considered in this model would likely yield similar results. Conversely, had EIA assumed that the additional revenue from the Full Auction was used to cut taxes, holding the deficit constant, the model would likely project slightly more economic output under the Full Auction compared with the Phased Auction.

This does not imply that allowance allocation is unimportant. To the contrary, emission allowances created under any greenhouse gas cap and trade program will be a valuable public asset and deciding how to use this asset fairly and effectively is a critical part of Congressional deliberation on global warming legislation.

### **Allowances are a valuable public asset**

Policy decisions about how allowances will be allocated should start from the principle that no one has an entitlement to pollute the atmosphere with heat-trapping gases. An emission allowance represents a limited permission to release one ton of carbon dioxide into the atmosphere. This is not a property right and there is no inherent policy rationale for allocating allowances based on historic emissions. Rather, the atmosphere's limited capacity to accommodate emissions is a public asset, much like the radio frequency spectrum. Economists widely recognize that the most efficient and fair way to allocate this asset is through a public auction. Revenues from such an auction should be used to further the goal of solving global warming and for other public purposes. This is

precisely the approach that New York and Massachusetts are adopting to allocate emission allowances under the Regional Greenhouse Gas Initiative. While there may be a number of policy and practical reasons to deviate from this principle by allocating some emission allowances without charge, any free allocations to the private sector should be limited and phased out over time, and the burden should be on those proposing free allocations to justify this approach.

The stakes are considerable. EIA projects that covered greenhouse gas emissions under the discussion draft proposal would be 7.1 billion tons in 2020. For each ton emitted covered entities will have to retire one emission allowance, which EIA projects will have a market value of \$7.15 in that year. Thus the total value of emission allowances used in 2020 would be over \$50 billion. Analysis by Dallas Burtraw and others at Resources For the Future<sup>3</sup>, as well as experience with the pilot phase of the European Union Emissions Trading Scheme, shows that the value of emission allowances greatly exceeds the impact of the emissions cap on the profitability of firms covered by the program. Hence, there would be substantial windfall profits were all of the emission allowances to be distributed for free to the private sector, particularly for firms operating in competitive markets in which increased marginal costs will be passed through to consumers.

### **Allowances should be allocated strategically**

In addition to being fair, the allowance allocation approach should strategically promote increases in energy efficiency and widespread use of available low carbon technologies.

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<sup>3</sup> <http://www.rff.org/Documents/RFF-DP-05-55.pdf>

NRDC recommends devoting most of the value of emission allowances to these purposes in order to reduce costs for both consumers and businesses. While the discussion draft proposal stops short of this, it does appropriately devote a substantial portion of the value of allowances to promoting increased energy efficiency and deployment of advanced zero- and low-carbon technologies. This includes not only the \$50 billion Climate Change Trust Fund, but also the value of the portion of allowances allocated to States or the President. Unfortunately, EIA did not analyze the impact of these important provisions of the proposal. While analyzing these provisions is challenging, ignoring them is misleading.

Appropriate analysis of the energy efficiency and technology deployment provisions of the proposal would show that much deeper emission reductions could be achieved with minimal macroeconomic impacts or even with net economic benefits. There are two primary ways in which these provisions would promote low cost emission reductions: First, by overcoming market failures that prevent cost-effective increases in energy productivity, and second by accelerating technology innovations that reduce costs and improve performance as a function of learning-by-doing. Neither of these effects is appropriately reflected in the EIA analysis.

### **EIA neglects energy productivity gains from allowance allocation**

The proposed incentives for energy efficiency would overcome barriers to cost-effective energy productivity improvements. Satisfying energy service demands with less primary energy is the fastest, cheapest, and cleanest way to reduce global warming pollution, and

will make it much less expensive to achieve any greenhouse gas emission cap. This opportunity is large and consequential, as documented recently at the global level in the Stern Review of the Economics of Climate Change<sup>4</sup> and the McKinsey Global Institute report on energy productivity<sup>5</sup>. Numerous reports have reached similar conclusions for the United States at both the state and federal level. For example, last week NRDC released a report prepared by Optimal Energy which shows that cost-effective energy efficiency, demand response, and combined heat and power investments in Texas could eliminate projected electricity demand growth and obviate the claimed need for more than a dozen new high-emitting coal fired power plants in the state, avoiding 400 million tons of CO<sub>2</sub> emissions over the life of the efficiency measures.<sup>6</sup> I have attached a copy of this report to my testimony and ask that it be included in the record of this hearing.

The benefits of robust energy efficiency policies are not just theoretical. They have been demonstrated in practice. In California per capita electricity consumption has been held constant over the last 30 years while the rest of the nation's per capita consumption increased by more than 50 percent.<sup>7</sup> This is no accident: over the period California has had the nation's strongest building and appliance efficiency standards and most aggressive utility efficiency programs. Nonetheless, EIA only considered energy demand changes related to their projections of small changes in retail prices associated with the discussion draft proposal, and made no attempt to analyze the effects of federal or state incentives provided through the Climate Change Trust Fund or through the allowances

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<sup>4</sup> [www.hm-](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)

[treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/stern\\_review\\_report.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)

<sup>5</sup> [http://www.mckinsey.com/mgi/publications/Global\\_Energy\\_Demand/index.asp](http://www.mckinsey.com/mgi/publications/Global_Energy_Demand/index.asp)

<sup>6</sup> [http://docs.nrdc.org/globalwarming/glo\\_07011701A.pdf](http://docs.nrdc.org/globalwarming/glo_07011701A.pdf)

<sup>7</sup> <http://www.nrdc.org/air/energy/fcagoals.asp>

allocated to States. As a result EIA projects that residential energy consumption in 2020 under the discussion draft proposal (Phased Auction case) would be only 0.4 percent lower than in the Reference case. Similarly, EIA projects just 1 percent less transportation sector energy consumption in 2020 due to the proposal.

### **EIA neglects technology deployment driven by allowance allocation**

EIA's analysis also fails to account for the deployment of zero- and low-emission energy technologies induced by the Climate Change Trust Fund and State efforts. There are two important mechanisms that should be considered. First, the low-emission facilities that would be built as a direct result of the proposed deployment incentives. Second, early deployment will result in technological learning that would improve the performance and reduce the cost of next generation facilities, making these technologies more competitive with higher-emitting competitors regardless of the availability of additional incentives. Because EIA did not consider these effects, and because allowance prices are relatively low under the discussion draft proposal, EIA does not project any use of carbon capture and geologic disposal technology for power plants during the timeframe of their analysis. (It also appears that EIA did not consider the opportunity to use industrial CO<sub>2</sub> for enhanced oil recovery in conjunction with geologic disposal, or they likely would have found that at least *some* carbon capture and disposal would be cost effective at the allowance prices they forecast).

### **Allocate a portion of allowances to states**



NRDC supports the idea of allocating at least 30 percent of the available allowances to States as proposed in the discussion draft. States are in the best position to address specific equity concerns and promote energy efficiency and infrastructure investments that will help achieve the cap at the lowest possible cost. For example, States are primarily responsible for enforcing building codes and planning transportation infrastructure, both of which can have a substantial impact on carbon dioxide emissions.

### **Effectively addresses competitiveness concerns**

Special consideration is needed to ensure that energy-intensive industries facing international competition are not put at a significant disadvantage by the program. A grandfathered allocation to these firms will not necessarily achieve this goal, however, because their most profitable course may still be to shut down domestic production and sell their allowances. To prevent this without creating a perverse incentive to keep operating the least efficient, highest polluting plants, the allocation to energy intensive firms could be reduced in proportion to any reductions in their regional employment. (From a broader perspective, the most efficient policy for addressing this concern is border tax adjustments for energy intensive products traded with countries that don't have equivalent emission reduction programs).

### **Allocate to electricity distribution companies rather than generators**

The discussion draft proposes to initially allocate 30 percent of the total allowance pool to electricity generators based on their share of emissions during 2004-2006. Although

this free allocation begins to decline in 2017, nearly 15 percent of allowances would still be allocated on this basis in 2030. This appears to be substantially in excess of the amount that can be justified on the basis of mitigating economic transition costs to relatively more adversely affected firms. As a result, allocating allowances in this manner would likely result in substantial inequities. This is because about 40 percent of US generation sells its output at market prices into various largely unregulated wholesale markets, while the rest remains subject to diverse forms of cost-of-service price regulation.<sup>8</sup> Impacts of allocations on consumers and shareholders will vary widely and state regulators will not be able to respond to real or perceived inequities. In many cases, generators can be expected to pass through the increased price of carbon regulation in their wholesale prices, and also to keep the proceeds from the sale of allowances allocated to them initially. Consumers obviously will see the price signal, but not the benefits from the allowance allocation. The problem has already surfaced in European markets, leading United Kingdom authorities to conclude that initial allocation to electric generators serving competitive markets resulted in large windfall profits.<sup>9</sup>

Electricity distribution companies, by contrast, provide service under continuous price regulation from either state commissions (for investor-owned utilities, accounting for about three-fourths of retail sales) or local boards (for publicly owned utilities and cooperatives, which serve the rest of the nation). Regulators can therefore ensure that consumers benefit from any allowances allocated to distribution companies by directing

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<sup>8</sup> This is the estimate of the Electric Power Supply Association, which represents competitive power suppliers.

<sup>9</sup> House of Commons, Environmental Audit Committee, "The Interantional Problem of Climate Change: UK Leadership in the G8 and EU," p. 17 (Mar. 16, 2005).

funds to energy efficiency investments and long-term emissions reductions, and by adjusting rates. Many in the utility industry and its regulators are likely to prefer distribution company allocation to a generator-based system (e.g., see Exelon's comments on the Energy Committee White Paper).

Congress would have a wide range of options in making allocations to distribution utilities, ranging from the carbon content of electricity delivered by distribution companies to the volumes of electricity delivered (with numerous intermediate compromise possibilities). Utilities that distribute mostly coal-fired electricity are likely to advocate an emissions-based formula on the grounds that they will see the largest increase in electricity costs as a result of the CO<sub>2</sub> emissions cap. Utilities that distribute mostly low-emission resources are likely to advocate a formula based on electricity sales on the grounds that their customers are already paying higher prices for a cleaner generation portfolio.

Whether or not the allocations should be updated over time is an independent question. The proposed phase-out of free allocations to the private sector diminishes the case for updating in general (the more rapid the phase-out the less need to update the free allocation). Any allocation based on carbon content should definitely not be updated because that would create a perverse incentive to increase emissions in order to obtain a larger allocation, raising the overall cost of achieving the emission cap (or increasing actual emissions if the safety valve is open). There is a stronger argument for updating a sales-based formula as a matter of equity between high-growth and low-growth areas.

Such an approach would need to include an adjustment for independently verified energy efficiency to ensure that updating does not create a disincentive for additional energy efficiency improvements.

The simplest approach would be to allocate based on electricity sales during the same historical period used for allocating to other sectors. If Congress decides to allocate (in part or in whole) based on historical emissions, however, calculating the carbon content of those electricity sales is certainly feasible and should not be seen as an obstacle to allocating to distribution companies. As long as the allocation is to distribution companies (to avoid windfall profits) and is not updated in a way that creates perverse incentives (to avoid raising costs or emissions), then the specific allocation formula is a matter of regional equity and an appropriate subject for negotiations during the legislative process.

To prevent state regulators from masking price signals to consumers through their regulation of distribution companies, it would be appropriate for Congress to condition the grant of free allowances on a requirement that a portion be used to promote energy efficiency and that they not be used to mask the cost of carbon emissions in the form of directly offsetting subsidies for retail electricity costs.

Of course state regulators cannot change or hide a very potent price signal, which is the added cost of carbon-intensive generation to its utility purchasers (and to other entities that buy power in wholesale markets to serve retail customers). This is the most

important economic element of any cap-and-trade system for the generation sector, because it shapes the long-term investment and operational decisions that drive the sector's total emissions. Carbon-intensive generation will increase in price to these decision-makers as the cap takes effect and tightens, regardless of how retail-price regulators decide to deal with proceeds from the sales of allowances allocated initially to their distribution companies.

### **Conclusion**

EIA's analysis provides an upper bound on the costs of implementing Chairman Bingaman's discussion draft proposal, but it fails to account for important provisions designed to promote increases in energy efficiency and deployment of zero- and low-carbon technologies. Congress should allocate emission allowances strategically to reduce compliance costs and account for the benefits of this approach as it considers a range of legislative proposals. This will be particularly important for proposals that would require emissions to be reduced substantially below current levels, which is essential to prevent dangerous global warming.