Beacon Hill Institute at Suffolk University

Response to Laurie Johnson, Natural Resources Defense Council

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Laurie Johnson, an economist at the Natural Resources Defense Council, recently posted a blog entry that sharply criticizes recent BHI studies of the EPA's Clean Power Plan. It is important, in reading this blog, to understand that Dr. Johnson's job is to defend tooth-and-nail an organization whose purpose is to promote what it deems to be environmental protection at any cost to economic activity at home and abroad.

Now let's see what Dr. Johnson has to say and how she is willing to mislead her readers and resort to her own brand of junk economics in order to defend her employer's agenda.

Johnson: First and foremost, it [the BHI study] is **_not_** an analysis of the Clean Power Plan (CPP). The CPP sets limits on a very specific industry, the electricity system. BHI applies a back-of-the-envelope calculation to an economy-wide carbon tax analysis done by the Department of Energy's Energy Information Administration (EIA).

As such, the electricity grid and the changes that would result to it in response to clean energy incentives and energy efficiency savings in the CPP are entirely absent from the analysis.

BHI: In order to analyze the effects of the CPP, it is necessary to determine the cost of achieving the reduction in carbon emissions aimed for the EPA. Because the EIA analyzes a scenario in which carbon emissions are reduced by about the amount intended by the EPA, its analysis provides a useful benchmark for the cost of achieving the intended reductions in emissions. This cost, put by the EIA at $10 per tonne of carbon eliminated, helps get us to an estimate of the cost of the EPA rules on the economy.

Johnson: While EPA's analysis does show electricity price increases, it also shows electricity bill decreases, because we will be wasting less energy. Further, because the amount of labor associated with clean energy investments is many times higher than the amount associated with fossil generation, you actually get net job increases from the type of investment changes the CPP will promote, not the phantom losses BHI projects.

BHI: The idea here is that consumers should thank the EPA for raising the price of electricity since the higher price will induce them to conserve on electricity and thus reduce their bills. This would be much like thanking the oil companies for raising the price of gasoline since the higher price will induce drivers to use more public transportation.

Dr. Johnson's excuse-making squares nicely with the NRDC's environmental-purity-at-any-cost philosophy. One gets the impression, in reviewing the NRDC's lobbying efforts, that it would have us throw out our TV sets, ride bicycles to work and eat only vegetables organically grown in our home gardens. We wonder if NRDC flaks should also consider turning off their computers.

As for the argument that "clean energy" utilities are all to the good because they require more labor to construct than fossil-fuel plants, we have to wonder if Dr. Johnson slept through her courses in cost-benefit analysis on the way to her PhD. One of the canons of cost-benefit analysis is that labor belongs on the cost side of the ledger when comparing costs and benefits. If we did not classify labor as a cost, someone could use cost-benefit analysis to argue against using machines to move dirt on the premise that we create more jobs by letting men equipped with shovels do the job.

In our studies, we do, in fact, cite job losses as a collateral damage related to higher electricity prices. But those job losses are the result of losses in production that are brought about by higher electricity prices. Jobs are part of the cost of producing something, but when we produce less of something workers get laid off.

Johnson: Using EIA's carbon tax analysis, BHI then does a theoretically bizarre back of the envelope calculation: First, it multiplies EIA's projected electricity price increase by electricity consumption (by sector) to get the total electricity cost increase consumers would supposedly pay under its non-CPP CPP analysis. It then uses an (incorrect) estimate of the climate and health benefits of each ton of pollution reduced (the so called "social cost of carbon," or SCC), *and subtracts that from its estimated increase*

in electricity expenditures to estimate a final change in electricity price. That makes absolutely no sense. The correct way to do this sort of analysis (assuming you were actually modeling the CPP) is to analyze the *price* effects of a policy on the economy <u>separately</u> from the *environmental and health benefits* of the policy. Environmental and health benefits are not electricity prices, and should never be fed into a model as if they were.

BHI: We don't need a lecture on cost-benefit analysis from someone who considers make-work jobs a benefit in modeling climate change legislation. So we will try to give Dr. Johnson a refresher course on the task of estimating the effects of green energy policies on the economy.

Let's compare two methods by which the government can get utilities to substitute green for conventional power: mandates and subsidies. What the EPA has done is issue a mandate, the effect of which is to compel utilities to substitute more expensive power for coal-fired power. That's why the mandate raises electricity prices – indeed, causes them to "skyrocket," per President Obama's promise.

Subsidies work differently. When the government subsidizes wind and solar power, there is an initial fall in electricity prices as the subsidized power is dumped into the grid. Ultimately, price will rise as demand rises, but the initial impact is the opposite of the impact of a mandate.

The subsidies aren't free. They require the public to pay the taxes out of which they are funded. But the reduction in electricity prices partly offsets the burden of these taxes. In effect, the reduced electric rates serve as a way to compensate the taxpayer for making it possible for society to reap the (supposed) benefits from reduced emissions.

The problem with modeling a mandate is that we can identify the cost it imposes by estimating the rise in electricity prices. But then how do we account for the social benefits touted by the likes of Dr. Johnson? The answer is to do what we did: Calculate the effect on price as the effect *net of* those benefits.

We find it ironic that we were faulted in this critique for having thus downplayed the effect of the EPA rules on electric rates. Perhaps Dr. Johnson isn't comfortable with the fact that the rules inflict net harm on the economy even after we make a generous allowance for the environmental benefits they confer. It seems that she might have been more satisfied if we had reported higher levels of economic harm than we did, in fact, report.

Or maybe the answer lies in the position taken by the NRDC that individuals and firms burdened by the anti-carbon mandates advocated by the NRDC do not deserve compensation. The argument that they do is defensible under the "Takings"

clause of the Constitution – an interpretation the NRDC staunchly opposes. It seems that Dr. Johnson is loath to ascribe any benefit to the reduction in carbon emissions out of fear that someone will then want to find out about the costs.

Johnson: Even though the aforementioned calculation is nonsensical, we should note that it does not use the main estimate used by analysts for climate and health benefits from reducing carbon pollution, of approximately $40/ton (btw, this value itself is likely to be significantly underestimated). Instead it uses $10/ton. Worse, it calls this $10/ton a *market-based* benefit measure. It is not clear where it gets this price, but one thing we know for sure: *there is no "market price" for carbon pollution (i.e. what people are willing to pay in the market to reduce a ton of carbon pollution). That's the whole point!!!* We have an environmental mess on our hands that we are trying to fix precisely because polluters are not charged for the pollution costs they impose on others (economists call this an "externality").

BHI: The $10 SCC represents the tax on carbon that would induce a reduction in CO_2 emissions to levels sought by the EPA in issuing the CCP mandates, as modeled by the EIA. The imposition of this tax would raise the market price of emitting carbon from zero dollars to $10. Now think of the alleged climate benefits as social costs that are avoided by reducing carbon emissions. If a tax of this magnitude would bring about the reduction in CO_2 emissions sought by the EPA and if that reduction were "socially optimal," then the tax would raise the price of electricity by the social cost that is avoided as a result of the last unit of electricity that is withdrawn from the grid under the tax.

The fact that this $10 benefit (avoided cost) is minuscule in comparison to the private costs of the increased electric rates suggests that all the benefits combined are far lower than the $10 that we were willing to allow.

The reality is that neither the EPA nor Dr. Johnson has a clue as to the magnitude of the avoided social costs. Many economists argue that the social cost of carbon should be assumed to be zero due to the uncertainty as to the level of warming that is induced by CO_2 emissions, and the level of harm that said warming would produce. There is significant leakage of CO_2 emissions into the United States from other countries that do not impose reductions in CO_2 emissions. In recent years, firms in energy intensive industries, such as Dow Chemical and BASF, have located production in the United States to take advantage of the lower energy costs due to the surge in domestic fossil fuel production. Higher electricity costs due to the CCP would send electricity intensive companies and their emissions, such as manufacturing, looking to relocate

aboard. This would reduce any benefit from the reducing carbon emissions in the United States. Economists call this term leakage or unintended consequences.

We nevertheless ascribe some social value to the EPA rules in line with the hypothetical tax assumed in the EIA modeling. We do not "feed" the supposed benefits of those rules into the model as prices. Rather we feed them into the model as partial offsets to the price increases brought about by the EPA rules in reflection of the EIA modeling on which our analysis is based.

Johnson: Which takes me to my penultimate point: BHI's net "cost" calculation (quotes because the CPP actually has a high net benefit, not cost) is dramatically inflated because it removes "co-benefits" from reducing carbon pollution emissions. These are all the lives saved, heart attacks avoided, asthma attacks avoided (and many more benefits) due to reductions in other pollutants on top of the carbon pollution reduction--that also happen to decline when you reduce carbon pollution. Fossil-backed industry analyses try to argue over and over again that because these "co-pollutants" are regulated under other statutes of the Clean Air Act, somehow they don't count. That defies common sense, and I doubt anyone whose paycheck doesn't rely on making assumptions like this buys it. It's like saying that if you start an exercise regime to lose weight, but also get the myriad of other health benefits associated with exercise, these "co-benefits" don't count. Does that make sense? Of course not.

BHI: If my goal is to lose 20 pounds and if I can lose that 20 pounds by taking diet pills, then I can't justify joining a gym because, by doing so, I can lose the same 20 pounds.   It is no answer to say that I might as well join the gym and lose 40 pounds. The Centers for Disease Control recommend that healthy individuals get at least 150 minutes of moderate exercise per week.[1] Dr. Johnson would have us believe that another 150 minutes of exercise would provide the same health benefits as the first 150 minutes.

As we explain in our reports, particulate matter is currently regulated under the National Ambient Air Quality Standards (NAAQS). The NAAQS sets standards "based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health."[2] These standards are reviewed every five years to confirm that they are

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[1] Centers for Disease Control and Prevention, "How much physical activity do adults need?, http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html
[2] U.S. Code § 7409 - National primary and secondary ambient air quality standards. http://www.law.cornell.edu/uscode/text/42/7409

up to date with the most recent scientific research available.[3] Any reduction in particulate matter that might be attributed to the EPA rules is either (1) already provided for by the NAAQS or (2) greater than that provided for by the NAAQS and therefore unnecessary.

Johnson: Finally, BHI applies a "coal intensity" multiplier to calculate its estimated state-specific electricity price increases. For example, the average percentage of electricity generated from coal in the U.S. is 40%; if a state's electricity is 80% coal generated, BHI assumes the electricity price increase in that state is twice its national average estimate. That's like saying if the average percentage of smokers across the US is 10% of the population, and 20% of a population in a given state smokes, then the price of cigarettes will be double in that state. Not to mention: electricity is imported/exported across state lines, so even if this silly calculation made sense, it pays no attention to the actual market structure of electricity generation and consumption.

BHI: We used this calculation to distribute the U.S. net costs to the states, before calculating the change in electricity prices. Intentionally or not, Dr. Johnson confuses price differences with cost differences.

Again, to use the author's analogy let us suppose that Congress raised the tax on cigarettes but not cigars or other tobacco products. If we wanted to allocate the harm to smokers to the individual states, we would need to distribute the tax to industries based on their tobacco sales and then adjust for the portion of those sales that is accounted for by cigarettes. So, we would adjust the total tobacco sales in each state by the ratio to cigarette sales to total tobacco sales in that state.

Now, to return to the task of distributing the cost of the EPA rules across states, Suppose Massachusetts produced 10% of total U.S. electricity and used coal to produce 50% of its electricity, compared to 40% for the United States as a whole. We multiply the total the net costs of switching from coal to more costly fuels for the United States by 10% and the result by 50% divided by 40% to compute the cost to Massachusetts. We then used this cost figure to calculate the effect or energy prices.

Johnson: I don't even need to go into the already discredited STAMP model BHI plugged its silly price estimates into, or the fact that BHI has been denounced by its own host university for politically-driven research plans that did not follow the university's rules or match its mission.

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[3] U.S. EPA, "Process of Reviewing the National Ambient Air Quality Standards, http://www.epa.gov/ttn/naaqs/review.html.

BHI: The apparent basis of this criticism is that we draw on the precepts of Economics 101 in reaching our conclusions.   To wit: "Supply equals demand." Or "If a government policy causes the cost of producing something to rise, its price will rise, too." This orthodoxy is especially troubling for green advocates who aim to deindustrialize the country in the name of fuzzy climate change objectives. You can find our defense of the STAMP model at http://www.beaconhill.org.

Additional point:

One final smear was Dr. Johnson's reference to a grant proposal that we once wrote (but was never funded), in which we suggested that if state renewable energy rules lead to higher electricity rates, the state might want to consider repealing them. By seeking to convince the grantor that our work might have policy relevance, we allegedly "sought to manipulate economic research by producing reports that came to conclusions before performing any research."   In the fevered imagination of the NDRC and other groups, even a hint that research that might produce policy changes adverse to their ideological agenda is proof positive of a sell-out to carbon interests.

Our work, however, puts the lie to this claim. Recently, we reported that rules mandating green power could well end up *reducing* electric rates in three states – Rhode Island, Illinois and Maryland.   This is not because we sold out to environmentalists in those states but because our methodology yields different results for different states, depending on what the data show.

It is odd to be attacked by a group that has used junk economics to further policy goals at the public's expense. Among its credits, the NRDC succeeded in stopping a measure that would have brought water to drought-stricken Central Valley of California. The NRDC doesn't like video games so it issued a report in which it greatly exaggerated the amount of power consumed by people who play them. It has been behind an EPA rule that would double mileage standards at the cost of safety.

Finally, our host university did not denounce our work. It complained that we didn't follow certain procedures. We have asked the university to reconsider its complaint on the argument that we did, in fact, follow its procedures.

Johnson: Enough said.

BHI: Indeed!