



A MANUFACTURING PERSPECTIVE ON

EPA'S "CLEAN POWER PLAN" – PROPOSED GHG REGULATION FOR EXISTING ELECTRIC GENERATING UNITS

EXECUTIVE SUMMARY

IECA does not support the proposal, because EPA does not have authority to regulate the electricity grid and its market. Among other things, the EPA cannot require States to change their power generation resource mix. EPA's authority is limited to "inside-the-fence" for the power generator. It is essential that all State GHG policy action is cost-effective, that electric rates are just and reasonable, and that States do not subjugate jurisdiction of the electric grid to EPA. The proposed rule proposes to regulate the electricity grid and its market, and it does not have the authority to do so.

IECA supports responsible cost-effective action to address climate change, but it is essential that it is implemented on an international scale. Unilateral action by the U.S. will disadvantage manufacturers who compete with companies from countries that have not incurred the costs of GHG reduction regulations, making the current proposal, which lacks any mechanism to deal with carbon leakage, a lose-lose for global emissions and the U.S. economy.

The U.S. and all major carbon emitting economies must forge an equitable plan for long-term reduction of GHGs. The U.S. cannot go it alone and expect that our actions will have a meaningful climate impact in a world economy that is using more coal and other fossil fuels every day. Developing nations already emit more CO₂ than advanced industrial nations, and the International Energy Agency (IEA) projects that the developing nations' share of global emissions will grow steadily. For example, the EPA says that the proposed rule would reduce 730 million metric tons of carbon by 2030. China increased its emissions nearly that amount in one year. From 2010 to 2011, China's CO₂ emissions rose by 705 million tons. We are in significant competition with Chinese companies.

That being said, the industrial sector is the only sector in the U.S. with lower GHG emissions today than were present in 1973. Unlike other sectors of the U.S. economy, the industrial sector competes globally and is extremely price sensitive. This means that when energy costs rise, employment and investment falls. The reverse is also true that if energy costs are low and stable, employment and investment increases, which is what is driving the on-shoring we are seeing today.

The energy-intensive trade-exposed (EITE) industries require a level playing field to prevent GHG leakage under the proposed rule, because all costs from the EPA proposed rule will be passed onto us, the consumer. As costs are imposed, manufacturers will shift production and jobs to states or foreign countries that are low-cost. Policies will need to be put in place to ensure a level playing field until our competitors have equal cost of compliance.

Most manufacturers operate their facilities 24/7 and require reliable electricity to operate. The EPA rule raises serious reliability concerns because of the significant shift from coal-to-natural gas and renewable energy. Reliability concerns include: 1) the loss of production from outages, 2) the potential damage to equipment caused by unplanned outages, and 3) environmental releases to the community caused from unplanned outages. States must not impose requirements for manufacturers to do energy efficiency under this rule. States should not support regulating GHG emissions outside-the-fence line.

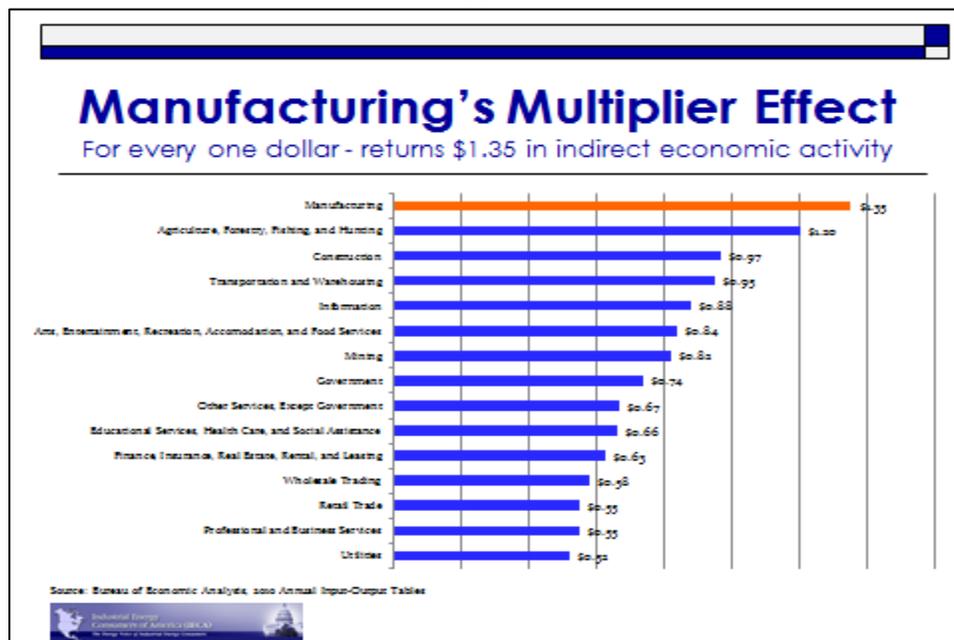
Finally, it is of great concern that the Federal Energy Regulatory Commission (FERC) has not analyzed the implications of the EPA GHG rule to electric reliability, for which they have responsibility. We encourage States to urge FERC to do their job and complete such an evaluation before the rule becomes final. The power grid is enormously complicated whereby generating units in one State could supply multiple states which means, some states may be required to reduce GHG emissions when they do not have the capability to do so because the generating sites are in other states.

The manufacturing sector is a significant and valuable contributor to the U.S. economy.

Manufacturing contributes over \$2.0 trillion to the U.S. economy, which represents 11.9 percent of GDP, and supports over 17.2 million jobs or one in six private sector jobs. Manufacturing companies are recovering from the great recession and are investing capital and creating jobs. Re-shoring is in an early stage and underway. From 2010 to 2013, manufacturing created 568,108 jobs. Manufacturing is a powerful economic driver because for every \$1.00 invested by manufacturing, it yields \$1.35 of indirect economic activity – the highest of any sector of the U.S. economy (see Figure 1). Manufacturing jobs also pay well, and the average annual pay is around \$60,496, according to the Bureau of Labor Statistics (BLS).

Since 1987, the energy intensity of manufacturing has improved greatly with an overall decrease of 47.9 percent, while gross output increased by 149.4 percent. This is a significant accomplishment which is attributable to a focus on increased productivity, energy efficiency, and investment in new technology. Manufacturing CO2 emissions are 22.4 percent below 1973 levels, while the residential, commercial, transportation and power sector emissions are up 16.4%, 54%, 38.1%, and 58.5% respectively.

FIGURE 1



The EPA proposed rule.

On June 18, 2014, EPA published in the Federal Register the proposed guidelines for reducing CO₂ emissions from existing fossil-fueled power plants. The overall reduction is equivalent to a 30% cut from 2005 emissions, but is measured against each State's 2012 emission rate in pounds of CO₂ per megawatt-hour (MWh) of fossil-based electric generation.

EPA has provided interim and final targets for each State to meet in terms of reduced CO₂ per MWh of electric generation. Progress toward meeting the interim target is to commence by 2020, with the final target to be achieved by 2030.

EPA has proposed four blocks to reducing GHG emissions:

- *Block 1* – Reduce carbon intensity of coal generation through heat rate improvements. This requires an across the board 6% emission reduction.
- *Block 2* – Replace carbon intensive coal generation with existing and under construction NGCC (natural gas combined cycle) facilities.
 - All NGCC facilities operate at 70% capacity.
 - Emissions reductions vary based on current dispatch levels.
- *Block 3* – Replace carbon intensive coal generation with nuclear and renewable energy generation.
 - Nuclear – complete all new construction; avoid projected retirement of 5.8% of current fleet.
 - Renewable energy – increased generation to achieve regional average of current RPS mandates.
- *Block 4* – Reduce demand for carbon intensive coal generation through demand-side efficiency improvements.
 - Average annual energy efficiency improvements of 1.5%.

It is very important to note that the EPA does not have authority to require States to do any of the things included in these four blocks. EPA does not have the authority to require a State to operate natural gas-fired power generators at higher rates of capacity, nor require coal-fired power generators to run at lower rates of capacity. The EPA does not have the authority to mandate greater use of renewable energy or to require less consumption of energy by consumers through greater energy efficiency. The EPA does have authority to require a State to reduce GHG emissions in power plants.

All costs (regulatory and energy) associated with EPA regulations are eventually passed onto us, the consumer, and this threatens job creation.

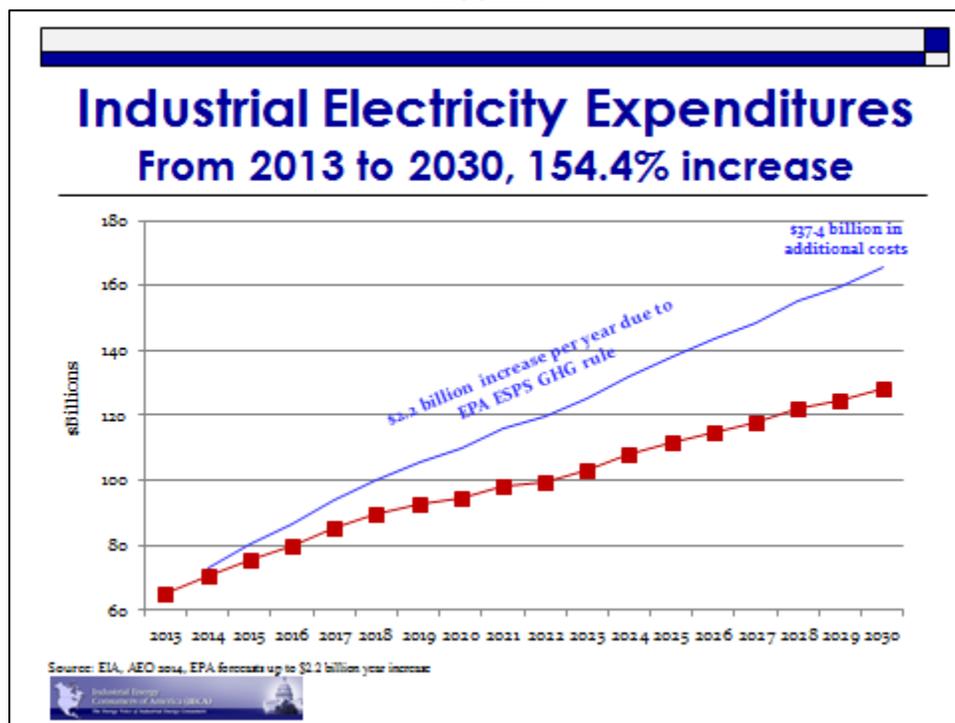
The manufacturing sector consumes 26 percent of U.S. electricity and 29 percent of U.S. natural gas, and requires affordable energy prices to compete with global competition, create jobs, and to generate economic growth.

1. *Industrial electricity cost impacts:* According to the EPA, the rule will increase industrial electricity prices by \$2.2 billion each year, or \$37.4 billion by 2030 to the cost of the EIA AEO 2014 electricity forecast. Combined, industrial electricity would rise 154 percent by 2030 (see Figure 2). This means that from 2013 to 2030, a 17-year period, electricity prices will raise an average of 9.1 percent each year. Total industrial sector electricity costs would rise from about \$65.1 billion in 2013 to 165.6 billion in 2030, a 154 percent increase. This is in contrast to the last seventeen year period (1996 to 2013), where prices rose from \$4.60 KWh in 1996 to \$6.82 KWh, only a 48.3 percent increase.

2. *Industrial natural gas cost impact:* EPA also states that industrial natural gas prices would increase by up to 12 percent (see Figure 3).¹ A 12 percent increase above EIA AEO 2014 forecasts increases total natural gas industrial expenditures from \$34.8 in 2013 to \$91.8 billion in 2030, a 164 percent increase.

3. *U.S. electricity cost impact:* A study done by the U.S. Chamber of Commerce states that electricity prices will increase \$17 billion each year through 2030 for a combined net cost increase of \$289 billion, or a 138.6% increase in electricity costs (see Figure 4). Of great concern is that the cost of this rule is additive to the costs from several other EPA rules, such as the Mercury MACT rule, the Refinery Sector Rule proposal and the Cross State Air Pollution Rule (CSAPR). And, EPA is also required to implement lower ozone standards by 2015. Individually and cumulatively, the increase in costs greatly impairs our ability to produce products in the U.S.

FIGURE 2



¹ EPA Clean Power Plan Regulatory Impact Analysis, available at <http://www2.epa.gov/site/production/files/2014-06/documents/20140602ria-clean-power-plan.pdf>

FIGURE 3

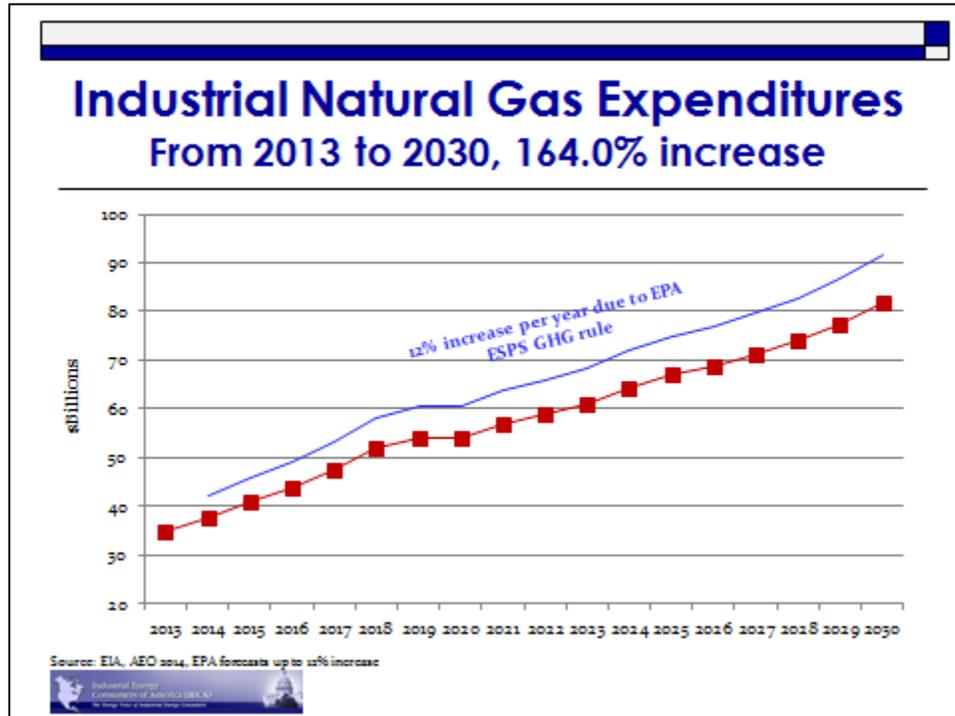
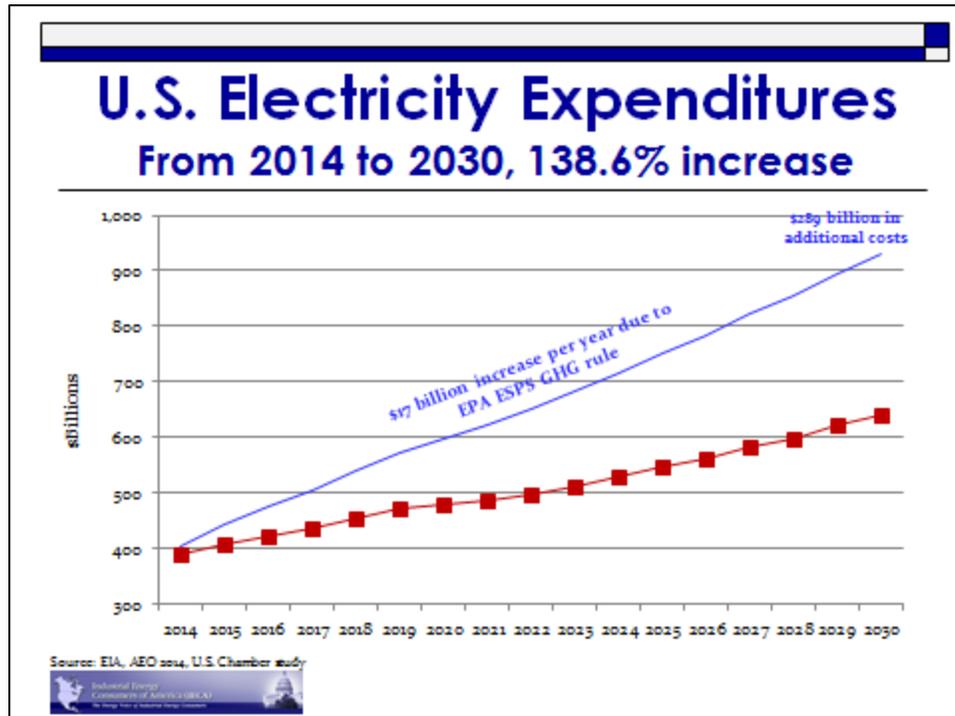


FIGURE 4



U.S. manufacturing already has a 20 percent cost disadvantage versus foreign competitors.

Even before the cost burden of new EPA GHG regulations are imposed, U.S. manufacturers suffer from high structural imposed cost. Since 2003, The Manufacturing Institute has tracked the excess burden of structural costs such as corporate tax liability, employee benefits, tort litigation, regulatory compliance, and energy of U.S. manufacturers relative to their counterparts in our nine largest trading partners. This

competitive disadvantage persisted throughout the first decade of the century and started to increase again in 2011.

Taken together, structural costs were 20 percent higher than for our major competitors, up from 17.6 percent in 2008. The expense of complying with federal regulations is steep. Manufacturers spend an estimated \$192 billion annually to abide by economic, environmental, workplace safety regulations, and to ensure tax compliance—equivalent to an 11 percent “regulatory compliance tax.” As an example, U.S. industry is faced with the highest pollution abatement costs compared with its major trading partners—even higher than the so-called “green economies” of Western Europe. Regulatory costs impact the global competitiveness of manufacturers, constrain the demand for employees in U.S. facilities, and further encourage firms to locate production abroad.

Even before regulating carbon from power plants, seven of EPA’s final or pending regulations are projected to cost the economy more than \$60 billion per year in lost GDP, and will cause the annual loss of nearly 900,000 jobs.²

Energy-intensive trade-exposed industries consume over 81.6 percent of all energy of the manufacturing sector.

Energy-intensive trade-exposed industries (EITE), a subsection of the manufacturing sector, consumes over 80 percent of all energy within the manufacturing sector and 15.8 percent of U.S. energy consumption overall. These industries include: chemical, plastics, steel, iron ore, aluminum, paper, food and beverage processing, nitrogen fertilizer, glass, industrial gases, oil refining, and cement. EITE industries are energy price sensitive and exhibit significant foreign trade competition. These industries provide the building block products that are essential for economic growth. If they are not produced here, they are imported from other countries, increasing the U.S. trade deficit. These industries must be sheltered from increased energy costs which competitors from foreign countries do not have.

Higher energy costs create GHG and job leakage to other countries, which accomplishes nothing.

As electricity and natural gas prices rise, manufacturing facilities move offshore to remain competitive, as well as good paying jobs and GHG emissions. This is referred to as “GHG leakage.” EITE industries were recognized during the Waxman-Markey cap and trade legislation as needing special treatment such as carbon allowances and border adjustments to avoid GHG leakage. However, the Waxman-Markey legislation failed to include all EITE industries. Forcing EITEs offshore accomplishes nothing environmentally and damages the domestic economy and employment. The EU ETS clearly illustrates that this is a serious threat to achieving GHG reductions and job creation. Even now, 9 years after implementation, the EU ETS continues to allocate GHG allowances to EITE industries to prevent them from moving their jobs offshore. The State of California has also recognized the problem and has issued allowances to EITE industries.

Even if manufacturing does not “move” offshore, as U.S. electric rates increase, foreign manufactures become more competitive. Products are then produced in countries with higher emissions and imported to the U.S. This in turn results in a net “increase” in global carbon emissions, reduced U.S. economic growth, and U.S. manufacturers lose production or worse they go out of business.

² NERA Economic Consulting, Economic Implications of Recent and Anticipated EPA Regulations Affecting the Electricity Sector, October 2012. The seven EPA regulations are the Mercury and Air Toxics Standards(MATS) rule; the regional haze rule; revised ambient air quality standards for particulate matter, ozone, and sulfur dioxide; as well as regulations for coal combustion residuals and cooling water intake structures.

The EPA proposed rule does not contain provisions to prevent GHG leakage. Manufacturing companies will shift production and jobs to low-cost states or offshore.

Because the EPA's proposed rule does nothing to prevent GHG and job leakage, it will be necessary for States to do so. Without action to prevent costs from flowing to EITE industries such as free allowances, manufacturing companies will shift production and jobs first to other states that have lower costs and secondly to foreign countries, if competitiveness cannot be achieved.

EPA should perform a "carbon leakage" analysis.

Because the EPA proposed rule will significantly increase both electricity and natural gas prices, it is essential that the EPA complete a carbon leakage analysis. The carbon, jobs, and lost economic growth leakage amount should be subtracted from the EPA's benefit calculations.

Coal-fired electric generation is essential for reliability.

The key to low-cost and reliable power has always been a diverse fuel mix which includes coal, the lowest cost fossil fuel energy source for base load generation. The EPA carbon reduction requirements will directly reduce use of coal, fuel flexibility, and reliability. Grid reliability problems lead to electricity curtailment of manufacturing facilities and can cost tens of thousands of dollars for small facilities and tens of millions of dollars for larger facilities. This is especially troublesome during peak demand periods. Reliability is also a safety issue for employees.

Accelerating demand for natural gas by all sectors of the economy, plus pipeline and LNG exports, have placed increased stress on the reliability of the natural gas pipeline and storage system. All forecasts indicate continued increased demand. Peak demand, like the winter of 2013-2014 illustrates that reliability can be seriously threatened when home heating, power generation and industrial demand is competing all at the same time for a finite amount of natural gas from a single pipeline. The result was significant curtailments by industrials and spiking natural gas prices of almost \$100 per mmBtu and electricity prices of upwards to \$1,000 MWh.

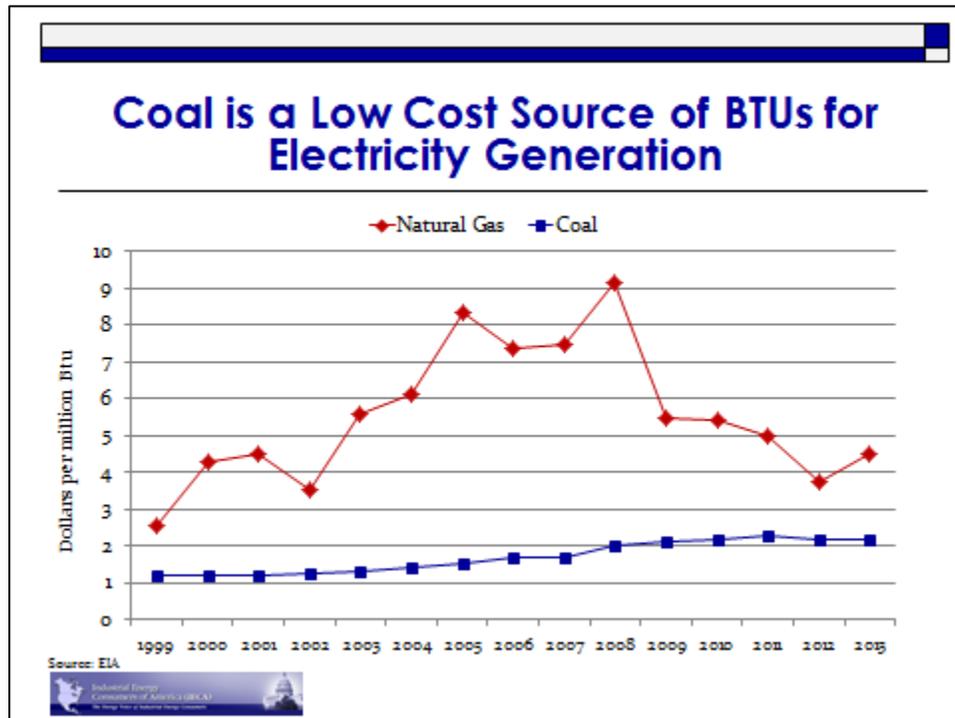
Coal-fired power is a major and vital solution to reliability. Coal is not dependent upon restrictive capacity of a pipeline. Coal has a separate delivery system via rail. Unlike natural gas, coal can be stored onsite by the power generation station or the industrial facility. It is cost prohibitive to store natural gas onsite.

This problem will become even more pronounced as the U.S. begins to export larger and larger quantities of natural gas via pipeline and LNG. The U.S. Department of Energy (DOE) has already approved or conditionally approved LNG export shipments equal to 15 percent of U.S. 2013 demand, also equal to the largest LNG exporter in the world, Qatar. Essentially all of the major country importers of LNG reside in the Northern Hemisphere which means that their winter heating season is the same as ours. This means that LNG exports will be competing for the same natural gas that is needed to heat homes, run factories and power plants. Limited pipeline and storage capacity is inevitable and accompanies spiking prices for domestic consumers.

Coal-fired electric generation contributes to low electricity prices.

Coal is an important, abundant, and low cost BTU energy source for generation of electricity (see Figure 5). Coal-based electricity generation represents about 40 percent of U.S. capacity. The low cost of coal competes with natural gas to help keep electricity prices lower than they would be otherwise. This will become increasingly important as natural gas prices rise because of higher demand.

FIGURE 5



EPA does not have authority over the States electricity grids.

EPA does not have authority to require States to change their power generation resource mix or cap and reduce emission rates at the State level. EPA’s authority is limited to “inside-the-fence” of the power generator.

Neither EPA, nor any federal government agency, has the power to dictate to States how to run their electric systems. Under Section 111(d), the maximum extent of EPA’s power is to call on States to submit plans that set feasible, cost-effective performance standards that existing generators can achieve at their facility. These limits must be an emission rate, specific to unit design (not fuel or sector wide). It cannot directly or even indirectly require, in the guise of setting performance standards, generators to significantly increase their use of certain fuels (e.g., natural gas), renewable, and energy efficiency resources.

EPA’s proposal directly inserts the agency into matters that are reserved for State regulation. States, through their public service commissions, have exclusive authority over electric resource planning. Not even the FERC, much less EPA, has authority to dictate electric resource choices to States. EPA’s proposed rule implies that Congress authorized EPA, through Section 111, to be able to mandate that States restructure their electric systems. They did not.

EPA has not demonstrated that the GHG reductions are reasonably technologically achievable or at reasonable costs.

EPA has asserted that each of the individual building block targets assigned to States are based on “reasonably achievable rather than maximum performance levels.” However, the technology assumptions have yet to be demonstrated as achievable at a reasonable cost and in some cases achievable at any cost. Detailed analysis must be undertaken by EPA and made available to the public.

The level of GHG reduction must be based on achievable standards within-the-fence line.

Federal guidelines must be achievable based on technologies that have been demonstrated in commercial operation at commercial scale, and without significant government subsidy for the regulated source category while taking into consideration the costs of compliance and the impacts compliance will have on energy prices and reliability. To preserve reliability and the need for grid flexibility, EPA should allow for variations due to operations and maintenance requirements, minimize complexity to reduce administrative costs, and maximize transparency to companies and consumers. To the extent practicable, EPA should let the market drive the selection of solutions.

States should not regulate GHG emissions outside-the-fence line.

GHG reduction levels must be based upon what is achievable inside-the-fence line using cost-effective technology and practices. Separate guidelines should be established for subcategories of electric generating units accounting for unit design and fuel type. EPA is pursuing a regulatory standard on one industry source (fossil-fuel power plants) based on potential actions taken well beyond the source's physical location and controlling authority, and in many cases by entities that are not directly subject to regulation under section 111 of the Clean Air Act. This structure raises significant legal and practical questions regarding the viability of the rule.

Regulating GHG emissions outside-the-fence line sets an impossible precedent for future regulation of GHGs for the manufacturing sector.

The EPA EGU guidelines set precedent for future regulation of manufacturing units. The proposed rule could require industrials to reduce GHG amounts that are above what could be reduced by our manufacturing facilities using customary technology, equipment and practices, and be required to accept responsibility to achieve higher GHG reductions by reducing emissions outside-our-fence line. For manufacturers, that means reducing the GHG emissions of our customers. Our customers are all over the world, not just in the U.S. And, it imposes costs that our global competitors do not have. If the EGU proposed rule is allowed to stand, an environmental group could sue EPA, forcing them to require the manufacturing sector to reduce GHG emissions outside-the-fence line. The proposed rule creates significant cost and regulatory uncertainty and will drive GHG and job leakage.

In June 2014, the EPA proposed new rules restricting emissions from municipal landfills, and the Agency's current budget request to Congress notes it will soon begin considering new GHG regulations on the following sectors: refineries, pulp and paper, iron and steel production, livestock operations, and cement manufacturing. The substance, process, and ultimate outcome of the initial regulations on power plants are certain to influence the regulations that follow.

Also, the EPA's Building Block 4 raises serious conflicts for the manufacturing sector. It appears that manufacturing facilities could be required to provide outside-the-fence line demand management GHG reductions to accommodate achievement of the GHG reductions for power generation. If they do, they would face even greater hardship reducing GHG emissions when the EPA promulgates a GHG reduction regulation on the manufacturing sector. In effect, the EPA would be requiring the manufacturing sector to reduce GHG emissions twice and with accompanying acceleration of costs.

Federal guidelines should give deference to the States.

Federal guidelines should recognize the States' role as the primary developers of GHG requirements. States should have wide latitude in how they choose to design their GHG programs pursuant to the Federal guidelines, including establishing compliance deadlines that reflect the economic and energy needs of the state, investments made to comply with other environmental regulations, the remaining useful life of the affected plants, and utilizing existing state mechanisms to achieve GHG reductions as

opposed to developing new regulatory regimes. Federal guidelines should allow for ample time for states to implement their programs. Equally, states must give regulated sources adequate time to comply with any requirements.

End-use energy efficiency.

End-use energy efficiency should be an option available to States as a means of compliance with section 111(d) requirements. EPA should remove all regulatory barriers to operate existing cogeneration facilities and install new units. Electricity consumers engaging in these activities in association with the 111(d) rules for power plants should be exempted from, or given credit towards, compliance with any subsequent GHG regulation for other sectors.

To encourage the implementation of additional cogeneration opportunities and other energy efficiency projects, the government should shorten the depreciation schedule in the tax code for these projects.

Fully account for GHG reductions already made.

Federal guidelines should account or credit sources for GHG reductions and efficiency improvements already made. Guidelines should not penalize “early-actors.” States should have full flexibility to account for such reductions in their regulatory requirements.

EPA’s use of the IWG Social Cost of Carbon is premature.

The Social Cost of Carbon estimate developed by an Interagency Working Group (IWG) should not be included in the cost-benefit analysis of any 111(d) rulemaking or guidance until it undergoes a more rigorous notice, review and comment process.

The UARG v. EPA Decision is instructive that EPA’s proposed rule is an overreach on its authority.

The Supreme Court’s June 23, 2014 decision in UARG v. EPA, a case challenging EPA’s re-interpretation of Clean Air Act statutory criteria for regulating emissions through the Title V permit program and the Prevention of Significant Deterioration (PSD) program, provides a strong caution against the kind of expansive interpretation of the Clean Air Act that pervades the Clean Power rule.

Justice Scalia delivered the opinion of the Court for a 5-4 majority. The Court clarified its previous ruling in Massachusetts v. EPA (2007) by noting the following:

1. EPA cannot use either the PSD or Title V permitting programs to require permits solely on the basis of GHG emissions. Slip op. at 10-16.
2. For large facilities that are already required to have permits because of conventional air emissions, EPA can require applicants to undertake a “best available control technology” (BACT) analysis if they emit GHGs above a minimal amount. Slip op. at 27-29.
3. For those facilities that need permits anyway due to emissions of conventional pollutants, the Court reminded EPA that actual requirements developed under the BACT analysis must take into account energy, economic and environmental considerations, and may not require redesign of a facility or even require reductions in demand for electricity from the grid. Slip op. at 26-27.

The majority opinion contains strong cautionary language applicable to EPA’s proposed rules for regulating greenhouse gases from existing facilities. The Court notes that an EPA interpretation of its authority under the Act would be unreasonable if:

“...it would bring about an enormous and transformative expansion in EPA’s regulatory authority without clear ‘congressional authorization. When an agency claims to discover in a long-extant statute an unheralded power to regulate ‘a significant portion of the American economy,’ Brown & Williamson, 529

U. S., at 159, we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast 'economic and political significance.' Id., at 160; See Also MCI Telecommunications Corp. v. American Telephone & Telegraph Co., 512 U.S. 218, 231 (1994); Industrial Union Dept., AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 645-646 (1980) (plurality opinion). Slip Op. at 19 (emphasis added.)

In the case of the Clean Power Plan, EPA seeks to do precisely what the Court rejects: to vastly expand its regulatory authority without Congressional approval, by discovering in “a long-extant statute an unheralded” power in Section 111(d) of the Act. The Court’s decision offers the following cautions to an expansive interpretation of the Act:

“ . . .in EPA’s assertion of that authority, we confront a singular situation: an agency laying claim to extravagant statutory power over the national economy while at the same time strenuously asserting that the authority claimed would render the statute “unrecognizable to the Congress that designed” it. “ Slip op. at 20.

“We are not willing to stand on the dock and wave goodbye as EPA embarks on this multiyear voyage of discovery. We reaffirm the core administrative-law principle that an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate.” Slip op at 23.

The Clean Power Plan’s natural gas redispatch, energy efficiency, and renewable energy “building blocks” are clear instances of over-reaching into areas traditionally reserved to the sovereign authority of the states. Congress itself has been unwilling to develop national renewable energy standards, recognizing the wide diversity of state laws in existence, and the disparate capabilities to deploy renewable resources among states.

Paul N. Cicio
President
July 30, 2014