

**Committee on Science, Space, & Technology  
Energy & Environment Subcommittee  
United States House of Representatives  
"Cost and Benefits of Environmental Regulations"  
Testimony of Richard Trzupek  
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WRITTEN**

**Introduction**

Thank you Chairman Harris, Ranking Member Miller and other members of the Subcommittee for the opportunity to testify on this important topic. I am Richard Trzupek, a chemist and environmental consultant, currently employed as a Principal Consultant with Trinity Consultants, Inc. I have been employed in the environmental industry for thirty years, initially as a stack tester (measuring air pollution emitted by industrial processes) and then as a consultant to industry. The vast majority of my clients are now, and always have been, small to mid-sized companies that do not have full-time environmental professionals on staff.

We have made enormous progress in cleaning up the environment in America since the passage of the Clean Air and Clean Water Acts over forty years ago. Everyone involved in that effort – from businesses to environmental groups to everyday Americans – should be proud of what we have accomplished together. Obviously, the Environmental Protection Agency has played a key role in that effort as well. However, as our air and water and soil continue to get cleaner year after year – as the EPA’s data clearly shows – the Agency’s mission has, in my view, increasingly morphed from protecting human health and the environment to finding ways to justify its existence.

I am not one of those who believes that the EPA should be eliminated. Instead, I believe that the EPA’s mission should be redefined to reflect the fact that the environment in America in 2012 is nothing like what the environment was in 1970. As the law stands today, the EPA has the ability to continually redefine its mission in many areas and it does so regularly, no matter the administration is in charge at the time. By continually moving the goalposts further and further back, and offering increasingly dubious economic justifications for doing so, the Agency creates the illusion that ever more heavy-handed regulation are necessary and worth the cost.

Working “in the trenches” with the men and women who struggle to comply with this ever-growing, ever more complex body of environmental regulations, I have seen the price that we all pay – not for environmental protection, but rather for environmental puritanism. We pay a price in terms of jobs lost, in terms of reduced productivity and in terms of opportunities not realized.

## Costs and Benefits – EPA Claims

The EPA routinely claims enormous monetary benefits when promulgating a new regulation. Typically, these benefits consist of two key components: “premature deaths avoided” and increased worker productivity due to less lost sick days. “Premature deaths avoided” is the largest component of the calculation, so I will focus on that.

In calculating the worth of premature deaths avoided, the EPA relies upon the “Value of a Statistical Life” (VSL). It currently uses a VSL of about \$9 million, which is, to my knowledge, the highest VSL used by any government agency. The Agency applies this value to each premature death avoided claimed, whether the theoretical death avoided involves extending an octogenarian’s life by two weeks or a newborn’s by seventy five years. The EPA, to my knowledge, has never said how much the average theoretical life is theoretically extended by the issuance of a new regulation. They simply claim the full value of the “statistical life” for each “premature death avoided”.

For example, the EPA recently claimed the recently promulgated Boiler MACT rule would result in \$22 billion to \$54 billion in economic benefits in 2014. This number is almost entirely driven by the premature deaths avoided metric, which the Agency claims is 2,500 to 6,500 premature deaths avoided per year.

Even more dubiously, EPA Director Lisa Jackson has claimed the Clean Air regulations are an investment that returns forty dollars in revenue for each dollar spent on regulating sources of air pollution. This figure comes from an EPA study in which the Agency made the following assertions:

*The direct benefits of the Clean Air Act from 1970 to 1990 include reduced incidence of a number of adverse human health effects, improvements in visibility, and avoided damage to agricultural crops. Based on the assumptions employed, the estimated economic value of these benefits ranges from \$5.6 to \$49.4 trillion, in 1990 dollars, with a mean, or central tendency estimate, of \$22.2 trillion.*

And, further on in the same document:

*The direct costs of implementing the Clean Air Act from 1970 to 1990, including annual compliance expenditures in the private sector and program implementation costs in the public sector, totaled \$523 billion in 1990 dollars.*

\$22.2 trillion divided \$523 billion is 42.4, which is where Director Jackson comes up with the 40 to 1 return on investment argument. Consider, however, that between 1970 and 1990, the aggregate total GDP of the United States was \$63 trillion. According to EPA logic, the Clean Air Act alone was responsible for 35% of that economic activity (\$22.2 trillion), and perhaps as much as 78% of it (\$49.4 trillion)! It is a ludicrous claim.

In considering the cost side of the cost-benefit analysis, the Agency typically considers only the capital cost of control equipment, operating and maintenance costs associated with the equipment and the man-hour costs of compliance activities. The Agency does not consider other economic, societal and health costs associated with each regulation and with the body of regulatory activity as a whole. Examples of these costs include:

- Job loss
- Health effects associated with job loss and reduced income
- Opportunity costs associated with facilities not built in the US because of the regulatory burden
- Costs passed on to the consumer and the effects that has on quality of life and health
- Facilities that move to other countries in whole or in part because the regulatory environment

### **Compliance Issues**

The most common lament among my clients goes something as follows: “I want to comply. I’m trying to comply. I just can’t figure out what I’m supposed to do.” Indeed, helping them figure it out is the reason they hire someone like me. Compliance with air quality regulations is not simply a matter of ensuring that emissions from a particular facility do not exceed applicable EPA standards. That part of compliance is relatively easy to understand in most cases.

But, compliance also involves records and reports and notifications and inspections and tests and permits and other bureaucratic minutia. Compliance involves EPA inspectors and EPA permit writers and EPA attorneys. As complex as environmental regulations have gotten, a great many “violations” these days have nothing to do with pollution, but rather are about paperwork. Yet, in terms of enforcement, it does not matter if the violation involves pollution or paperwork. If a company fails to file some obscure notification, or if an over-zealous, inexperienced inspector doesn’t like the way a particular record is being kept, the company is still subject to penalties of up to \$25,000 per day until the error is corrected, as provided for in the Clean Air Act.

The Agency does not typically collect \$25,000 per day per violation of the Clean Air Act. But it frequently wields that legal authority as a cudgel to force a company to accept a lesser – but still substantial – penalty demand. This is particularly the case when small or mid-sized businesses are involved. Few have the will or the resources to fight a penalty demand of a hundred thousand dollars for a paperwork violation, for example. It’s not worth it to hire a lawyer to go to battle with the EPA, especially when the Agency holds the \$25,000 per day, per violation threat over their heads.

Compliance with environmental regulations today is every bit as complex as compliance with tax code is for many Americans. It is an increasingly stressful burden on many businesses, in terms

of both the time spent on trying to stay in compliance with an ever-growing body of regulations and in terms of the way that overly-aggressive regulators can suppress the entrepreneurial spirit.

Let me give you an example of the latter phenomena. “Renewable Energy” is all the rage today and everyone is looking for new sources of renewable fuels. One source of renewable fuels is one of the oldest fuel sources on earth: human waste, in the form of sewage sludge. Dried sewage sludge is very similar to lignite (a form of coal) in terms of both fuel value and air pollutant characteristics. Since it’s not a fossil fuel, the combustion of sewage sludge does not add any additional carbon to the eco-system. So, rather than landfill it, land-apply it, or incinerate it (the three most popular disposal options today), why not recover the energy contained in sewage sludge? In some cases the EPA agrees, having recently approved of the use of dried sewage sludge as a supplementary fuel in coal-fired boilers.

One of my clients, Uzelac Industries, manufactures some of the driers that are used to dry sewage sludge for use as a supplementary fuel. Uzelac is a small, entrepreneurial metal fabrication shop located just outside of Milwaukee in Greendale, Wisconsin. The owner, Michael Uzelac, had an inspiration: rather than burn natural gas (a fossil fuel) to dry the sludge, why not use some of the dried sludge itself to do the job?

Unfortunately, EPA decided that burning dried sludge to operate the drier would be “incineration” and thus subject to an entirely different – and much more intrusive – set of rules than a coal boiler using the sludge as supplemental fuel would be subject to. Why? Because, according to the Agency, if you burn the sludge at the same site where it was produced, it’s a waste and then burning it is incineration. If you burn the sludge somewhere else, it’s a fuel and then burning it is not incineration. When this decision was related to us, my flip response was “so, if I load the dried sludge on a truck and drive it around the block, does it become a fuel?”

These kinds of tortuous, illogical regulatory analyses are a hallmark of the EPA today. The Department of Energy, the current administration and the American people may want innovation and new technologies, but the EPA hates dealing with them and the current regulatory structure is terribly unsuited to doing so.

### **The Permit System**

The permit system has two parts: the state (or other local, independent district) level and the federal level. In most cases, there are two types of permits that must be obtained: a construction permit, which is required before a new plant or process can be built, and an operating permit, which is required for continuing operation of the plant or process. Construction permit programs carry with them the most significant economic impacts, so I will focus on those programs here.

In general, the states are responsible for permitting smaller sources, while the states and the feds both get involved in permitting larger sources. At the state level, performance varies. Some states are very business friendly and work hard to push reasonable permits through quickly. Texas is an

excellent example of such a state. The TCEQ has an enviable reputation for working with industry, without compromising environmental protection. Other states are much more difficult to work with. Permits in some states take far too long to obtain and, when issued, are often littered with needlessly intrusive conditions that do nothing to protect the environment.

At the federal level, the permit program is much more complex. Major sources must go through the EPA's Prevention of Significant Deterioration (PSD) permit program. The PSD permitting process is fraught with peril and, as currently constituted, frequently results in the cancellation of projects that would otherwise modernize American infrastructure and further advance the remarkable environmental progress we have made.

The PSD program started with a good idea: as large sources of air pollution are replaced in the natural capital equipment life-cycle, let's make sure that the project includes state of the art controls. It makes sense to require a facility to install a \$10 million control device as part of a \$500 million capital project to build a brand new plant that's going to be around for forty years. It doesn't make sense to require a facility that's on its last legs to make the same investment. Thus, as fleets turned over, the air in the natural scheme of things, emissions would continue to drop.

That's what PSD was supposed to be. Perversely, it's had exactly the opposite effect in some big industries. Take our coal fleet, for example. Director Jackson is on-record chiding utility operators for running inefficient boilers that are forty years old or more. The implication being that nobody tried to replace those old inefficient boilers with newer, more efficient boilers. That is simply not true.

The Sierra Club has a portion of its website dedicated to its "Beyond Coal" program. In it, the organization proudly records the tens of thousands of megawatts of new, more efficient coal-fired boiler construction projects it has helped to kill. Those are the boilers that should have replaced the older boilers in the fleet and they would have, had organizations like the Sierra Club not prevented them from being built. And, the PSD program is the weapon that organization's like the Sierra Club and NRDC use to kill projects they don't like. They flood agencies with public comments that, under PSD, the agencies are bound to read and respond to. They file appeals, both in the judicial system and with the Environmental Appeals Board. In the latter case, just filing an appeal – whether it has merit or not – automatically stays the permit.

PSD is thus used to throw obstacle after obstacle in the way of new projects. The goal is to so frustrate a developer that he or she will eventually abandon the project. Since capital has a shelf-life, opposition groups like the Sierra Club are often remarkably successful utilizing this strategy. Ultimately, the combination of PSD and well-healed, aggressive opposition groups are the reason that we haven't built a new oil refinery in the United States since 1975, and that we instead rely on an aging refineries instead. It's also the reason that we have so many old coal-boilers chugging along. This kind of activity doesn't do the environment any good and it's hardly sound

economic policy. We need to find a way to go back and make PSD do what it was intended to do.

### **Recent Regulatory Developments**

In the course of the last four years, the EPA has effectively banned the construction of any new, modern coal fired power plants in the United States. This has been accomplished not by the passage of a single regulation, but by the passage of multiple regulations that clearly target coal-fired power in what I have come to think of as a regulatory tsunami. Some of the key regulations promulgated include:

- *A New, Short Term Ambient Air Standard for Nitrogen Dioxide* This standard was put in place in addition to the existing annual Nitrogen Dioxide standard. The short term standard is so stringent that it is virtually impossible for a new coal fired power plant not to violate it. And, since new power plants are required to perform computer dispersion modeling to show that emissions won't exceed ambient air quality standards anywhere, under any conceivable weather conditions, this standard effectively prevents the construction of new, modern, efficient coal-fired generation to replace our aging fleet of coal boilers.
- *A New, Short Term Standard for Sulfur Dioxide* Again, the standard is so low that it is virtually impossible for new coal-fired generation not to violate it, even with state of the art controls.
- *Greenhouse Gas Permitting* Large new sources of greenhouse gases must go through the EPA's major source, PSD construction permit program. As part of PSD permitting, sources must show that the controls used to reduce target air pollutants meet the definition of Best Available Control Technology (BACT). The EPA has made it clear, through guidance documents, that a coal-fired power plant will not pass the "BACT test" unless it uses Carbon Capture and Sequestration (CSS) to control greenhouse gas emissions. Since CSS technology is neither feasible nor affordable in large scale, this program also prevents the construction of new, modern, efficient coal-fired generation to replace our aging fleet.
- *Greenhouse Gas New Source Performance Standards* The EPA recently published a New Source Performance Standard (NSPS) for Greenhouse Gas emissions from Electric Generating Units (EGU). No coal-fired power plant can meet that standard without the use of CSS, which – as noted above – is neither technically feasible nor affordable in large scale. Combined cycle, natural gas-fired power plants are capable of meeting the standard.

- *Utility MACT & Boiler MACT* Maximum Achievable Control Technology (MACT) standards are supposed to be about minimizing emissions of Hazardous Air Pollutants (or “HAPs”, as opposed to the more common Criteria Air Pollutants). What the EPA has done in establishing MACT standards for large EGUs (Utility MACT) and industrial boilers (Boiler MACT) goes far beyond this goal. The standards themselves are incredibly stringent and that alone will hasten the retirement of many coal-fired assets in the United States. As troubling are provisions in the rules that will involve the EPA much more closely than ever in operation of the EGU’s and boilers that remain. There are requirements to conduct periodic tune-ups and energy efficiency audits within the rules. Now, there is nothing wrong with tuning up boilers and conducting energy efficiency audits. Indeed, most companies do so on their own, because there is a monetary incentive to minimize energy use. But, involving the EPA in the process is foolish, overly intrusive and will be counter-productive in many cases. Inexperienced, over-zealous EPA officials at the federal and state levels often make foolish and counter-productive decisions about the pollution control systems that are within their purview today. A rule that gives them the opportunity to interfere at the operational level – as these rules clearly do – is a recipe for disaster.

It should also be noted that EPA officials are using threat of enforcement action to force smaller coal-fired boilers, such as municipal boilers or those operated by co-ops, to shut down or convert their boilers to fire another fuel (typically natural gas or biomass). Given the relatively small size of these units and the entities that operate them, and given EPA’s spectacular, multi-million dollar successes in going after larger utility boilers, few – if any – operators of these smaller boilers would dare to fight the Agency.

All of these regulatory actions, and many more, mean that the coal fleet in the United States will continue to shrink and no new coal-fired plants will be built to replace retired units. Construction of new natural gas fired generation is the only possible way to replace that base-load capacity without endangering the reliability of the grid. (Nuclear plants, even if permitted, cannot be built quickly enough; wind power is nowhere near reliable enough to provide base-load capacity; and solar plants are also terribly unreliable and the size of even the largest solar plants are pitifully small compared to the size of the coal-fired plants that will be retired).

At the moment, natural gas is plentiful and relatively cheap. Thus, repowering will likely be relatively painless in the short term. However, natural gas prices are historically much more volatile than coal prices. The natural gas industry – which is doing a tremendous job in my opinion – will find and create new markets for their product. Prices will eventually rise again and this will have a much more significant effect on the cost of electricity than is currently the case.

We are thus in the midst of the monumental shift in the way that America generates its electric power. Dreams of supposedly “free” wind and solar power make for good talking points and heart-warming commercials, but there is little substance to found in those dreams from a science

and engineering point of view. According to Department of Energy Data, both solar plants and wind farms generate less than 20% of the power they are designed to produce. One cannot run an electric grid by relying on sources that we can't count on over 80% of the time.

As a practical matter, the only sources of power that are both abundant enough and reliable enough to provide the base-load generation that is critical to maintaining a healthy grid are coal, nuclear and natural gas. Through a series of regulatory initiatives, the EPA has effectively decided that natural gas will be the fuel of choice in the years to come. Not Congress. Not the free market. That decision has been made by the Agency alone. I cannot say whether Congresses past intended to grant the EPA the authority to make such a decision when the original Clean Air Act and the Clean Air Act Amendments of 1990 were passed, but it is clear that this EPA believes it has that authority. If the EPA is going to decide energy policy to this extent, I would hope – as a private citizen – that someone takes a closer look at their decision-making process.

### **Conclusion**

In conclusion, as I have stated in my testimony, the EPA continues to have a greater and greater effect on industry, energy production and economic activity in general, with increasingly smaller environmental returns. It's been twenty two years since Congress has taken a fresh look at the Clean Air Act. It's time to do so again.

Thank you again for the opportunity to testify before the committee.