June 9, 2014

General Counsel Beth Krogel Roads
Re: IURC's EE/DSM Recommendations
Indiana Utility Regulatory Commission
101 West Washington Street, Ste. 1500 E
Indianapolis, Indiana 46204

Re: GAO 2014-1

Ms. Roads:

I am writing on behalf of The Alliance for Industrial Efficiency, a diverse coalition including representatives from the business, contractor, labor, and environmental communities. We are committed to enhancing manufacturing competitiveness and improving electric reliability through the greater use of combined heat and power (CHP) and waste heat to power (WHP). Recent efforts to eliminate Indiana's energy-efficiency goals (through SB 340) will limit use of these proven technologies in Indiana, and with this in mind, we present the following recommendations for resurrecting and improving Indiana's demand-side management (DSM) and energy-efficiency policy:

- Refrain from allowing industrial customers to opt-out;
- Authorize large customers to take part in self-direct programs and institute an adequate evaluation, measurement and verification (EM&V) and energy-savings requirement; and
- Adopt policies that facilitate deployment of CHP and WHP in the state, including expanding net metering to include CHP, adopting a streamlined interconnection process, and eliminating any discriminatory standby rates.

The Alliance appreciates the opportunity to inform the IURC's consideration of these issues, which are particularly timely as Indiana begins to consider the Environmental Protection Agency's (EPA) greenhouse gas standards for existing power plants (111(d)). As EPA explained in the proposed rule, energy efficiency can serve as one of four essential building blocks to help states achieve their reduction targets. Energy efficiency – including CHP and WHP - is the cheapest, cleanest, and most readily available energy resource. The Alliance commends the IURC for examining ways to increase energy-efficiency investments in Indiana and urges the Commission to support policies that specifically encourage greater use of CHP and WHP. Moreover, these policies should be incorporated into Indiana's 111(d) state plan, which it will need to submit to EPA by June 2016.

Benefits of CHP and WHP

In today's global economy, Indiana manufacturing must be as productive and efficient as possible. Supporting clean-energy technologies like combined heat and power (CHP) and waste to heat power (WHP) would spur investments in the food manufacturing, paper, chemical, and other energy-intensive industries. CHP produces both heat and power from a single fuel source. WHP captures otherwise wasted heat to generate additional electricity. Applying WHP technology in the natural gas pipeline transmission and distribution sectors and in the gas processing industries would create additional value and improve operating efficiencies for those systems. In these ways, CHP and WHP dramatically lower energy use, saving energy and money for manufacturers, and keeping the lights on during extreme weather events.

Greater deployment of CHP and WHP will create and maintain jobs within the industrial sector by making Indiana industry more competitive. It will also support jobs in the manufacture, installation, and operation of CHP and WHP equipment. An August 2012 Executive Order from the White House (E.O. 13624) set a goal of increasing CHP deployment by 50% (40 gigawatts) by 2020. According to the Department of Energy, achieving this goal could support $40- to $80- billion in new manufacturing investment and save one-quadrillion BTUs of energy.[1] Because many CHP projects do not depend on the grid to operate, they can increase the reliability of the state's electric grid, ensuring that manufacturers, universities and hospitals can "keep the lights on" during extreme weather events, as was demonstrated when Superstorm Sandy hit the Northeast in late 2012.[2] Additionally, because CHP and WHP projects require less fuel than conventional power generation, they dramatically lower emissions. In fact, EPA reports that CHP can produce one-half the carbon emissions of the separate generation of heat and power to deliver the same amount of useful energy.[3] These benefits are particularly meaningful to a state such as Indiana, whose large manufacturing base can benefit from these proven technologies.

Dating back to Thomas Edison, whose early power plants sold both electricity and steam to nearby buildings, today there are more than 4,000 CHP and WHP installations supplying 8% of U.S. electric capacity.[4] CHP capacity outside the United States is even greater, supplying 13% of the electricity in Germany, 31% in Russia, and over one-half (53%) of the electricity in Denmark.[5]

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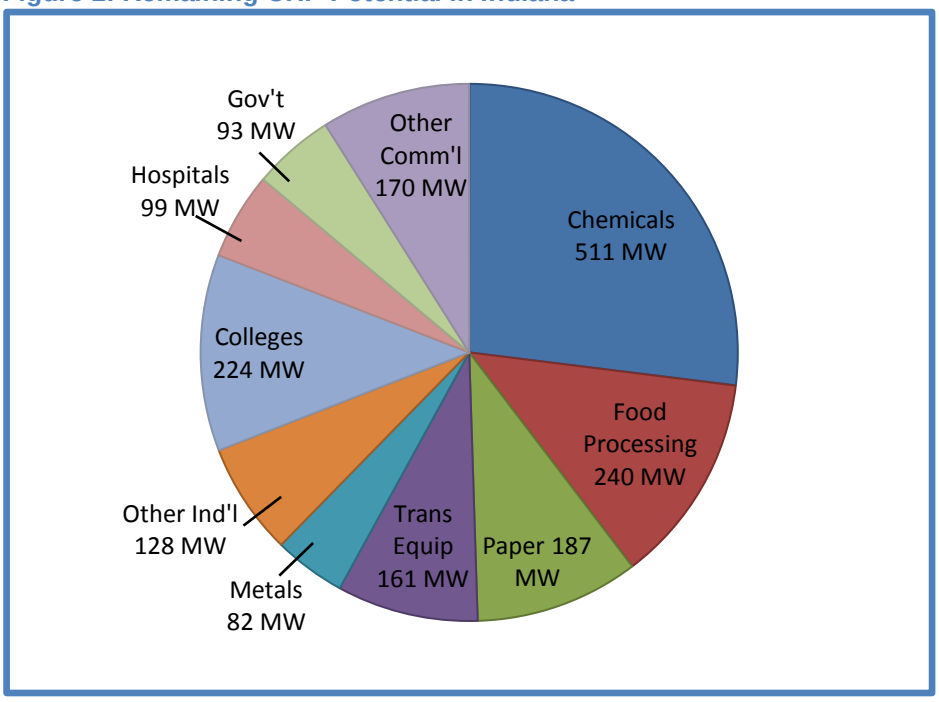
[1] DOE and EPA, Aug. 2012, "Combined Heat and Power: A Clean Energy Solution," at 3-4 (http://www.epa.gov/chp/documents/clean_energy_solution.pdf).
[2] Hurricane Sandy Rebuilding Task Force, Aug. 2013, "Hurricane Sandy Rebuilding Strategy" (http://portal.hud.gov/hudportal/documents/huddoc?id=HSRebuildingStrategy.pdf).
[3] U.S. EPA, Combined Heat and Power Partnership, *Environmental Benefits* (graphic) (http://www.epa.gov/chp/basic/environmental.html) (visited Sept. 27, 2013).
[4] CHP Installation Database, ICF International (http://www.eea-inc.com/chpdata/)
[5] DOE, Oak Ridge National Laboratory, 2008, "Combined Heat and Power: Effective Energy Solutions for a Sustainable Future", at 22 (http://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_report_12-08.pdf) and International Energy Agency, 2009, "Cogeneration and District Energy: Sustainable Energy Technologies for Today … and Tomorrow," at 11 (http://www.iea.org/files/CHPbrochure09.pdf).

In Indiana, there are currently 38 CHP projects, producing nearly 2,300 Megawatts of clean and efficient power.[6] In 2012, these projects produced roughly 3% of the electricity in the state.[7] The potential is far greater. In fact, according to recent internal ICF estimates, nearly 2,000 additional megawatts could be produced at the states' manufacturing facilities, wastewater treatment plants, hospitals, and universities.[8] (Figure 1) Such projects would generate enough electricity to power nearly 1.5-million homes and create more than 11,000 jobs.[9] This potential should be reflected in Indiana's energy-efficiency goal.

Figure 1: Remaining CHP Potential in Indiana[10]



Indiana businesses are already experiencing the benefits of CHP. For instance, the ArcelorMittal steel manufacturing plant in East Chicago, Indiana will reduce its energy costs by nearly $20 million a year with the installation of a 38 MW CHP system in 2012. These savings will allow the company to remain competitive in the global steel marketplace, helping it employ 5,000 workers at the plant.

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[6] DOE-ICF CHP Installation Database, "Combined Heat and Power Units located in Indiana," (http://www.eea-inc.com/chpdata/States/IN.html).
[7] U.S. Energy Information Administration, 2012, "Net Generation by State by Type of Producer by Energy Source" (http://www.eia.gov/electricity/data/state/).
[8] ICF International Internal Estimates, 2014 (estimates limited to units larger than 1 MW); *see also* ICF-WADE-USCHPA, Oct. 2010, "Effect of a 30 Percent Investment Tax Credit on the Economic Market Potential for Combined Heat and Power," Table 3 and Table 4, on p. 11 and p. 12 respectively (reporting more than 3,000 MW of remaining CHP potential in the commercial and industrial sector; larger projections because report includes units smaller than 1 MW) (http://www.uschpa.org/files/public/USCHPA%20WADE_ITC_Report_FINAL%20v4.pdf).
[9] Assuming a typical household uses 11,280 kWh/year / 8,760 hours/year = 1.29 kW/ hhld. (2011, http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3).
[10] ICF International Internal Estimates, 2014.

Installation of the system supported more than 360 jobs, including 200 local construction jobs.[11] In West Lafayette, Purdue University is replacing one of its inefficient coal boilers with a 6.5-MW natural-gas fired CHP system.[12] Engineers project that the new unit will save the University nearly $16-million over the 25-year life of the boiler, providing a 23% rate of return.[13] There are many additional opportunities at smaller facilities in the state, which may not have the internal capital or lines of credit to support significant investments.

The General Assembly's recent passage of SB 340 removed an important incentive to jumpstart additional investments in CHP. As the IURC examines DSM and EE policies and programs to provide a framework for potential legislation in the 2015 session of the Indiana General Assembly, we urge it to support policies that will increase use of these technologies.

Industry Opt-Outs and Self-Direct Option

We understand that Governor Pence is seeking guidance on policies that "allow for an opt-out whereby large electricity consumers can decide not to participate in a DSM program." We believe that such policies represent a troubling step in the wrong direction. Industrial opt-outs are inherently unfair, as they provide flexibility to large electricity consumers at the expense of a large portion of the rate base. We believe a self-direct option can provide the same benefits without compromising the state's energy-efficiency goals.

Energy efficiency is the cheapest, most abundant source of new power. Recent analysis confirms that energy-efficiency programs save energy at about 2 to 5 cents per kilowatt hour, while generating the same amount of electricity from burning coal or natural gas can cost two to three times that amount (i.e., 6 to 14 cents per kWh).[14] (Figure 2) What's more, the industrial sector represents the least expensive source of energy efficiency.[15] Allowing industrial customers to opt out of energy-efficiency programs will increase the cost of electricity for other users. And because industrial customers account for more than one-third of total electricity use in Indiana,[16] excluding them from the

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[11] U.S. Department of Energy, Energy Department, Dec. 2012, "ArcelorMittal Partnership Boosts Efficiency of Major Steel Manufacturing Plant" (http://energy.gov/articles/energy-department-arcelormittal-partnership-boosts-efficiency-major-steel-manufacturing).

[12] Stanley Consultants, Purdue University CHP Plant and Boiler Conversion (http://www.stanleyconsultants.com/markets-we-serve/energy/facilities/combined-heat-and-powercogeneration/purdue-university-chp-plant-and-boiler-conversion/).

[13] Burns & McDonnell, "Comprehensive Energy Master Plan," Prepared for Purdue University, October 2011.

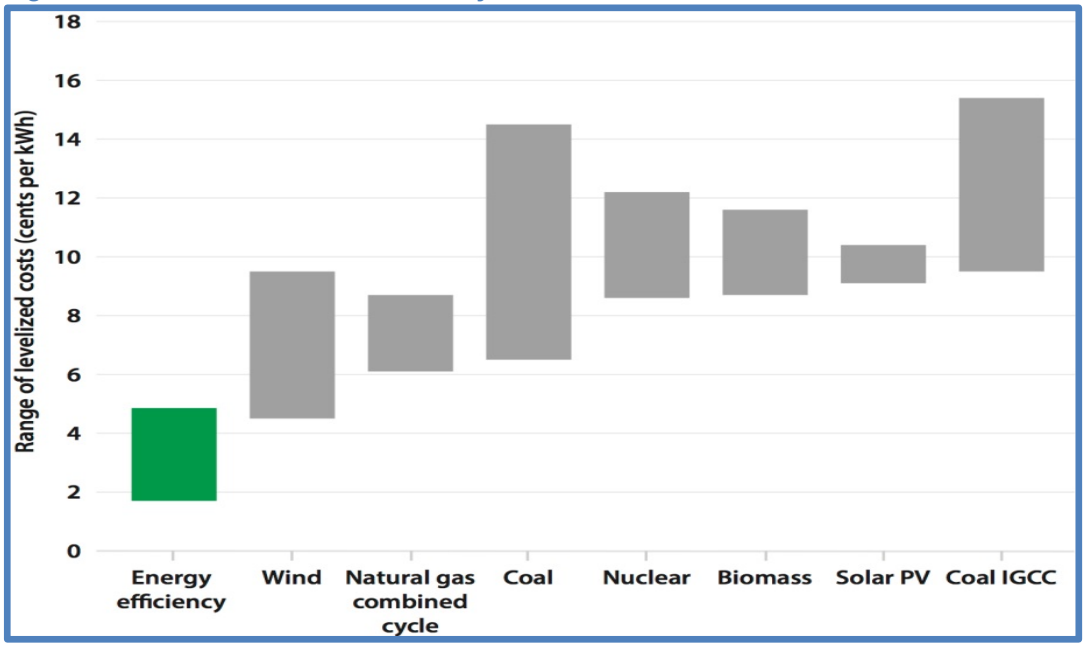
[14] Maggie Molina, American Council for an Energy-Efficient Economy, March 25, 2014, "The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs" (http://aceee.org/research-report/u1402).

[15] Nate Aden, Anna Chittum, & James Bradbury, 2014, "Anchoring costs: the role of industry programs in U.S. ratepayer-funded energy efficiency," ECEEE Industrial Summer Study Proceedings, at 149-160 (based on EIA 2012 DSM, energy efficiency and load management programs data for more than 1,000 utilities www.eia.gov/electricity/data/eia861).

[16] U.S. Energy Information Administration, March 2014, "Table 5.4.A. Retail Sales of Electricity to Ultimate Customers by End-Use Sector" (reported industrial sales represent 44% of total sales in March 2014) (http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_4_a).

policy would forfeit substantial low-cost energy savings in the state. Indeed, "maximizing industrial energy efficiency (IEE) typically brings down overall system costs over the medium term, which is in the interest of all utility customers."[17]

Figure 2: Levelized Costs of Electricity[18]



Because the industrial sector has access to significant, low-cost energy-efficiency opportunities, the IURC and General Assembly should support policies that encourage industrial users to make these investments. Industrial opt-outs ignore this potential. Moreover, opt-outs prevent industrial users from experiencing the numerous benefits of energy efficiency. As noted above, CHP and WHP help manufacturers lower their electricity costs, enhance electric reliability, and reduce emissions.

We recognize the state's interest in providing flexibility to large electricity users. Rather than an industrial opt-out, we propose that the IURC support a strong and effective self-direct option to help realize the state's energy-efficiency goals. Far superior to an industrial opt-out, this mechanism allows for large customers to independently implement energy-efficiency programs instead of allowing the utility to determine how resources are used. This preserves the user's autonomy while still ensuring that adequate resources are directed toward energy efficiency. Successful programs identify a qualifying set of large customers, adequately incentivize programs through a rider rebate, strictly monitor the cost-effectiveness and energy savings of their investment, and include reporting mechanisms to ensure that self-direct customers are spending as much money on energy-efficiency investments as they would have otherwise spent on energy-efficiency charges.[19] An Indiana self-

[17] SEEAction, March 2014, "Industrial Energy Efficiency: Designing Effective State Programs for the Industrial Sector," at 41 (http://www1.eere.energy.gov/seeaction/pdfs/industrial_energy_efficiency.pdf).
[18] Maggie Molina, *supra* note 14, at vi (Figure S2).
[19] SEEAction 2014, *supra* note 17, at 41-48 (elaborating best practices for self-direct programs).

direct program should incorporate these design features to ensure that all ratepayers are using electricity efficiently.

There are several examples of successful self-direct programs in the Midwest. In Minnesota, Xcel energy customers with more than 2 MW aggregate peak demand at all meters, annual demand of 10 gigawatt hours (GWh), and/or annual gas demand of 100,000 decatherms (Dth) are eligible to participate in the program with utility approval. Participating firms may then design and engineer their own programs and conduct their own evaluation, measurement and verification. Though participants must continue to pay an energy-efficiency rider, they will receive rebates reflecting their energy savings. The program is notable for its well-organized structure and robust payback.[20] In Michigan, customers with at least 1 MW of peak demand in the preceding year may choose to participate in the state's self-direct program (PA 295). Rather than simply asking participants to spend a set amount of money on energy efficiency, PA 295 requires participants to establish energy-savings goals determined by a professional energy service company. Participants are required to develop plans with annual energy savings targets based on the prior year's energy use, taking into account changes in business activity, resources needed to run pollution-control equipment, and weather. Customers who fail to achieve their targets must reimburse the utility for the shortfall.[21]

Removing Financial Barriers.

High installation costs present another significant barrier to CHP and WHP deployment. A 2011 report by the American Council for an Energy-Efficient Economy (ACEEE) dubbed these upfront costs "staggering."[22] A 2012 analysis by ICF Consulting reports installed cost of a CHP system ranging from $1,170 to $2,450 per kilowatt, depending on system size.[23] Long-term energy savings, however, eventually allow users to recoup their investment and offer significant economic benefits. Favorable financial policies can help reduce upfront costs, shrink the payback period, and encourage manufacturers in the state to develop CHP and WHP projects. Though the City of Bloomington offers a production incentive to support CHP,[24] the IURC should work with the General Assembly to explore other financial incentives (e.g., tax credits, tax exemptions, and loan programs) to promote greater CHP development.

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[20] Xcel Energy, Minnesota Self-Direct Efficiency (http://bit.ly/1kKkbh5) (visited June 9, 2014).
[21] SEEAction, March 2013, "Guide to the Successful Implementation of State Combined Heat and Power Policies," at 46 (https://www1.eere.energy.gov/seeaction/pdfs/see_action_chp_policies_guide.pdf).
[22] American Council for an Energy-Efficient Economy, September 2011, "Challenges Facing Combined Heat and Power Today: A State-by-State Assessment," at iv and 6 (http://aceee.org/node/3078?id=3933).
[23] ICF International, February 2012, "Combined Heat and Power: Policy Analysis and 2011-2030 Market Assessment," Table 40 (http://www.energy.ca.gov/2012publications/CEC-200-2012-002/CEC-200-2012-002.pdf).
[24] Great Plains Institute and American Council for an Energy-Efficient Economy, 2013, "Indiana Combined Heat and Power Factsheet" (http://www.betterenergy.org/sites/www.betterenergy.org/files/Indiana.pdf); note that we understand that CHP is *not* eligible for NIPSCO's business energy-efficiency rebate program. Personal communication with Alison M. Becker, Northern Indiana Public Service Company, June 6, 2014.

The IURC need look no further than Illinois for an emerging example of such a policy. The Illinois Commerce Commission recently approved a pilot program allowing the state's Department of Commerce and Economic Opportunity to provide a set of incentives during various phases of CHP facility construction and operation. The incentive structure is performance based and tiered to encourage the design and operation of the most efficient CHP systems. The program provides a maximum incentive for any one application of $2 million or 50% of the project cost (whichever is less). The incentives are offered in three phases: design, construction and production. The design portion of the incentive is set at $75 per kilowatt, capped at $195,000 or 50% of the design cost (whichever is less), and available at the completion of the design phase. The construction portion of the incentive package is set at $175 per kilowatt, capped at 50% of the construction costs or $650,000 minus the design incentive, and is available at commissioning of the system. The production portion of the incentive package is based on the measured performance of the system over 12 months of operation. The incentive level is tiered, with $0.06/kWh of useful electricity produced if the annual measured fuel-use efficiency of the system is between 60% and 70% (HHV). The incentive level is set at $0.08/kWh of useful electricity if the annual measured fuel use efficiency is above 70% (HHV). The package was designed to provide 2/3 of the incentives based on the performance of the system over the first 12 months of operation.[25] New York State has likewise adopted financial incentives to promote CHP growth. After investing $100 million over the past few years in CHP projects[26]—and generating more than 150 megawatts of new CHP capacity as a result[27]—the state has committed another $100 million to programs to support additional deployment through 2015.[28] These programs can serve as useful models in Indiana.

Overcoming Utility Barriers

While CHP and WHP projects can often function independent of the grid, they may rely on the utility grid for supplemental, standby, and backup-power services, and in some cases for selling excess power. Because of this interdependence, distributed generation projects are still influenced by utility policy. The IURC can address a number of utility barriers that would otherwise impede CHP and WHP deployment in the state, including expanding net metering, streamlining the interconnection process, and reducing unfavorable standby rates.

First, the IURC should expand the state's net-metering policies to include CHP and WHP among eligible technologies. While a number of distributed generation resources are currently eligible for net

[25] Personal Communication with John Cuttica, Energy Resources Center, Coordinator of Energy and Environmental Research Projects, June 7, 2014.
[26] New York State Energy Development and Research Authority (NYSERDA), May 2013, "Governor Cuomo Announces $40 Million for Large-Scale, Clean-Energy Power Systems to Guard Against Outages" (http://www.nyserda.ny.gov/About/Newsroom/2013-Announcements/2013-05-02-Governor-Cuomo-Announces-40-Million-for-Large-Scale-Clean-Energy-Power-Systems.aspx).
[27] NYSERDA, October 2013, "$100 Million Budget for CHP Incentives in New York State," USEPA CHP Webinar, at 4 (http://www.epa.gov/chp/documents/wbnr103113_levy.pdf).
[28] *Id.* at 35.

metering in Indiana,[29] it does not appear that CHP qualifies. Net metering is critical because it allows CHP units to sell excess electricity that they generate on site, improving the economic viability of the project.[30] The state should explicitly include CHP and WHP among those technologies that can sell electricity back to the grid, and it should further lift the eligibility limits to allow for CHP and WHP systems of all rated capacities to participate.

Second, the IURC should improve its interconnection standards. Being able to safely, reliably, and economically interconnect with the existing utility grid is a key requirement for the success of a CHP project. Complicated or costly requirements for connecting to the electric grid can make CHP and WHP projects uneconomical or too burdensome to undertake.[31] While there is no size limit on CHP system eligibility for interconnection in Indiana,[32] the tiered structure imposes an undue burden on industrial users with larger systems. The IURC should ensure its fees are appropriate and that costs are apportioned between the applicant and utility.[33] To do this, the state should ensure its current interconnection requirements reflect the latest Federal Energy Regulatory Commission rules (Order No. 792) for small generator interconnection, which provide a "dramatically cheaper and faster interconnection process for qualifying small projects."[34] In particular, the new FERC rules provide expedited review for small systems (i.e., those up to 5 MW) based on generator type, the voltage of the line at the point of interconnection, the voltage of the wire, and the generator's distance from the substation. New FERC rules also consider the frequency of outages during peak periods.[35] Many of these recommendations are reflected in Ohio's updated interconnection standards.[36]

Standby rates can present another utility barrier to CHP and WHP. Although standby rates are needed to allow utilities to recover costs they incur to provide supplemental, backup and maintenance service, many utilities have historically erected undue hurdles by assessing standby rates that far exceed actual costs and by imposing penalties (or "ratchets") that remain long after an outage. Standby rates have an important influence on the economics of potential projects and require a level

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[29] Database of State Incentives for Renewables and Efficiency, July 2013, "Indiana Net Metering" (http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IN05R).
[30] Center for Clean Air Policy, "Combined Heat and Power for Industrial Revitalization: Policy Solutions to Overcome Barriers and Foster Greater Deployment," July 2013, at 20 (http://ccap.org/resource/combined-heat-and-power-for-industrial-revitalization/).
[31] *Id.* at 15.
[32] GPI and ACEEE Factsheet, *supra* note 24.
[33] SEEAction 2013, *supra* note 21, at 14-15.
[34] Tam Hunt, Green Tech Grid, Jan. 7, 2014, "FERC's New 'Fast Track' Rules Will Make Clean Energy Development Easier," (http://www.greentechmedia.com/articles/read/ferc-adopts-new-california-fast-track-interconnection-rules-nationwide) (visited June 9, 2014).
[35] Interstate Renewable Energy Council, Dec. 11, 2013, "Improved Interconnection Procedures – Coming Soon to a State Near You?" (citing Final Rule; Order No. 792 re: Small Generation Interconnection Agreements and Procedures under RM13-2) (http://www.irecusa.org/2013/12/improved-interconnection-procedures-coming-soon-to-a-state-near-you/) (visited June 9, 2014).
[36] PUCO Case No. 12-2051-EL-ORD, Dec. 4, 2013, "In the Matter of the Commission's Review of Chapter 4901:1-22, Ohio Administrative Code, Regarding Interconnection Services" (http://dis.puc.state.oh.us/TiffToPDf/A1001001A13L04B42903E62593.pdf); IREC, Dec. 6, 2013, "Ohio Joins Top States Improving Interconnection Procedures for Renewables" (http://www.irecusa.org/2013/12/ohio-joins-top-states-improving-interconnection-procedures-for-renewables/) (visited June 9, 2014).

of regulatory oversight, which the IURC can provide. While several major Indiana utilities (Duke Energy and NIPSO) do not discriminate against CHP in their standby rates, the IURC should develop guidelines for all utilities.

In nearby Iowa, MidAmerican Energy recently proposed a rider that offers a good model for standby rates that support CHP. The MidAmerican proposal ties a generator's standby rate to its forced outage rate, assesses daily demand charges for scheduled outages with additional energy charges for unscheduled outages, allows customers to contract for standby capacity that is less than the facility's nameplate capacity, and eliminates ratchets.[37] We support this approach and previously filed a letter commending MidAmerican for taking these steps. The IURC should encourage Indiana-based utilities to adopt similarly favorable standby rate policies. To do so, the Commission must gather current and accurate information on CHP rate issues and develop an up-to-date understanding of the actual costs and benefits of onsite energy supplies.[38]

Clean Air Act Section 111(d) and Energy-Efficiency Goals

On June 2, EPA proposed the Clean Power Plan, establishing limits on greenhouse gas emissions from existing power plants. As the rule moves forward, Indiana will need to develop a state plan to reduce its greenhouse gas emissions. In the proposed rule, EPA emphasized the interconnections across the utility system, urging states to consider four building blocks to achieve the emissions limit. Under the fourth building block, EPA urged states to "increase[e] their demand-side energy efforts to achieve 1.5% annual electricity savings in the 2020-2029 period."[39] The IURC now has the opportunity to build the foundation for this goal. Notably, in its proposed rule, EPA explicitly recognized the role for CHP in state plans: "In all types of market structures, large energy users might independently see additional energy efficiency opportunities or opportunities for self-generation using…combined heat and power….and states can structure their plans to allow the CO_2 reductions achieved at affected EGUs through such actions to assist in reaching compliance."[40] The IURC should encourage large energy users to reduce their emissions through the use of CHP by supporting industrial self-direct programs and by adopting policies that reduce barriers to deployment.

Thank you for your consideration of these comments. We hope that the recent passage of S.B. 340 represents only a temporary setback and are encouraged by the foresight the IURC and Governor Pence are demonstrating in gathering information regarding energy efficiency. We are hopeful that CHP and WHP can play an increasing role in helping the state achieve its energy goals moving forward. We urge the IURC to support a rigorous self-direct program in lieu of an industrial opt-out.

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[37] Iowa Utilities Board docket RPU-2013-0004.
[38] Environmental Protection Agency, April 12, 2007, "Utility Rates: Designing Rates to Level the Playing Field for a Clean Energy Supply". (http://www.epa.gov/chp/policies/utility_fs.html)
[39] Environmental Protection Agency, June 2, 2014, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," at 114 (http://www2.epa.gov/sites/production/files/2014-05/documents/20140602proposal-cleanpowerplan.pdf).
[40] *Id.* at 308.

We also encourage the IURC to work with the General Assembly to support financial incentives that reduce the capital costs of CHP and WHP deployment. Finally, we urge the IURC to examine policies governing net metering, interconnection and standby rates to ensure that they do not discriminate against CHP and WHP. We would be happy to provide additional background about any of the policy recommendations contained herein and look forward to continued engagement as Indiana continues to develop its DSM and EE policies and programs.

Sincerely,

David Gardiner
Executive Director
Alliance for Industrial Efficiency

cc:/ Governor Pence and Tristan Vance