



Industrial Energy Consumers of America *The Voice of the Industrial Energy Consumers*

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INDUSTRIAL COMPANY RECOMMENDATIONS

STATE IMPLEMENTATION PLAN (SIP) EPA CLEAN POWER PLAN

As the state considers its options in developing a State Implementation Plan (SIP) to comply with the EPA's Clean Power Plan (CPP), we strongly encourage the recommendations listed below. IECA companies are energy-intensive trade-exposed (EITE), which means that relatively small changes to the price of energy can have significant negative impacts to competitiveness. EITE companies are important stakeholders in this debate because a major portion of the costs will be passed onto us. EITE industries consume 73 percent of the entire manufacturing sector's use of electricity (26% of U.S.) and 75 percent of the natural gas (29% of U.S.).

Global competition forces U.S. manufacturing companies to drive down costs, and has resulted in a successful long-term track record of energy intensity and GHG emissions reductions. According to the Energy Information Administration (EIA), the industrial sector's GHG emissions are 22 percent below 1973 levels while the residential, transportation, commercial, and electric generating sector emissions are respectively 16, 54, 58 percent higher, respectively. The point is, we know a lot about reducing energy consumption and can contribute to this policy debate.

IECA membership represents a diverse set of industries including: chemical, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, building products, brewing, independent oil refining, and cement.

As you develop your SIP, it is important to understand that if a state's electric costs increase, manufacturing facilities with multiple national or global manufacturing sites will shift their production, jobs, and GHG emissions to locations outside your state into states with lower electric costs. As your state industrial load is reduced, all of the costs associated with the lost industrial load will be shifted to the remaining electric customers, driving up their electric costs. The point is that the industrial load is critically important in keeping total electric costs down for your state. Shifting industrial electrical load, and their GHG emissions to other states or to other countries, accomplishes nothing environmentally. This phenomenon is called "GHG leakage."

OUTLINE OF RECOMMENDATIONS

- a. We urge states to encourage the EPA to not require states to file a SIP until there is judicial review and regulatory clarity. With this in mind, states should urge EPA to provide more time for issuance of a SIP.**

- b. We urge states to encourage the EPA to not require states to file a SIP until there are federal model rules for states to consider adopting that would give emission offset credits for renewable energy and energy efficiency. These outside-the-fence credits must include credits for both greenhouse gases (e.g., CO₂) as well as criteria pollutants (e.g., PM, NO_x, SO₂), and must be able to be applied to inside-the-fence air permit requirements (including Part 70 Title V, NSR, and PSD).**
- c. Do not set GHG reduction targets from outside-the-fence line. Instead, set GHG reduction targets from inside-the-fence line, but support use of outside-the-fence line GHG reduction options to reduce compliance costs.**
- d. Outside-the-fence line energy efficiency (and other offsets) should be an option for compliance – but the focus should be on non-industrial sectors; industrial companies should have the ability to “opt-out” and maintain ownership of energy efficiency-based GHG emissions reductions at our facilities.**
- e. The SIP should make clear that the EPA’s CPP cannot regulate GHG emissions outside-the-fence line and set precedent for regulation of GHGs for the industrial sector in your state. Regulating outside-the-fence line industrial GHG emissions will result in industrial GHG leakage and shift economic growth, GHG emissions and jobs to other states or offshore, and accomplish nothing. Include statements that nothing in the SIP represents an endorsement of EPA’s estimates for the social cost of carbon.**
- f. The SIP should eliminate the interim 2020 target.**
- g. The SIP should include a reliability safety valve.**
- h. The SIP should include a cost safety valve.**
- i. The SIP should support ratable GHG emission rates. A mass-based GHG reduction limit will directly impact economic growth in a negative way.**
- j. The SIP should support credit for actions already taken, and use 2005 as the baseline.**
- k. Combined heat and power (CHP) and waste heat to power (WHP) facility GHG emissions should not be regulated under the CPP/SIP.**
- l. The SIP should specifically designate CHP/(WHP as an “eligible compliance option”; allow industrial CHP air emission permit budgets to apply against the EGU emission budget; provide CHP with full thermal credit; and increase line loss credit. The SIP should provide advantages to greater use of existing and new CHP and WHP generation from industrial and commercial facilities.**
- m. The SIP must use sound energy efficiency assumptions. The EPA energy efficiency assumptions for the CPP were flawed and result in high costs for consumers of electricity.**

- n. Before finalizing the SIP, complete a manufacturing GHG leakage study to understand the impact on the economy and the environment, including accounting for increased GHG emissions through greater imports of manufactured goods.**
- o. The SIP must ensure that imported product from offshore manufacturing competitors share the same economic pain from the CPP costs. This is especially important to energy-intensive trade-exposed (EITE) industries.**

RECOMMENDATIONS

- a. We urge states to encourage the EPA to not require states to file State Implementation Plans (SIP) until there is judicial review and regulatory clarity.**

It is well understood that the CPP will likely become the most litigated proposed rule in history. And, given that it is costly for states to develop SIPs, and that those costs will be passed unto us, the consumer, we urge the EPA to not require states to develop their SIP until there is regulatory clarity.

- b. We urge states to encourage the EPA to not require states to file a SIP until there are federal model rules for states to consider adopting that would give emission offset credits for renewable energy and energy efficiency. These outside-the-fence credits must include credits for both greenhouse gases (e.g., CO₂) as well as criteria pollutants (e.g., PM, NO_x, SO₂), and must be able to be applied to inside-the-fence air permit requirements (including Part 70 Title V, NSR, and PSD).**

Without a way of measurement and verification of energy efficiency and renewable energy credits, states cannot develop a SIP. There is no accepted federal protocol/rule for creditable energy efficiency credits and/or emission offsets attributable to energy efficiency or renewable energy. Both will require separate rulemaking plus state adoption of those rules.

i. Energy Efficiency

It is unclear if EPA has authority for developing this rule. If not, it must be conducted by FERC/DOE and developed as a model rule for consideration by each state, before states can develop their SIP.

Any emission offsets vary significantly depending on the marginal generating resource at the time of date/time of avoided energy consumption, as well as transmission and distribution losses associated with the marginal generating resource. EPA must develop a rule on legally crediting outside-the-fence emission offsets from energy efficiency for use in compliance with inside-the-fence air permit requirements (including Part 70 Title V, NSR, and PSD). The rule should allow regulated facilities to obtain credits for past outside-the-fence emission offsets (including not only CO₂, but NO_x, SO₂, VOCs, and CO as well) and, at minimum, must allow facilities to obtain credits for future outside-the-fence line offsets.

ii. Renewable Energy

There is no accepted federal protocol for legally creditable renewable energy credits and /or emission offsets attributable to renewable energy either. Likewise, a federal agency must develop a model rule that could be considered by states for adoption. Any emission offsets vary significantly depending on both the type of renewable resource, associated transmission/delivery, and marginal generating resource at the date/time of avoided energy consumption. EPA must develop a rule on legally crediting outside-the-fence emission offsets from renewable energy for use in compliance with inside-the-fence air permit requirements (including Part 70 Title V, NSR, and PSD). The rule should allow regulated facilities to obtain credits for past outside-the-fence emission offsets (including not only CO₂, but NO_x, SO₂, VOCs, and CO as well) and, at minimum, must allow facilities to obtain credits for future outside the fence line offsets.

c. Do not set GHG reduction targets from outside-the-fence line. Instead, set GHG reduction targets from inside-the-fence line, but support use of outside-the-fence line GHG reduction options to reduce compliance costs.

Electric generating units (EGUs) should be required to reduce GHG emissions only from inside-their-fence line, and the level of required reduction should reflect the limits of technology, equipment, fuel choices, and best practices in the sector being regulated. Manufacturing could be directly and severely impacted. For example, if the EPA were to go beyond-the-fence line, manufacturing companies could be facing state mandates to reduce electricity consumption by 1.5 percent or more per year, forcing a reduction in manufacturing output.

The electricity industry is complex, very integrated over multiple states, and tuned to dispatch electricity based upon “marginal costs.” Going outside-the-fence line forces an “environmental dispatch” based upon the marginal cost of carbon. Environmental dispatch results in windfall profits and higher costs for consumers. This is exactly what happened in Europe with the EU ETS and one important reason why manufacturing in the EU continues to struggle.¹

Marginal Cost of Carbon Example:

In a deregulated electricity market scenario, the cost of carbon will be marginal, meaning the least efficient unit will set the price and all other generators will benefit. Stated in reverse, all customers will overpay. Imagine a single hour where wind, solar, nuclear, hydro, and finally the marginal gas units set the price. Rather than just paying for the price of carbon on the gas unit’s emissions, the market’s marginal price mechanism will pay that price of carbon to “all” generators. This is a windfall profit for generators, especially to all non-fossil generators and a wealth transfer from consumers to electric generators that cannot be allowed to take place. Please review the testimony of Sonny Popowsky, the former Consumer Advocate of Pennsylvania, on the marginal cost of carbon in PJM.²

¹ http://www.cimeur.com/Cem_warehouse/1-ENERGY%20INTENSIVE%20INDUSTRIES-JANUARY%202004.PDF; “Emissions Trading and its Possible Impacts on Investment Decisions in the Power Sector,” International Energy Agency; and “CO₂ Allowance and Electricity Price Interaction – Impact on Industry’s Electricity Purchasing Strategies in Europe,” International Energy Agency.

² <http://www.oca.state.pa.us/Testimony/2009/S.%20Popowsky%20Testimony%20pdf%20version%20%2800109944%29.PDF>.

- d. Outside-the-fence line energy efficiency (and other offsets) should be an option for compliance – but the focus should be on non-industrial sectors; industrial companies should have the ability to “opt-out” and maintain ownership of energy efficiency-based GHG emissions reductions at our facilities.**

Industrial companies have the most successful energy efficiency record of any sector in the economy. The EIA, for example, has noted that the industrial sector has reduced its energy intensity by 41 percent since 1987. This has been achieved largely through energy efficiency improvements funded by industry. But other sectors of the economy have lagged far behind these industrial improvements. As we stated in our November 11, 2011 letter to President Obama, there are tens of millions of under-insulated homes that are poor energy performers that could benefit from cost-effective energy efficiency investments:

“Existing buildings consume 40 percent of our nation’s electricity, and thus offer a huge opportunity for energy savings and attendant reductions in indirect emissions. Simple low-cost options like insulation for attics and walls, insulated doors and windows are a common sense priority. These measures are literally of-the-shelf technologies made and installed by American workers and improve the health and comfort of Americans. Energy efficiency in this area, including the retrofitting of the tens of millions of under-insulated American homes, will reduce demand for power, decrease power plant emissions and help reduce electricity costs. And lower electricity demand will help delay expensive new conventional electric power generation facilities. These types of indirect energy efficiency measures should be part of the suite of options available for demonstrating reductions in greenhouse gas emissions.”³

Clearly, the residential sector is a more appropriate focus for energy efficiency measures designed to reduce GHG emissions at power plants.

If energy efficiency is utilized as an outside-the-fence line option, industrial companies should be allowed to participate, such that they could sell their own, energy efficiency-based GHG reductions to achieve a BSER emission reduction requirement. However, there are two critically important caveats. First, industrial companies must have the ability to “opt-out” of any utility-based programs. Second, we urge the EPA and states to recognize that when an industrial company sells its energy efficiency-based GHG reduction, it simultaneously reduces its own GHG baseline. If the company is ever regulated on GHG emissions, that early reduction must be credited to any GHG emission reduction required under any such future regulation.

Finally, any action taken by the industrial sector that can result in GHG reductions should be considered as an outside-the-fence line offset opportunity, not a mandate. Examples include renewable energy, use of recycled materials, and the customer use of their products that reduce GHG emissions.

- e. The SIP should make clear that the EPA’s CPP cannot regulate GHG emissions outside-the-fence line and set precedent, a mandate, for regulation of GHGs for the industrial sector in your state. Regulating outside-the-fence line industrial GHG emissions will result in**

³ http://www.ieca-us.com/wp-content/uploads/11.11.11_LettertoObamaJacksonreEnergyEfficiency.pdf.

industrial GHG leakage and shift economic growth, GHG emissions and jobs to other states or offshore, and accomplish nothing environmentally.

The CPP mandate of regulating GHG emissions outside-the-fence line sets a troubling, if not impossible precedent, for the manufacturing sector. The EPA has signaled that it intends to establish future standards for many industrial sectors. Under the tenants of the CPP, these sectors could be required to reduce GHG emissions beyond what are cost-effective, directly impacting jobs.

The reason is that the electric generation sector is significantly different than the industrial sector. The electric sector does not face international competition, all costs are almost automatically passed onto the consumer and some generators will actually benefit financially from the CPP because they will be able to secure a return on investment on all new capital spent on compliance. The electric sector is highly regulated such that there is a legal obligation to serve the public with either monopoly control or certainly, limited competition. Also, electric generators and their transmission systems are regularly used by state and federal policymakers to implement public policy. Examples include: delivering energy efficiency services (especially to low-income households) and increasing renewable energy use through mandates.

Setting a precedent that would require industrial companies to reduce GHG emissions outside-their-fence line, outside their control, could result in increased costs that could dramatically reduce competitiveness and result in GHG leakage to foreign countries. Industrial GHG leakage shifts jobs and the accompanying GHG emissions offshore, achieving nothing environmentally. Unlike electric generators, industrial companies face competition from companies across the country and around the world. U.S. borders are wide open to trade. Many countries subsidize their manufacturing companies which provide significant competitive advantages. Because of competition, American companies often cannot pass-on costs.

Industrial consumers are concerned that this outside-the-fence line precedent could be applied by EPA to the industrial sector as EPA expands its carbon management reach. EPA in the CPP actually regulates the demand or output of a coal-fired power plant. One can imagine a scenario where EPA attempts to regulate the output of a manufacturing plant to control emissions, which is a totally unacceptable outcome and demonstrates how damaging outside-the-fence line management of carbon is for any sector.

If EPA were to regulate the manufacturing sector in the same building block approach, it would result in not only reductions from the manufacturing sector, but also a building block that would require even further reductions from the electric generating sector, an absurd result. If more reductions were not possible in the electric generating sector, then manufacturing would be unreasonably burdened with trying to obtain even more reductions on top of what is required, under both the manufacturing rule and what was required under the EGU ESPS rule.

The industrial sector has been reducing its carbon footprint without any regulation of carbon by EPA by investing inside-their-fence line in new equipment, technology, best practices, fuel switching to less carbon intensive fuels, demand response, and shutting down less energy efficient manufacturing processes. As a result, industrial sector GHG emissions are 22 percent below 1973 levels, while all other sector emissions have significantly increased.

f. The SIP should eliminate the interim 2020 target.

According to the Congressional Research Service (CRS) report, “EPA’s Clean Power Plan Proposal: Are the Emission Rate Targets Front Loaded?” the median GHG emission reduction target in 2020 is 66 percent. Arizona has the highest reduction requirement at 90 percent.⁴ Reductions that severe in such a short time frame are not a “glide-path,” but rather a cliff. Reports by the NERC, MISO, PJM, and ERCOT all confirm that the interim 2020 target poses significant concerns to reliability and unnecessary high costs that we, the industrial consumers would preferentially pay. It is for this reason that IECA recommends that the EPA eliminate the interim target and only set a final target in 2030.

The NERC, MISO, PJM, and ERCOT reports make absolute common sense. Electric generation, transmission, and natural gas pipelines are capital-intensive and there are lengthy permitting, planning, and construction time frames necessary to get the facilities in place in a timely fashion. Giving states more time to comply would have the impact of lowering total costs of compliance while still achieving the GHG reductions.

g. The SIP should include a reliability safety valve.

Brownouts or blackouts are not acceptable to any electricity consumer. However, for manufacturing companies, they can result in unplanned facility shutdowns that can result in equipment damage, production losses, and outages extending well beyond the blackout periods. Costs can range for from tens of thousands of dollars a day for small companies to tens of millions of dollars a day for large companies.

For this reason, the SIP should include a reliability safety valve. The reliability safety valve would require the state to conduct an electric system reliability review annually. If the electric system review results in identification of unreasonable reliability risks, the SIP should be revised. States should encourage the EPA to give them time extensions for compliance if the SIP needs to be revised for purposes of reliability.

h. The SIP should include a cost safety valve.

As previously described above, if electricity and natural gas costs rise because of the SIP, industrial GHG leakage can shift GHG emissions to other states or foreign countries, resulting in a lose-lose for the environment and the economy. This unintended consequence must be avoided.

The SIP should include an “electric rate safety valve” not to exceed a two (2) percent increase in the total electric bill annually for any customer class. The SIP should require electric rate increases to be reviewed annually. Revenues collected in excess of the two percent annual increase should be subject to refund, pending the outcome of the annual review.

⁴ “EPA’s Clean Power Plan Proposal: Are the Emission Rate Targets Front-Loaded?” Congressional Research Service, November 3, 2014, <http://www.fas.org/sgp/crs/misc/IN10172.pdf>.

According to the EIA, from 1990 to 2013, industrial electricity prices increased 1.66 percent per year on average.

i. The SIP should support ratable GHG emission rates. A mass-based GHG reduction limit will directly impact economic growth in a negative way.

Ratable GHG emission rates allow for economic growth, while a mass-based emission reduction slows and then stops economic growth. Ratable GHG emission rates can usually be achieved by technology investments, best practices, and changes to capital stock over a long period of time. Ratable GHG reductions will also deliver low compliance costs. The CAA has a history of emphasizing technology and best practice solutions. We encourage the EPA and states to stay the course of supporting technology best practices as solutions. The EU ETS has adopted mass-based cap and trade policies and as a result there has been a significant shrinking of the manufacturing base and a loss of jobs.

j. The SIP should support credit for actions already taken, and use 2005 as the baseline.

2012 was remarkable in that natural gas prices were so low that fuel switching from coal to natural gas was at its maximum in years, prior and since. In choosing 2012, EPA is therefore setting the baseline at an extremely aggressive level. That being said, states need to remember that all costs of the CPP will be paid for by us, the consumer, not the electric generator. By choosing 2012, EPA is directly imposing higher costs on us, unfairly and unnecessarily, threatening jobs. For all of these reasons, states should urge EPA to use 2005 as the baseline.

Furthermore, electric generators should not be penalized for having taken early action to reduce GHG emissions. Any such action taken after 2005 should be credited into the baseline. And, all reductions taken and GHG emissions reductions achieved after the June 18, 2014 proposal date, including end-use energy efficiency enhancements, generation retirements, new capital investments in existing or new generation which includes nuclear, natural gas, and renewables, should be counted against future GHG reduction targets.

As for early crediting for industrial facilities, all actions that reduce GHG emissions should be credited, including energy efficiency, renewable energy and use of recycled materials, to list a few.

k. Combined heat and power (CHP) and waste heat to power (WHP) facility GHG emissions should not be regulated under the CPP/SIP.

The SIP should provide broad exemptions for all CHP/WHP units to encourage the efficiencies and environmental benefits of CHP/WHP systems. The basis for such an exemption is clear – the use of power generated by CHP/WHP units will always be more efficient than the standards EPA is setting for non-CHP/WHP facilities.

Federal statutes and rules have recognized the environmental benefits of CHP/WHP through regulatory exemptions since the 1990 amendments to the Clean Air Act. These existing exemptions have already significantly reduced CO₂ emissions over the past three decades. The GHG rules for new and existing sources should expand upon, and not contract, regulatory exemptions for CHP/WHP.

Any new rule that might result in the decommissioning of an existing CHP/WHP unit would increase CO₂ emissions, as facilities would replace power from CHP/WHP with power from the grid. EPA recognizes that the potential for increased renewable energy production is greatly limited by the problem of transmission congestion, and any reduction of existing CHP/WHP units would likely increase transmission congestion, as well as transmission losses.

Additional CHP/WHP units should be exempt from GHG rules for the following reasons:

- In view of the commercial and environmental importance of CHP/WHP units, and the practical difficulties and costs of retrofitting older units, existing CHP/WHP units should be categorically exempted from any new rule;
- EPA's proposal to add an additional regulatory exemption for CHP/WHP in the GHG rules for new EGUs based on actual use in addition to the exemption based on construction purpose is laudable, but does not go far enough. The case for exempting CHP/WHP generation from GHG rules is even stronger than in other regulatory contexts because CHP/WHP offers both significant reductions in CO₂ emissions and vitally important alleviation of transmission congestion problems;
- Existing CHP/WHP units that are not currently exempt from Subpart Da because they were constructed for the purpose of providing half, rather than one third, of their power to the grid may shutdown if they are now forced to comply with new GHG emissions limitations;
- Broadening regulatory exemptions for CHP/WHP in the GHG context may stimulate development of additional CHP/WHP units that would result in decreased GHG emissions and less transmission congestion; and
- The negative effects from GHGs are global, not local. As was acknowledged in the recent debate over potential cap and trade legislation, GHG regulation carries a risk of "leakage" of jobs and emissions. Overly stringent or costly GHG rules could hasten the export of American industrial capacity beyond the reach of American regulation to locations with relatively higher GHG emissions. An even broader exemption for CHP/WHP in the GHG rules would help prevent the export of jobs and likely a net increase of GHG emissions.

Exemptions for CHP/WHP in the GHG rules and otherwise should be broad and nondiscriminatory:

- Existing CHP/WHP units are as diverse as U.S. industry. Regulatory exemptions for CHP/WHP that discriminate based on technology, efficiency, or fuel source will likely lead to the shutdown of existing CHP/WHP units and risk increasing GHG emissions, transmission congestion, and transmission loss;

- Exemptions for existing CHP/WHP units should be broad and nondiscriminatory. The exemptions should be designed to cover all existing CHP/WHP units and should not discriminate on the basis of efficiency, technology, or fuel source;
 - The breadth of regulatory exemptions for CHP/WHP in the GHG rules is particularly important because the shutdown of even the least efficient existing CHP/WHP units will increase GHG emissions, transmission congestion, and transmission loss. States should accordingly err on the side of breadth;
 - The use of CHP/WHP is beneficial no matter what fuel is used to create heat because fuel selection is dominated by other regulatory and economic considerations. Because exemptions for CHP/WHP in the GHG rules will have no impact on fuel selection, fuel source discrimination is unnecessary;
 - Traditionally, CHP/WHP exemptions have been broad, nondiscriminatory, and successful in achieving emissions reductions. For example, the acid rain provisions in the 1990 Clean Air Act amendments included independent exemptions based on construction purpose and actual use. Under this exemption, a unit is exempt either if the unit is constructed with the purpose of providing no more than one-third of its potential electric output capacity to the grid or if the unit actually supplies no more than one-third of its potential electric output capacity to the grid. This broad and non-discriminatory statutory exemption is responsible for significant emissions reductions, including GHGs, and also decreased transmission congestion and transmission losses; and
 - It is important to note that EPA erred in failing to maintain broad and nondiscriminatory exemptions when it issued the Clean Air Interstate Rule and the Clean Air Transport Rule by adopting the narrow Public Utility Regulatory Policies Act definition of cogeneration that discriminated based on efficiency. At the time, EPA believed that most existing cogeneration units would be covered by this definition. See 70 Fed. (“... will meet the proposed efficiency standard.”) But as it turned out, many older units fell outside of the efficiency based definition even though these older units offered significant environmental benefits. EPA’s use of a narrow and discriminatory definition in the Clean Air Interstate Rule and the Clean Air Transport Rule was counterproductive and may have decreased CHP/WHR utilization and thereby increased emissions, transmission congestion, and transmission loss. States and EPA should not repeat this mistake in the GHG rules.
- I. The SIP should specifically designate CHP/WHP as an “eligible compliance option”; allow industrial CHP air emission permit budgets to apply against the EGU emission budget; provide CHP with full thermal credit; and increase line loss credit. The SIP should provide advantages to greater use of existing and new CHP and WHP generation from industrial and commercial facilities.**

Industrial companies are exclusively from the industrial process industries, which mean, we use large amounts of steam and electricity. We are “steam hosts,” the companies who would actually build and use the CHP/WHP units. While installed CHP capacity represents about 82 GWs, the actual output is underutilized. And since 2005, the rate of building new capacity has

been relatively low. The primary reason for this is regulations and costs that burden industrial CHP/WHP projects.

Use of CHP technology to generate power is significantly superior to even natural gas combined cycle power plants. Harnessing the use of waste heat from manufacturing facilities, where it is economically viable, would generate power with less GHG emissions than conventional EGUs. WHP facilities can produce power without any GHG emissions. And such CHP/WHP facilities would be distributed energy facilities, which would help support grid reliability.

We urge the SIP to support the following:

- Provide clear guidance that compliance should not impose regulations on CHP/WHP facilities.
- Specifically designate CHP and WHP as an official compliance option/strategy. While CHP is mentioned in the RPA proposed rule as an example of demand-side energy efficiency, WHP is not mentioned at all. We urge explicit recognition of both CHP/WHP.
- Issue a simple policy guidance memorandum that allows new industrial CHP facilities to perform air quality impact analyses that takes credit for regional air quality improvements due to offsetting emissions from EGUs. Specifically, the SIP should allow the CHP units to reduce its modeled emission rates by the relative amount of avoided emissions when compared to electric grid emissions within the nearest sub-region of EPA's E-GRID database.
- The ability to obtain air permits is a major determinant as to whether industrial CHP units are built. Industrial companies' primary business is making manufacturing products, not electricity. As such, and given that air permits are getting harder to get, building a CHP unit and any resulting increase in emissions (albeit less emission per MWH than regional EGUs) can be a significant challenge to a manufacturing company.
- Provide a full thermal credit (100%) for CHP units. The EPA proposed rule would credit all of the electricity produced from a CHP unit, but only 75 percent of the useful thermal output. The EPA has already set a precedent in support of 100 percent through the NSPS for Stationary Combustion Turbines⁵ and several states have adopted it as well.⁶ The EPA proposed rule limits eligibility to CHP systems where 20 percent of the total gross useful energy output consists of useful thermal output, which would eliminate the potential for "sham" CHP projects. Providing 100 percent of the thermal credit will help the economic viability of the CHP unit be financed and constructed.
- Increase line loss credit from 5 percent to 6 percent. The EIA says that the national average transmission and distribution line loss is six percent.⁷ Secondly, it is very important that the SIP bring clarity to the applicability of the line loss credit. It appears that the EPA credit is only applicable to CHP systems that are directly affected by the CPP. We urge the SIP to

⁵ <http://tceq.state.tx.us/permitting/air/rules/federal/60/60hmpg.html>; and <http://www.epa.gov/airtoxics/nsps/turbine/turbnsps.html>.

⁶ <http://www.epa.gov/chp/documents/accounting.pdf>.

⁷ <http://www.eia.gov/tools/faqs/faq.cfm?id=105&t=3>.

emphasize the benefits of distributed energy in reducing transmission and distribution costs and increasing reliability to states and extend the 6 percent credit to both affected units and non-affected units.

- Selling industrial CHP/WHP carbon credits, should apply against potential future industrial GHG reduction obligations. The SIP should recognize that when an industrial company sells its energy efficiency-based GHG reduction, it simultaneously reduces its own GHG baseline. If the company is ever regulated on GHG emissions, that early reduction must be credited to any GHG emission reduction required under any such future regulation.
- Lastly, we urge that when comparing CHP emissions to affected EGUs, that you not compare it to a regional rate, but instead, compare it to a more realistic estimate of the GHG reduction in dispatch of base load/intermediate/peaking (coal and gas), plus credit for avoided transmission and distribution losses.

m. The SIP must use sound energy efficiency assumptions. The EPA energy efficiency assumptions for the CPP were flawed and result in high costs for consumers of electricity.

The EPA assumed that without the CPP, incremental energy efficiency does not occur. This is an incorrect assumption and has led to a much higher target for energy efficiency by state. The EPA assumption grossly overstates the benefits of the CPP. According to the EIA, for example, the industrial sector has reduced its energy intensity by 41 percent since 1987, and continues to invest in energy efficiency every year. This long-term performance has been achieved largely through voluntary energy efficiency improvements. The industrial sector has demonstrated that it does not need a regulatory framework to improve energy efficiency.

Industrial companies have firsthand experience nationwide on electric utility delivered energy efficiency programs. A better way forward is to drive energy efficiency through the residential sector and through improved appliance standards, heating and cooling systems, and better building codes.

The manufacturing sector believes that EPA's energy efficiency assumptions are flawed and the cost estimate is too low. For example, a recent study by Policy Navigation Group examined the cost-effectiveness of federal energy efficiency investments by examining over 9,000 energy conservation measures at 760 federal facilities. The average cost-effectiveness of projects that measured electricity savings is \$0.83 per kWh avoided. Verified electrical energy savings at federal facilities is ten times more expensive. Even the likely optimistic estimates at federal facilities have a medium cost of 30 percent higher than EPA's claimed value.⁸

n. Before finalizing the SIP, complete a manufacturing GHG leakage study to understand the impact on the economy and the environment, including accounting for increased GHG emissions through greater imports of manufactured goods.

⁸ "The Cost-Effectiveness of Federal Energy Efficiency Investments," Policy Navigation Group, http://www.ieca-us.com/wp-content/uploads/The-Cost-Effectiveness-of-Federal-Energy-Efficiency-Investments_Policy-Navigation-Group_11.25.14.pdf.

When EPA did its economic analysis of the CPP, it failed to account for industrial GHG leakage. By not including industrial GHG leakage, EPA has overestimated benefits and underestimated costs. It behooves states to complete a study to understand the impact of the CPP on industrial GHG leakage.

Historically, there is an absolute direct relationship between U.S. energy costs and manufacturing employment, and the manufacturing trade deficit. As energy costs rise, manufacturing jobs and investment decrease, and imports increase. The reverse is also true, as U.S. energy costs decline, manufacturing jobs and investment increase, and exports increase.

Evaluating industrial GHG leakage is important. To illustrate, 75 percent of the U.S. trade deficit is with one country, China.⁹ According to the International Energy Agency (IEA) and the World Bank,¹⁰ in 2011, China's total manufactured goods value-added were over \$2.3 trillion as compared to \$1.8 trillion for the U.S. However, China's total manufacturing industries' CO2 emissions were 2.5 trillion tonnes while the U.S. manufacturing sector was only 598 billion tonnes. This means that China produced 29 percent more manufacturing goods, but emitted 317 percent more CO2 than U.S. manufacturing. This means that U.S. manufacturing produces three times the amount of goods for every one tonne of carbon, as compared to China.

Industrial GHG leakage is an accepted climate policy challenge. For example, the Waxman-Markey legislation, the "American Clean Energy and Security Act," included specific provisions to reduce the impact of industrial GHG leakage. In December 2, 2009, several Senators released the report, "The Effects of H.R. 2454 on International Competitiveness and Emission Leakage in Energy-Intensive Trade-Exposed Industries."¹¹ And both the EU ETS and the California AB32 carbon cap and trade legislation/regulation acknowledge GHG leakage as a real problem. Despite this, the CPP does not contain provisions to avoid industrial GHG leakage, and it needs to.

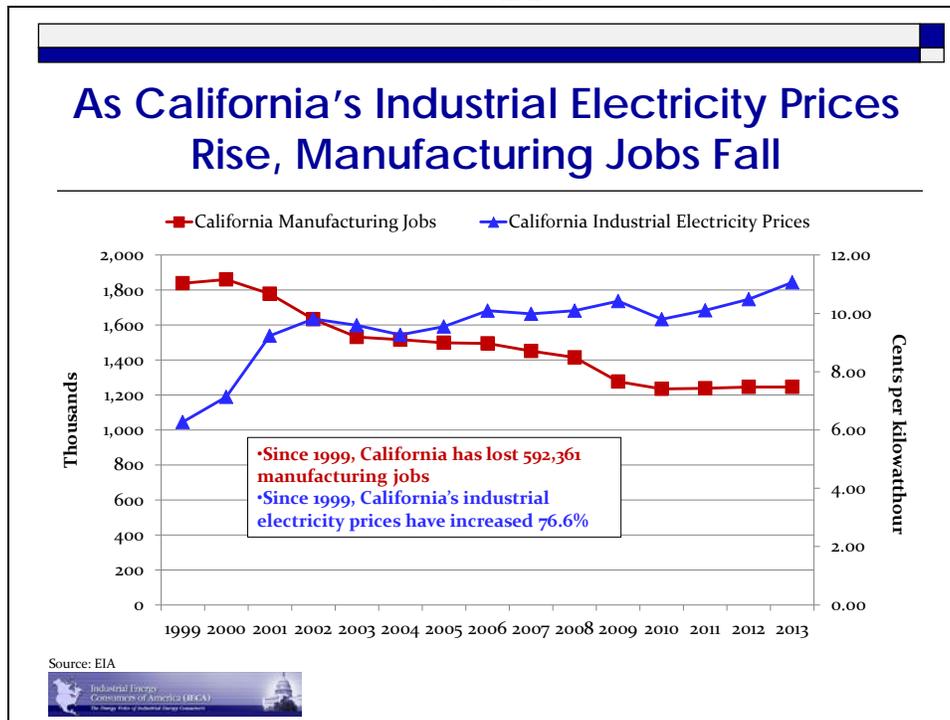
California is a good example. California's electricity prices in 2013 were the fifth highest in the lower 48 states, and the state has also implemented carbon cap and trade. Figure 1 illustrates that California's electricity prices rose over 76 percent since 1999, and they have experienced a corresponding staggering drop in manufacturing employment of 592,361 high paying jobs. It is important to note that while many states have increased manufacturing jobs since 2010, California has not. Manufacturing companies specifically avoid investing in California because of high electricity costs that are only going much higher because of the carbon cap and trade. Cap and trade adds significant regulatory and cost uncertainty. The net effect is that imports of manufactured products into California have substantially increased. California has forfeited manufacturing jobs for having implemented cap and trade.

⁹ U.S. Bureau of Labor Statistics.

¹⁰ International Energy Agency, The World Bank, <http://data.worldbank.org/indicator/NV.IND.MANF.CD>.

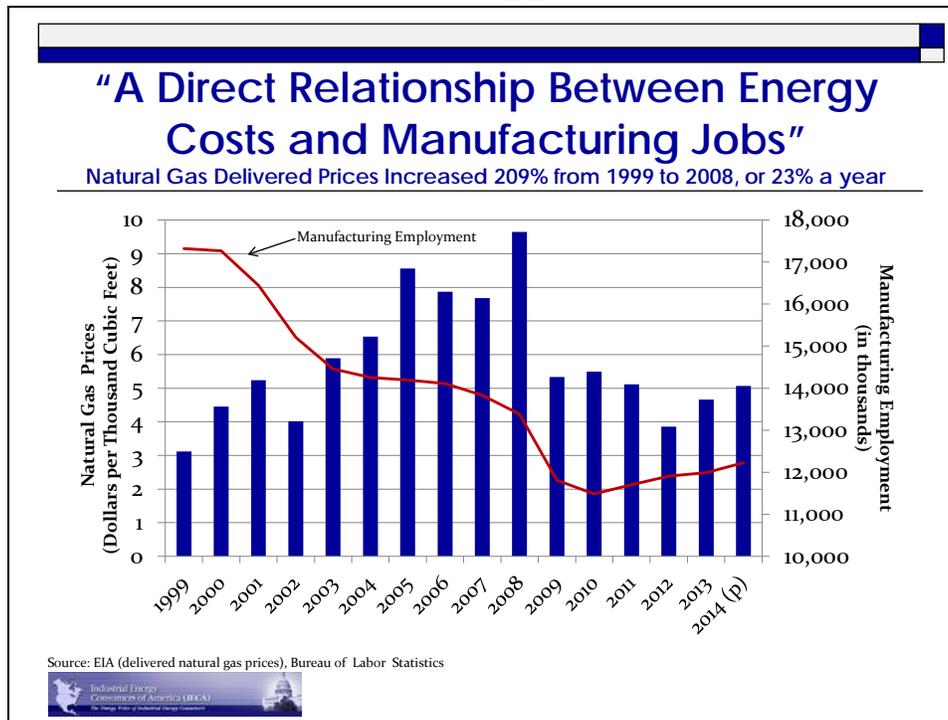
¹¹ http://www.epa.gov/climatechange/Downloads/EPAactivities/InteragencyReport_Competitiveness-EmissionLeakage.pdf.

FIGURE 1



Another instructive example is the history of U.S. natural gas prices and their impact on manufacturing jobs. In this case, natural gas is a surrogate for electricity prices. From 1999 to 2008, natural gas prices rose 209 percent and national manufacturing employment fell by almost 5.0 million direct jobs, and over 50,000 manufacturing facilities were closed, according to the Bureau of Labor Statistics (BLS). And now, largely because of lower natural gas costs, the BLS data indicates that U.S. manufacturing jobs have increased 738,249 from 2010 to June 2014.

FIGURE 2



- o. The SIP must ensure that imported product from offshore manufacturing competitors share the same economic pain from the CPP costs. This is especially important to energy-intensive trade-exposed (EITE) industries.**

Manufacturing consumes 26 percent of all U.S. electricity and 29 percent of all natural gas, both of which are greatly impacted by the CPP, resulting in higher prices. Energy-intensive trade-exposed industries (EITEs) nationwide are even more impacted because they consume 73 percent of all manufacturing sector electricity and 75 percent of the natural gas. Imposing costs on domestic manufacturers without imposing at least the same costs on imported manufacturing goods, reduces competitiveness, jobs, and will increase imports, further accelerating the trade deficit and national economic decline.

The SIP must inflict, at least the same economic pain on imported manufacturing products. The SIP must impose a carbon fee that reflects the compliance cost of the CPP on the product that is imported into the state.

Figure 3 illustrates the importance of sound climate policy. If the U.S. can keep energy costs low, reduce GHG emissions cost-effectively, there is a great opportunity to displace existing imported products, creating a significant number of domestic manufacturing jobs. To do so, will require the U.S. manufacturing sector to increase the amount of energy it consumes, while reducing GHG intensity long-term. Importantly, this cannot be achieved if the EPA imposes a cap on GHG emissions.

Please note that 75 percent of the trade deficit is with China, a country very dependent upon coal and whose manufacturing processes, at large, are significantly less energy efficient than comparable facilities in the U.S.

FIGURE 3



The Industrial Energy Consumers of America is a nonpartisan association of leading manufacturing companies with \$1.0 trillion in annual sales, over 2,900 facilities nationwide, and with more than 1.4 million employees worldwide. It is an organization created to promote the interests of manufacturing companies through advocacy and collaboration for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA membership represents a diverse set of industries including: chemical, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, building products, brewing, independent oil refining, and cement.