

DECLARATION OF DALLAS BURTRAW

1. My name is Dallas Burtraw and I am a senior fellow at Resources for the Future, a nonprofit and nonpartisan organization headquartered in Washington, D.C., that conducts independent research rooted primarily in economics and other social sciences on environmental, energy, natural resource and environmental health issues. I hold a Ph.D. in economics and a master's degree in public policy from the University of Michigan and a bachelor's degree from the University of California, Davis. My research includes the design of environmental regulation, the costs and benefits of environmental regulation, and the regulation of the electricity industry. I have recently estimated the change in value of electricity generation companies, and the incidence of cost on households, of alternative approaches to implementing carbon dioxide emissions trading programs in the US. I have examined the cost-effectiveness of trading programs for nitrogen and sulfur dioxide in the US, and of carbon dioxide emissions trading in the EU. I have also recently analyzed the opportunities for regulatory approaches to reduce carbon dioxide. I have conducted integrated assessment modeling of nitrogen and sulfur dioxide emissions from the power sector including health and ecosystem effects and valuation. I am a co-author of the Pizer et al. paper,¹ the conclusions of which are misrepresented in one of the declarations to which I am responding.
2. I submit this declaration to respond to errors in three declarations put forward in support of the stay motions: the declarations of Richard Bezdek, Margo Thorning, and Steven Peterson, exhibit attachments 13, 19, and 11 to the National Association of Manufacturers' (NAM) motion for a stay.
3. Exhibits 13 and 19 offer inappropriate comparisons between fundamentally different policies and reach conclusions that cannot be sustained based on the cited evidence. As a result, the exhibits provide no

¹ William Pizer, Dallas Burtraw, Winston Harrington, Richard Newell, and James Sanchirico, 2006. "Modeling Economy-wide vs. Sectoral Climate Policies Using Combined Aggregate-Sectoral Models," *The Energy Journal*. 27(3), 135-168.

meaningful information on the costs or economic impacts of the policies that NAM seeks to stay.

4. The stay motion sought by NAM seeks to block two regulatory policies of limited scope that address a fraction of the sources of greenhouse gas emissions: (1) emission standards applicable to a fraction of the vehicle fleet (affecting only new cars and light trucks built in model years 2012-16) and (2) a preconstruction review requirement for a fraction of the stationary source fleet (out of a population of tens of thousands of large stationary sources in the United States, the review is expected to add approximately 900 projects per year to the number of projects required to undergo preconstruction review).
5. Exhibits 13 and 19 infer the impacts of these limited policies from their assessment of the impact of much larger and more far-reaching legislative proposals for an economy-wide emissions cap and trade program that would cover approximately 85 percent of the greenhouse gas emissions in the U.S., including the emissions from more than 10,000 stationary sources and the emissions associated with gasoline and other refined oil products when they are eventually combusted. These legislative proposals have not yet been enacted.
6. As I will explain below, the costs attributed to the legislative proposals for an economy-wide cap and trade program have little relation to the costs attributable to the regulatory policies at issue in this case. Moreover, the description of costs attributed in exhibits 13 and 19 to the legislative proposal is inaccurate and misleading. In other words, even if exhibits 13 and 19 had provided a reasonable estimation of the costs and benefits of an economy-wide cap and trade program (and they have not), that would tell us nothing about the costs and benefits associated with the more limited regulatory policies for new cars and the largest new or expanded industrial sources that EPA is actually implementing.
7. One of the two regulatory policies in consideration in this case is the EPA's vehicle emission standards, issued jointly with the National Highway Traffic Safety Administration's fuel economy standards, that require reductions in the emissions of carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons from new cars and light trucks (SUVs, minivans, and pick-up trucks) built in model years 2012 through 2016. Model year 2012 begins in January 2011. The standards ramp up over the five years, allowing manufacturers lead-time to make improvements in their vehicles. The EPA has shown that by model year 2016, the

greenhouse gas emissions of the new vehicle fleet will be 30 percent lower than the emissions of comparable vehicles built a few years ago.

8. The benefits of the EPA and NHTSA standards are substantial. According to the two agencies, the average owner of vehicles built under these standards will receive net savings of approximately \$3,000 due to reduced fueling costs. These savings take into account the extra initial cost of the vehicles. This does not account for the additional benefits of reducing greenhouse gas emissions. It is difficult to see how, as exhibits 13 and 19 suggest, that this policy can be characterized as imposing excessive costs on the U.S. economy. The evidence is to the contrary – the net cost of this regulation is negative and the U.S. economy, measured in terms of gross domestic product and balance of trade, is likely to benefit from the introduction of the regulation.
9. The other policy at issue in this case is the inclusion of carbon dioxide and other greenhouse gases as part of the preconstruction review requirement applicable to the largest new and modified major stationary sources. This review procedure leads to the identification of an emissions performance level that the permitting agency (usually a state agency and in some cases EPA) determines to reflect use of the best available control technology (BACT). Under the Clean Air Act, the determination of BACT explicitly takes costs into account, ensuring that regulation does not impose costs that are excessive and does not require the adoption of technologies or processes that are not available.
10. Further, the preconstruction review policy will be phased in slowly, so that over the time period pertinent for analysis of a potential judicial stay (the 12 to 18 months following January 1, 2011), it will affect only a limited number of sources. According to EPA, during the first half of 2011, the only sources affected will be ones that *already* are required to undergo preconstruction review because of other pollutants. They will be required to meet a BACT limit for greenhouse gases only if those emissions will increase by 75,000 tons per year of carbon dioxide (or an equivalent amount of another greenhouse gas). Over the following two years, EPA expects preconstruction review to affect an additional 900 large projects per year out of the population of tens of thousands of sources. These are projects that are *not* now subject to review for other pollutants. The 900 additional projects per year will consist of (1) new sources that will emit at least 100,000 tons per year of carbon dioxide and

(2) modifications of existing sources that will increase their carbon dioxide emissions by at least 75,000 tons.²

11. Because the emission limitation reflecting BACT will be determined in the future for each covered source on a case-by-case basis, taking costs into account, it is impossible to demonstrate now that the costs of those requirements will be excessive for the sources or burdensome – or even noticeable – for the overall economy.
12. These two policies are what is at issue in this case. But Exhibits 13 and 19 present selected, upwardly-biased estimates of the costs associated with an entirely different policy framework – a cap and trade proposal that would affect the entire economy. They present estimates of the costs they claim would be imposed by the implementation of legislation such as the American Clean Energy and Security Act (H.R. 2454), which passed the House of Representatives in 2009 but has not been enacted, and the American Power Act, a legislative proposal in the Senate which has been circulated as a discussion draft but also has not been enacted.
13. The two bills would have established a cap on the greenhouse gas emissions of covered sources, beginning in 2012, with the cap declining annually through the year 2050. Generally speaking, the bills would have covered more than 10,000 stationary sources – both new and existing sources – that emit at least 25,000 tons per year of greenhouse gases. The bills would also have covered oil refiners and importers for the emissions occurring upon the combustion of fuel that they distribute. This broad scope contrasts sharply with the limited coverage of preconstruction review program described above, which in the next 18 months will apply to only about 900 large projects not already subject to review, none making less than a 75,000 tons per year increase in greenhouse gas emissions. Even if exhibits 13 and 19 provided a valid estimate of the costs of implementing these bills, affecting more than 10,000 sources each year over the next 40 years, that estimate would have no reasonable bearing on the cost of implementing the much smaller preconstruction review program during the next 18 months, the period most likely to be affected by a potential stay.
14. It is also noteworthy that an EPA program of regulations would lead to a smaller change in product prices than the cap and trade approach, over at

² Environmental Protection Agency, Final Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, FACT SHEET, <http://www.epa.gov/nsr/documents/20100413fs.pdf>.

least the next decade. The legislative cap-and-trade proposals described above would have limited greenhouse gas emissions by issuing a number of “emissions allowances” (each worth one ton of carbon dioxide emissions) equal to the emissions cap in each year through 2050. Each year, each covered source would have been required to surrender one emissions allowance for each ton of carbon dioxide emissions (or the equivalent amount of each other covered greenhouse gas). This policy design creates a new market for tradable emissions allowances and introduces a market price on emissions of carbon dioxide. This introduces a new cost on production processes that cause the release of carbon dioxide emissions. Product prices in the economy would increase by an amount reflecting the price of emissions allowances (the amount of emissions associated with the product’s production multiplied by the price of emissions allowances) plus the cost of the resources (i.e., capital and operating costs) directed to reducing those emissions. In a recent study, my research colleagues and I estimated that about 86 percent of the change in product prices associated with a cap and trade program in 2016 would arise from the price of these emissions allowances, and just 14 percent of the change in product prices would arise from the resource costs expended to achieve emissions reductions.³ Thus, an economy-wide regulatory approach that successfully identified and imposed a comparable set of emissions reduction measures without a requirement to surrender emissions allowances would lead to a change in product prices that is comparable to the resource costs, or just 14 percent of the change in product prices that would result from a cap and trade program. Further, the preconstruction review program actually being implemented covers only a small fraction of the sources that would have been covered by a cap and trade program.

15. Although assertions in exhibits 13 and 19 regarding the economic impacts of a cap and trade program are irrelevant to assessing the impacts of the more modest vehicle standards and preconstruction review

³ Allowance value is expected to constitute the major share of costs resulting from the introduction of a price on carbon dioxide for the first couple decades of the program. For example, Burtraw et al. (2009) show that resources costs (including the cost of offset purchases) account for 13.5 percent of the total costs in 2016 of an allowance price of \$20.91. The remaining share (86.5 percent) is associated with the value of emissions allowances that would be introduced under a trading program. See: Dallas Burtraw, Richard Sweeney and Margaret Walls, 2009. “The Incidence of U.S. Climate Policy: Alternative Uses of Revenues from a Cap-and-Trade Auction,” 2009. *National Tax Journal*, LXII (3):497-518.

requirements, it should be noted that exhibits 13 and 19 present a highly exaggerated picture of the impacts of the cap and trade proposals. The industry-funded studies upon which they rely make assumptions that result in estimates far higher than those derived from analyses by well-respected nonpartisan institutions including the Environmental Protection Agency, the Energy Information Administration, and the Congressional Budget Office. Specifically, the studies on which exhibits 13 and 19 rely include some or all of the following flaws:

- a. Assuming that the economy already uses energy with perfect efficiency, which is widely recognized in the economics literature to be a false assumption;
 - b. Capping production capacity for cleaner energy resources at very low and sometimes even current levels;
 - c. Excluding from the analysis the impact of provisions in the proposed legislation to reduce costs or to help affected entities (for example, low-income individuals or vulnerable industries), such as rebates to energy intensive manufacturers, rebates to low-income households, energy efficiency programs, or opportunities to reduce greenhouse gases other than carbon dioxide (some of which are much cheaper to reduce than carbon dioxide).
 - d. Obscuring the fact that future incomes (as opposed to today's) are projected to grow much faster than future energy costs in the presence or absence of the policies. The result is that energy expenditures as a fraction of income go down over time, because economic growth is much faster than increases in energy costs, even under their extreme assumptions.
16. As a result of these errors, the more detailed assertions in exhibits 13 and 19 about secondary consequences of cap and trade policies, such as impacts on low income Americans, and the assertions in exhibit 11 about impacts on international competitiveness of American manufacturing, are also unreliable. The Congressional Budget Office, for example, concluded that the House-passed cap and trade bill (H.R. 2454) would actually improve the economic position of the lowest income quintile (the 20 percent of Americans with the lowest income), because the revenue from auctioning a portion of the emissions allowances would be rebated to low-income Americans through the tax code and other mechanisms, and the amount rebated would exceed the costs borne by low-income

Americans through direct and indirect increases in energy costs.⁴ Research by my colleagues and me buttress this finding. We find that distributional impact of the cap and trade bill would be progressive over the bottom four-fifths of the income distribution under alternative sets of assumptions about how various provisions of the legislation might be implemented. The average household in the lowest income quintile enjoys a net gain (negative burden), due to provisions in the bill itself and also to the indexing of social security benefits to changes in the price index. The indexing of social security also helps protect seniors across the income distribution, a fact that is not recognized in exhibit 13 (see page 2, paragraph 6). Historically the earned income tax credit also has been revised to reflect changes in the price index.⁵

17. Likewise, a federal interagency report on the impacts of the House bill on the manufacturing sector found that allowances allocated to that sector would cover the compliance costs for that sector well past 2020.⁶ As a result, cap and trade legislation would not have created significant international competitive disadvantage with foreign suppliers of manufactured products. In my judgment, the much more limited policy of requiring BACT for a fraction of the largest new and expanded industrial projects will also have no discernible impact on firms' international competitiveness, especially as this program does not impose any cost for emissions allowances. For these reasons, the predictions in exhibit 11 are unreliable.
18. In summary, the emission reduction requirements of an economy wide cap-and-trade program as designed in the proposed legislation would have negligible impacts on low-income Americans or the American manufacturing sector. The EPA's preconstruction review program – which will be imposed on far fewer sources and without allowance costs

⁴ Congressional Budget Office, *The Economic Effects of Legislation to Reduce Greenhouse-Gas Emissions* (Sept. 2009), <http://www.cbo.gov/ftpdocs/105xx/doc10573/09-17-Greenhouse-Gas.pdf>.

⁵ Joshua Blonz, Dallas Burtraw and Margaret Walls, 2010. "Climate Policy's Uncertain Outcomes for Households: The Role of Complex Allocation Schemes in Cap-and-Trade," *B. E. Journal of Economic Analysis and Policy*, forthcoming. See related RFF Discussion Paper 10-12-REV.

⁶ The Effects of H.R. 2454 on International Competitiveness and Emission Leakage in Energy-Intensive Trade-Exposed Industries, An Interagency Report Responding to a Request from Senators Bayh, Specter, Stabenow, McCaskill, and Brown (Dec. 2, 2009), http://www.epa.gov/climatechange/economics/pdfs/InteragencyReport_Competitiveness-EmissionLeakage.pdf.

– would have only a small fraction of the impact on product prices of a cap and trade program. And as noted, the vehicle standards will save consumers money.

19. Exhibit 13 fundamentally misrepresents the conclusion of work by my colleagues and me in the Pizer et al. paper cited on page iii and page 1 of the declaration. The Pizer et al. paper hypothesized two programs of equal economy-wide scope, one implementing a cap and trade mechanism, and another regulatory approach attempting to achieve the same amount of emission reductions through a fuel economy standard and a renewable electricity standard. In modeling the regulatory approach, the Pizer et al. paper assigned about two-thirds of the emissions reductions to the renewable electricity standard. However, the renewable electricity standard modeled in that paper has no relation to the preconstruction review requirements at issue here. The renewable electricity standard is a requirement that all electricity suppliers incorporate a specified percentage of electricity from renewable sources (such as wind turbines) into the electricity that they deliver. In contrast, the preconstruction review requirement under consideration is of a totally different nature, and applies to only a fraction of those electricity generating sources. For these reasons, the preconstruction review requirement would very likely involve only a fraction of the costs of the renewable electricity standard we analyzed. The Pizer et al. paper does not analyze a program resembling the one at issue here. Thus the paper's conclusion – that a cap and trade program would be less expensive than the combination of a renewable electricity standard and a fuel economy standard – is inapplicable to the program at issue here.
20. In conclusion, the exhibits 11, 13 and 19 assess a fundamentally different kind and scope of greenhouse gas emission reduction program than the ones at issue in this case, and are flawed even as analyses of that different program. As such, it is my judgment as an economist that they do not provide support for NAM's allegations of economic harm from the EPA actions at issue here.

I, Dallas Burtraw, declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge.

Executed this 25nd of October, 2010.

A handwritten signature in cursive script that reads "Dallas Burtraw". The signature is written in black ink and is positioned above the typed name.

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