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Comments on Proposed Rule, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, April 13, 2012, 77 Fed. Reg. 22392.

Thank you for the opportunity to provide comments on the proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units (“proposed rule”). We wish to express our support for this rule, and to strongly urge policymakers to complement these direct efforts to reduce emissions of greenhouse gases (GHG) with a range of companion policies that maximize the positive contribution of overall environmental policy to near-term economic recovery and to maximize these policies’ long-run effectiveness. A comprehensive approach – direct limits on pollution and complementary investment and incentive policies – will ensure that our country fully realizes the job retention and job-creating benefits of the clean energy economy.

In summary, the main points in this comment are:

1. The generic argument that the proposed rule should not be finalized because environmental regulations are “job-killers” is flat wrong. When the economy is operating well below potential, as it is today, regulatory changes have the potential to actually accelerate movement towards economic potential. As a result, calls to delay the rule based on appeals to overall economic weakness are not justified. Previous research on regulatory efforts limiting emissions of harmful pollutants has found that the net employment impacts of previous rules in the near-term are actually positive, while long-term impacts are neutral at worst.
2. The economic benefits of regulatory efforts to reduce emissions of harmful pollutants strongly indicate that complementary policies that leverage the job-generating aspects of emissions regulations will maximize near-term employment generation. In particular, a substantial investment in energy efficiency can reduce electricity costs while boosting capital spending, setting the stage for good job creation.
3. In addition to near-term employment-growth, complementary policies can help maximize the environmental effectiveness of regulatory changes like the proposed rule.
4. The suite of complementary policies directing efforts to limit harmful emissions should incorporate measures to address carbon leakage and deploy renewable energy — particularly in the case of those

emissions whose damage is global in scope and without any international agreement to limit them (e.g. greenhouse gases).

5. The benefits of the regulatory changes like the proposed rule can be distributed unevenly, so measures must be taken to ensure workers and communities are afforded every needed opportunity to thrive economically.
6. While the proposed rule's regulatory impact analysis (RIA) shows no economic impact from the new standards, this does not mean that moving forward with the rule has no economic value. The biggest reason for the RIA's no economic impact finding is that market forces have made building new sources that would *not* meet the standard uncompetitive. The proposed rule can hence be thought of as an insurance plan to ensure that whatever happens in the larger market for energy, long-term investments in energy infrastructure will reflect the reality of climate change.

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1. *The generic argument that the proposed rule should not be finalized because environmental regulations are "job-killers" is flat wrong. When the economy is operating well below potential, as it is today, regulatory changes have the potential to actually accelerate movement towards economic potential. As a result, calls to delay the rule based on appeals to overall economic weakness are not justified. Previous research on regulatory efforts limiting emissions of harmful pollutants has found that the net employment impacts of previous rules in the near-term are actually positive, while long-term impacts are neutral at worst.*

Generic arguments against finalizing the rule based on broad claims that regulatory changes are "job-killers" have no supporting evidence or any basis in economic theory. A broad review contrasting claims of large job-losses stemming from regulatory changes against the evidence finds nothing to support them.¹ An analysis of possible "fingerprints" of regulatory changes in slowing employment growth in the recovery from the Great Recession similarly finds no such evidence.² Follow-ups to this analysis have pointed to four-decade highs in corporate sector profit margins and extraordinarily low rates of capacity utilization. These findings buttress the point that nothing — not regulatory changes nor any other influence — seems to have made the cost-structure of corporate production unprofitable.³ The failure of corporate output to rise even in the face of these high profit margins is a clear signal that this output is demand-constrained, not repressed by excessive costs of production.

Further, detailed studies of specific environmental regulations meant to limit harmful emissions show that they are likely to increase overall employment levels in the near-term (see Bivens 2011c, 2012a, 2012c). The channels through which the regulatory change could potentially impact economic activity and employment, either positively or negatively, can be described as follows:

- Jobs will be created if regulations motivate companies to invest in pollution abatement and control (PAC) equipment, in particular carbon capture and storage technology. These investments also create "upstream" jobs in industries that supply the inputs into production of PAC equipment (e.g., steel and textiles).

¹ Irons and Shapiro (2011). Regulation, employment, and the economy: Fears of job loss are overblown. Available at

² Mishel (2011) Regulatory uncertainty: A phony explanation for our jobs problem. Available at <http://w3.epi-data.org/temp2011/EPIBriefingPaper330b.pdf>.

³ Bivens (2011). Available at <http://www.epi.org/blog/regulatory-uncertainty-business-profit-margins/>.

Bivens (2011). Available at <http://www.epi.org/blog/record-low-capacity-utilization-electric-utility-sector/>

- Conversely, if energy costs increase due to rules that limit emissions, then there is the potential to slow economic growth, as increased costs are passed on to consumers in the form of increased prices for goods and services.

The overall impact on total economy-wide employment will simply be the net impact of these channels. However, a key issue to keep in mind is that over the next few years, as the economy is projected to remain operating below full-potential, there are many reasons to believe that the job-slowness aspects of these price increases are likely to be extremely blunted. And in the case of the proposed carbon standard for power plants, no energy cost increases are anticipated given that the market has already shifted to select new, more competitive generating technologies that meet the proposed standard.

Amongst the mechanisms that will likely diminish any negative impact of price increases (whether or not spurred by regulatory change) are the historically high corporate profit margins referenced above. So long as firms are demand-constrained in their output, there will be a strong incentive for them to absorb small increases in input costs in order to maintain sales. Because of the 45-year high profit margins, these corporations will still maintain well above-normal profit margins. This healthy buffer to keep small supply-side cost increases from being passed through in final prices and blunting demand for overall output should be kept in mind as other regulatory changes — like limits on GHG emissions — are debated. So long as the economy is operating far below potential, as it is today, such regulatory changes are not likely to have any job-slowness impact at all.

The fact that potential job-slowness consequences of regulatory change are diminished when the economy is operating below potential also rebuts another commonly heard argument against regulation: that they should not be finalized so long as the economy and job-market remain distressed. To the contrary, because the job-generating aspects of these rules operate more strongly in depressed economic times (because the Federal Reserve is unlikely to lean against anything that pushes unemployment down, unlike in times when the Fed is successfully hitting its pre-determined unemployment target) while the job-slowness aspects are diminished, the *best* time to undertake regulation from a job-creation perspective is during times of generalized economic weakness.

2. *The economic benefits of regulatory efforts to reduce emissions of harmful pollutants strongly indicate that complementary policies that leverage the job-generating aspects of emissions regulations will maximize near-term employment generation. In particular, a substantial investment in energy efficiency can reduce electricity costs while boosting capital spending, setting the stage for good job creation.*

The potential economic benefits from emissions regulations, such as employment growth, also provide a very strong case for pairing them with complementary policies. Intelligently designed complementary policies can serve several useful functions:

- They can blunt any effects of the regulatory change that threaten to slow job-growth while boosting those effects that boost job-growth.
- They can improve the long-term effectiveness of direct emission limits by boosting the responsiveness of economic agents' decisions in the wake of these limits.
- They can ensure that no particular community or group of workers or firms bears a disproportionate burden in adapting to an economy with emission limits in place.

In the context of the proposed rule, the most directly relevant complementary policy that should be considered as a pair to the rule's direct emission limits is a substantial investment in energy efficiency. The standard itself includes a number of key provisions that help advance combined heat and power and waste heat recovery, two vital forms of industrial energy efficiency. In addition to the proposed standard, energy

efficiency investments can support jobs directly through the productive investments inherent in either retrofitting power plants or weatherizing residential, commercial, and industrial structures.

Evidence in a recent report by Synapse Energy Economics, Inc. suggests that complementary policies — in particular very aggressive energy-efficiency investments — could significantly boost capital spending in the near-term.⁴ In this Civil Society Institute commissioned report, Synapse models the effect of the “transition scenario”, a policy regime that calls for substantial increases in energy efficiency investments. By 2020, such investments are projected to reduce the costs of electricity generation by \$23 billion from reduced energy demand, while boosting capital spending on these efficiencies by \$19 billion.

Table 1: The Net Annual Costs of the Transition Scenario (\$2010, billions)

	2020	2030	2040	2040
Net Cost of Generation	-23	-50	-49	-58
Energy Efficiency	19	53	58	31
Demand Response	0.1	0.7	2.2	4
Incremental Transmission	0	0	0.2	1.1
New Energy Storage Costs	0	0	0.8	3.6
Avoided Environmental Controls	-11	-12	-3.2	0
Total	-16	-8.2	9	-18
Total (¢/kWh of electricity use)	-0.4	-0.2	0.3	-0.4

Source: Toward a Sustainable Future for the U.S. Power Sector: Beyond Business as Usual, Synapse Energy Economics, INC

While the Synapse results do not allow us to map the results of its Transition Scenario directly onto employment outcomes in the near-term (both because retail price impacts are not specified and because its time-frame is too far in the future to make reliable predictions), it provides strong suggestive evidence that energy efficiency investments would be an excellent complementary policy to undertake to boost the near-term job-creation impacts of climate policy *writ large*.

3. *In addition to near-term employment-growth, complementary policies can help maximize the environmental effectiveness of regulatory changes like from the proposed rule.*

Besides their salutary effect in boosting job creation from emissions regulation, complementary policies also provide great support for the long-run environmental objective of regulatory proposals like the proposed rule — namely reducing harmful emissions in the most efficient way possible.

The logic of this is easy to see. If the *cost* of emissions rises (either through regulatory limits or through market-based measures) that should reduce the volume of emissions. If prices rise in the wake of policies that increase the cost of emissions, investments in productive technologies that reduce the emissions intensity of production should increase, as demand for advanced products and processes that are less emissions-intensive will increase. This shift to less emissions-intensive products and processes, due to the higher cost of emissions, means increased investment in productive technologies that reduce the emissions intensity of production. A higher cost of emissions, in other words, would serve to make investments in mitigating them more profitable.

⁴ Keith, Biewald, Hausman, Takahashi, Vitolo, Comings, and Knight (2011). Toward a Sustainable Future for the U.S. Power Sector: Beyond Business as Usual 2011. Available at <http://www.civilsocietyinstitute.org/media/pdfs/Toward%20a%20Sustainable%20Future%2011-16-11.pdf>

This is too often underappreciated as a driver to emission reduction, specifically in the weight it pulls in having overall emissions respond to changes in their relative expensiveness.⁵ Further, it is worth noting that even absent any policy raising the cost of emissions, a number of market failures unrelated to externalities impedes investment in what are clearly in theory high-return efforts aimed at emissions mitigation.

Two of the more cogent analyses of market failures that keep investments in carbon mitigation from proceeding at efficient levels are from McKinsey (2010) and Rogers (2007).⁶ Both studies note that relative to the size of profitable opportunities for investment, the scale of energy efficiency activities is alarmingly small. Rogers (2007) focuses on weatherization and retrofits more narrowly, while McKinsey (2010) stresses these retrofits but also notes other efficiency investments stymied by possible market failures.

“Nobody seriously disputes the facts that: (1) buildings are the site of gigantic energy consumption and greenhouse gas (GHG) emissions in the U.S. and grossly inefficient in their energy use; (2) efficiency is the cheapest, most reliable, and climate-friendly way of meeting energy needs; (3) prudent investment in improving building energy efficiency can save utility customers (especially the poor) lots of money and earn investors an attractive return, (4) “retrofitting” buildings with current materials and technology to gain energy efficiency requires a lot of labor — ranging from essentially unskilled to very skilled — which has to be done here...So you might think that building energy retrofits would be a killer app, of appeal to anyone concerned about climate, energy security, helping the poor, making money, or growing domestic employment. But it’s not. Compared to the size of the opportunity — at its limit, covering all 300 billion square feet of building space in America with cost-effective retrofit measures — the amount of retrofitting that goes on is tiny.” (Rogers 2007)

Both studies also note a number of market barriers to energy efficiency investments:

- Poor information – both on the expected gains from efficiency investments as well as on the reliability and quality of firms and workers contracted to do the work.
- Split incentives – the person paying energy bills often is not the same person who owns the house or finances improvements.
- Fragmentation of opportunities – particularly with residential retrofits for energy efficiency, the sheer number of separate buildings and owners to negotiate with does not allow for economies of scale in the retrofit business.

Finally, both McKinsey (2010) and Rogers (2007) make compelling suggestions for how to overcome these problems. While neither plan relies even predominantly on purely public investments, both realize that substantial upfront financing resources are needed to kick-start such an energy efficiency program and suggest public financing as the appropriate resource.

Rogers (2007), for example, suggests the creation of a new kind of coordinating entity (which he labels E2s, for “Energy Efficiency”) that would serve as a locus between banks, utilities, governments, and end-users in order to solve many of the market failures that currently block large-scale efficiency investments. These E2s could be government entities though, even if they were not, would still need public finance to get up and running.

⁵ Rezai, Foley and Taylor (2009) note that the primary reason for the large economic damage from unpriced carbon emissions in nearly all conventional economic analyses of climate change is the absence of profitable investments in carbon mitigations by social institutions.

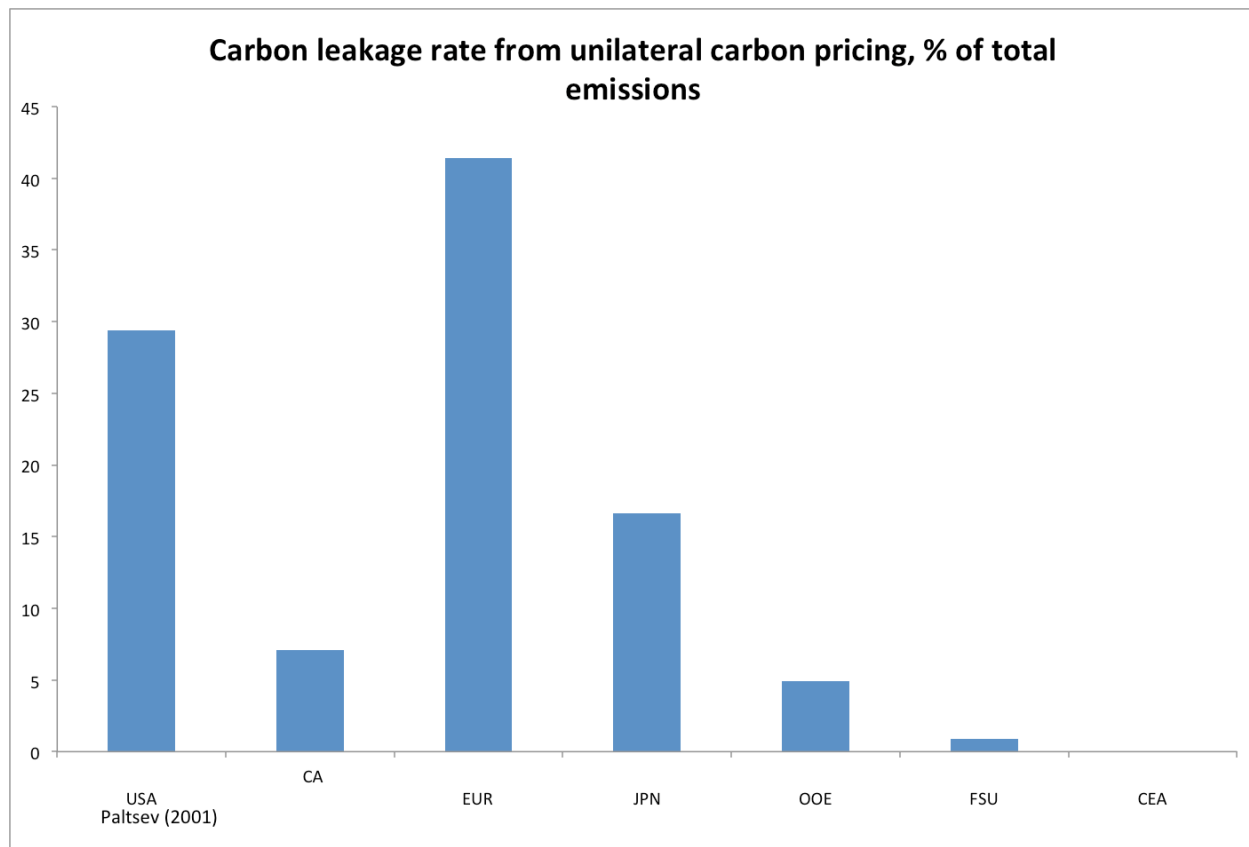
⁶ Rogers (2007), Seizing the Opportunity (For Climate, Jobs and Equity) in Building Energy Efficiency. Available at <http://www.greenforall.org/resources/seizing-the-opportunity-for-climate-jobs-and>

Given that failing to invest in emissions mitigation (1) leads to much less-efficient outcomes in terms of the volume of emissions reductions achieved and (2) may be the result of numerous market failures, a clear policy corollary emerges: ensure mitigation investments by undertaking some *public investment efforts directly*.

4. *The suite of complementary policies directing efforts to limit harmful emissions should incorporate measures to address carbon leakage and deploy renewable energy — particularly in the case of those emissions whose damage is global in scope and without any international agreement to limit them (e.g. greenhouse gases).*

This same logic that argues that energy efficiency investments can enhance the long-run environmental effectiveness of direct limits to harmful emissions often applies to other complementary policies — particularly efforts to ensure that no “leakage” occurs due to the unilateral national implementation of emissions reduction efforts, although because the proposed standard does not increase power costs, it presents no leakage issues. Many environmental problems, and the ones most pressing in regards to atmospheric emissions, are not localized. Greenhouse gas emissions, for example, cause the same potential damage to current and future generations regardless of where they originate. Given this, if the United States’ unilateral adoption of policies that raise the cost of emitting carbon leads to large-scale movement of carbon-intensive production to countries without strict emission standards (or costs), then a significant portion of the environmental benefit of the policy may be lost.

This “carbon leakage” problem can be significant for policies that raise the price of emissions in the absence of complementary policies — some studies have pegged the problem of carbon leakage as leading to a 25% reduction in the effectiveness of carbon reduction policies relative to a scenario where carbon leakage is blocked. The figure below shows the estimated rates of carbon leakage from various countries if they had adhered to the Kyoto protocol with no complementary policies put into place to prevent leakage to non-signatory countries.



The simplest way to block carbon leakage stemming from efforts to raise the cost of emissions is to have these efforts be common across national borders. In the absence of international agreements, however, countries that unilaterally raise the cost of carbon emissions can stop leakage largely through a range of instruments, including border adjustable tariffs that impose a fee on imported goods that reflects their carbon intensity.

Such border-adjustable tariffs have been politically controversial, but as a simple matter of textbook economics, they are the clearest second-best solution to a failure to reach an international climate agreement. A failure to incorporate these tariffs (or another complementary policy to stem carbon leakage) in any unilateral comprehensive policy package aimed at reducing carbon emissions would hamstring the policy's effectiveness.

Finally, the deployment of renewable energy sources provides the most direct impact on emissions reduction and — if deployed properly utilizing our domestic manufacturing supply chain — can create an impressive amount of jobs. The Synapse report referenced above calculates that well over 500,000 direct construction, operation, and maintenance jobs in renewable energy development could be created over the next ten years, given the proper economic drivers. This number, while aggressive, does not include the likely job creation within the manufacturing sector resulting from domestic supply chain growth, let alone induced jobs from improved economic activities surrounding the development of these projects.

- 5. The benefits of the regulatory changes like the proposed rule can be distributed unevenly, so measures must be taken to ensure workers and communities are afforded every needed opportunity to thrive economically.*

While we believe that regulatory limits on harmful emissions like the proposed rule are good for the *overall* economy (and the environment) in the near-term and the long-run, this does not mean that environmental regulations do not inflict losses on any particular group within the economy.

Because intelligently designed regulatory changes (optimally paired with complementary policies) provide the potential for overall boosts to living standards, and are appropriate and fair, policymakers must ensure that these overall gains are shared equitably. Communities and workers harmed by the transition from fossil-fuel electricity generation to other forms must receive particular attention from policymakers, and investments to support employment and incomes in these harmed communities must be a core part of a well-designed climate change policy.

- 6. While the proposed rule's regulatory impact analysis (RIA) shows no economic impact from the new standards, this does not mean that moving forward with the rule has no economic value. The biggest reason for the RIA's no economic impact finding is that market forces have made building new sources that would not meet the standard uncompetitive. The proposed rule can hence be thought of as an insurance plan to ensure that whatever happens in the larger market for energy, long-term investments in energy infrastructure will reflect the reality of climate change.*

The lack of economic impact indicated by the RIA released with the proposed rule does not mean the rule is not worth finalizing. The standard allows for traditional energy generation to be built, so long as it includes carbon reduction technology, such as carbon capture and storage, within ten years of the plant's operation. Ongoing dynamics in the market for energy, such as the current low cost of natural gas — and the expectation that it will remain low at least in the short term — has pushed power companies to plan most of its new construction to meet the proposed rule's standard. Should these dynamics change then by finalizing the rule the country would essentially have an insurance policy against the possibility of energy price dynamics leading to large increases in carbon emissions relative to what is currently forecast.

In short, the finding of no economic impact contained in the EPA RIA of the proposed rule provides no basis to argue that the rule should not go forward or that it provides no environmental benefits.

Conclusion

The EPA’s proposed rule to restrict harmful emissions of GHG is most welcome — the threat of global climate change is real and requires serious and sustained policy attention. However, the optimal response to this threat cannot come solely from the EPA — or any regulatory body. Complementary policies that leverage the economic incentives created by raising the cost of harmful emissions can do much to ensure that environmental policy *taken as a whole* provides the greatest benefits possible to American households and families.

Sincerely,



David Foster
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