

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Joint Application of Ohio) Case No. 14-2296-EL-EEC
Power Company of Solvay Specialty)
Polymers for Approval of a Special)
Arrangement Agreement.)

**COMMENTS ON THE SPECIAL ARRANGEMENT AGREEMENT BY
THE OHIO ENVIRONMENTAL COUNCIL**

I. INTRODUCTION

On December 22, 2014, Ohio Power Company (“AEP” or “the Company”) and Solvay Specialty Polymers (“Solvay”) filed a joint application (Application) for approval of a special arrangement wherein Solvay has agreed to commit the resources from its planned combined heat and power (“CHP”) system to AEP for its compliance with the energy efficiency benchmarks set forth in Section 4928.66 of the Ohio Revised Code.

The Ohio Environmental Council (OEC) is a long-time proponent of cogeneration technologies due to the significant benefits that cogeneration provides to customers, the resiliency of the overall power grid and the environment. Combined heat and power (CHP) systems¹, when designed and engineered appropriately to the facility in which they're installed, improves fuel efficiency, reduces emissions by up to fifty percent, and significantly reduce on-site emissions of carbon dioxide and other pollutants such as nitrogen oxides (NOx) and sulfur oxides (SOx).² As such, OEC supports the policy enacted by Ohio Senate Bill 315 (129th General Assembly) that allowed CHP and Waste Energy Recovery (WER) systems to

¹ As defined in Section 4928.01 (A)(40) of the Ohio Revised Code

² Midwest CHP Technical Assistance Partnership, Energy Resources Center, University of Illinois at Chicago, Cuttica, John.

qualify as energy efficiency measures under Ohio's Energy Efficiency Resource Standard (EERS).³

Because of Ohio's large manufacturing base, we are ranked 5th in the nation for technical potential of energy captured through CHP and WHR. But we lag behind – 44th -- in taking advantage of the technologies. In Ohio, to date, some 45 sites have installed CHP systems that collectively generated 521 MW of power totaling 2.1% of Ohio's total generating capacity. Ohio's current CHP utilization pales in comparison to the national average of 8%. By most estimates, Ohio could realize up to 9 gigawatts of power generated through CHP and WHR, and with that, massive economic, environmental, and reliability benefits. While the project proposed in this application represents a significant step toward reaching Ohio's CHP potential, and AEP's foresight should be commended, Ohio will continue to lag and Ohioans will continue to miss out on the benefits of CHP unless and until the state puts its full effort into encouraging investment into such projects. We believe that coupled with projects such as this, that the Commission needs to move forward on finalizing rules on CHP and WER as energy efficiency resources to provide the certainty that the CHP development industry and Ohio's manufacturing base needs to move forward on these projects.

Therefore, OEC, with the proposed modifications and considerations outlined below, supports this CHP project, and offers the following comments on the Application for the Commission's consideration.

I. COMMENTS

³ Per Section 4928.66 of the Ohio Revised Code

The OEC respectfully submits these comments, and generally supports this joint application by the Company and Solvay. However, the OEC urges the Commission to consider improving the Application in a number of ways, as detailed below, prior to approving the Application.

1. **The per-kilowatt-hour incentive offered by the Company is woefully low, does not align with other states' incentive programs for CHP and/or WER, and would set a precedent that may unfairly undervalue the savings yielded by future projects.**

Despite the apparent agreed-to incentive between the Company and Solvay, the Commission should consider increasing the per-kilowatt incentive offered to Solvay in this Application because it is exceptionally low and would not set an adequate precedent for future CHP and WER projects incentivized under utility efficiency programs.

There is no doubt that the intent of the Governor's 21st Century Energy Policy, as enacted by Ohio Senate Bill 315 (129th GA), to include CHP and WER as energy efficiency resources, aligned well with the policy of the State of Ohio to "[e]ncourage implementation of distributed generation across customer classes...,"⁴ and "[e]ncourage the education of small business owners in this state regarding the use of, and encourage the use of, energy efficiency programs..."⁵.

Given that CHP systems stabilize energy costs for the end-user and increase the electric grid's reliability, and since CHP is explicitly qualified as an energy efficiency resource, any incentive offered by the Company to encourage the development of CHP or WER under the state EERS should reflect the intent of the policy set forth in Ohio Senate Bill 315 which was to increase the deployment of new CHP systems in Ohio.

⁴ Section 4928.02 (K) of the Ohio Revised Code

⁵ Section 4928.02 (M) of the Ohio Revised Code

The discussion of legislative intent is necessary to consider because the per-kwh incentive level of this Application is not particularly substantial, and because this Application is likely to set a precedent for future CHP projects. Despite the Company's claims to the contrary, to describe this agreement as just an agreement between the Joint Applicants, and that each future agreement between each customer is unique to the circumstances, is to ignore the likelihood that this Agreement will set a precedent to customers interested in developing future CHP projects across the state.

Incentive levels should be high enough to encourage cost-effective CHP projects that would not otherwise be built without the incentive. The Utility Cost Test (UCT) value for this project is **37.3, with total net benefits of \$48.4 million in avoided transmission and generation costs**, a substantial amount of savings which indicates this project would likely have occurred without the .005kw hour incentive the Company is offering. Since these projects will set a precedent for future CHP incentives, in order to create a substantial incentive for energy efficiency savings gained via CHP projects, and to fulfill the intent of encouraging energy efficiency resources such as CHP, the Commission should increase the per-kilowatt-hour incentive to at a minimum what the Ohio Manufacturers' Association Energy Group (OMAEG) recommends in their comments on this Application at **.008/kwh**. At a maximum, the Commission should examine and possibly adopt other states' and utilities' incentive levels. For example, the production incentives offered in Maryland and Illinois range from \$0.07 to \$0.08/kwh.

2. **The Company's Incentive Rate is Based on the Incorrect Assumption that the Operation of CHP Systems are akin to Behavioral Energy Efficiency**

It appears that the Company has incentivized this project as if it were an energy-efficiency behavioral measure rather than an installed energy efficiency measure as one would find under a prescriptive or custom energy efficiency program . This is indicated by the .005/kwh incentive offered, an incentive level which is similar to incentive levels offered to behavioral energy efficiency programs. While the definitions of what precisely constitutes an energy-efficiency behavioral program vary, at its heart, behavioral measures encourage the energy user to shift how they use energy, either by using energy at non-peak hours, or by taking certain actions which reduce energy usage during non-operational periods. By their nature, the energy savings coming from an energy-efficiency behavioral program are uncertain and entirely dependent on the energy user following a prescribed series of actions for the life of the energy efficiency program. Low incentives for energy efficiency behavior programs are justified because energy users are not likely to follow an energy use pattern over a sustained period of time.

Presuming the operation of a CHP system is more akin to a behavioral programs a low incentive level would be justified. However, the typical operation of a CHP system yields energy savings at a much more reliable and consistent rate than behavioral programs. First, the installation of a CHP system is very expensive, and takes several months (if not years), to design/engineer, permit and construct. Such a large capital investment alone is motivation enough to ensure reliable operation of the system, and maximization of its use. Second, the available CHP turbines and engines available in the market have well-established efficiencies and 24/7 operating protocols. When designed appropriately for the facility, and well maintained, CHP systems are highly reliable and typically only experience an average

downtime of 4%, and only 2% downtime reliable operation during peak hours.⁶ The OEC is unaware of any other state or utility that treats CHP systems as if they could be arbitrarily turned on and off, or as if their reliability is intermittent. Lastly, unlike energy efficiency behavioral programs, the Solvay Agreement indicates these systems will run almost continuously through the year and cannot be turned off by the whim of the operator.

The permanent nature of a CHP system and its guaranteed savings means this CHP project should not receive similar incentive as a typical energy efficiency behavioral program would receive, a much higher incentive that takes into consideration the intense capital investment these projects need and the significant 24/7/365 benefits they provide.

3. The Commission should Align the Incentive to Reflect the Efficiency of the CHP System

If approved without modification to the per-kilowatt hour incentive level, this Application may set a precedent that would attract CHP projects to seek an incentive under utilities' efficiency programs, but the projects attracted by the incentive may not be the most efficient CHP projects. Because of this Application's precedent-setting nature, the Commission should consider modifying the incentive Solvay in order to ensure the maximum amount of cost-effective CHP projects are encouraged and developed. To achieve this, OEC recommends incentivizing CHP systems that achieve higher efficiencies, and provide for greater upfront incentives.

Incentivizing CHP Systems that Achieve Higher Efficiencies

⁶ “The Legal Case against Stand-By Rates”, Casten and Karegianes, *The Electricity Journal*, November 2007, Vol. 20, Issue 9, pp. 37-38. http://www.recycled-energy.com/_documents/articles/sc_electricity_journal11-07.pdf

Instead of offering a one-sized fits all incentive for all CHP projects which reach a certain amount of efficiency, the Commission should encourage a tiered incentive approach that determines incentive levels based on the actual demonstrated efficiency of a CHP system, and not just give a kwh incentive. Under this incentive scheme, the portion of the electricity produced by the CHP system allowed as qualified savings increases as the efficiency of the CHP system increases.

In their own comments on the Commission's five-year rule review of the EERS (Case Nos. 13-651-EL-ORD, 13-652-EL-ORD, and 12-2156-EL-ORD), the Company proposed a tiered incentive based on a CHP system's efficiency performance. The Commission should consider adjusting the total incentive based on the Company's recommended model:⁷

"...THE PAYMENT PER KWH GENERATED SHALL BE FURTHER SUBJECT TO THE FOLLOWING ADJUSTMENTS:

FOR CHP/WER PROJECTS:

LHV = 80% OR MORE: 100% OF THE CALCULATED PAYMENT.

LHV = 70% UP TO 80%: 75% OF THE CALCULATED PAYMENT.

LHV = 60% UP TO 70%: 50% OF THE CALCULATED PAYMENT."

Such a tiered incentive structure would encourage CHP project developers to create and install only the highest-efficiency CHP systems and operate those CHP systems at the highest efficiency levels for as long as possible; and incentivize all prime mover technologies. It is based on the performance of real CHP systems, no matter the size, configuration and technology. Finally, it is simple to administer and implement, and we believe, will stand as a precedent foster continued innovative CHP projects that save energy and money.

Greater Upfront Incentives

⁷ Initial Comments by Ohio Power Company, In the Matter of the Amendment of Ohio Administrative Code Chapter 4901:1-40, regarding the Alternative Energy Portfolio Standard, to Implement Am. Sub. S.B. 315. Filed 3/3/13, Page 12.

The current incentive structure of the proposal also does not offset the substantial upfront costs a CHP project will entail. The more incentives given upfront to a CHP developer, the more likely the initial costs of design and construction of a CHP project will not be a barrier to the development of that project. And the greater upfront costs will lead to a faster payback on a CHP system, and the faster the payback, the more likely customers will look to CHP projects as a viable option for their facilities. But the current incentive structure ensures projects that can be done won't be done because the incentives offered, and the way those incentives are offered, will not support most economically viable CHP programs.

CHP projects always entail substantial upfront costs in order to establish a CHP system. So an incentive which is designed to accrue during the later years of a CHP systems lifespan will not alleviate one of the main barriers to installing CHP projects. The only CHP systems that will be developed are those whose savings are overwhelmingly substantial. For example, in this Joint Agreement the Solvay CHP project has a **UCT value of 37.3**; even given the substantial savings most CHP projects cause, the UCT value of the CHP project subject to this Joint Agreement is above and beyond any savings a typical CHP system can be reasonable expected to produce. Any incentive program which does not provide substantial upfront payments will inhibit many economically viable CHP projects from being developed because the incentives are not structured to mitigate the substantial upfront costs of those projects.

4. The Company Should Seek Approval to Bid the Energy Efficiency Savings into the PJM Capacity Markets

For a number of years AEP has, on its own accord, bid energy efficiency resources into the PJM Base Residual Auctions. Bidding CHP capacity into PJM's market has and will

continue to lower overall energy costs to all Ohioans, and make the electric grid more reliable. Therefore, the Commission should modify the Agreement to require the Company to put forward a viable plan for qualifying CHP as a capacity resource for PJM's capacity auctions.

By bidding energy efficiency savings into PJM's capacity markets, PJM will pay for the energy efficiency savings accomplished by this CHP project at the same price as any other energy efficiency capacity resource. Energy efficiency has a lower cost than other capacity resources, so requiring the Company to seek approval from PJM to allow the CHP energy efficiency resources to be bid into the capacity market would lower the overall cost of electricity for consumers, providing price suppression benefits to all the Company's customers. In addition, by bidding CHP into PJM's capacity market, the revenue generated could increase the incentives available for other industrial customers to install and operate CHP systems.

As mentioned previously, given the authorizing legislations explicit intent to encourage and ensure affordable energy is available to all Ohioans, and because CHP projects reduce overall wholesale prices while increasing electric grids reliability, AEP should be required to bid its excess CHP capacity into PJM's interconnected market.

Response to AEP Comment-Amendment or Not an Amendment

In the Company's recent comments filed in response to comments by the OMAEG and the Industrial Energy Users (IEU), the Company indicated that coming up with a plan to qualify CHP as a capacity resource would constitute an amendment to the portfolio, thereby allowing industrial consumers in AEP's territory to opt-out of any energy efficiency requirements. However, bidding excess CHP capacity into PJM's market does not constitute an amendment because AEP has, in the past, bid energy efficiency into the auction on its own

even when it was not required to by the current approved energy efficiency portfolio plan. Therefore, bidding CHP into the PJM auction would not modify the Company's plan, but will help facilitate fulfillment of the Company's efforts to optimize its bid into PJM. The Ohio Environmental Council is willing and able to assist the Company in its efforts to seek approval from PJM to allow the Company bid its CHP energy savings into PJM's capacity market.

Response to AEP Comment-Will PJM Allow CHP

AEP also argues in recent comments that PJM explicitly prohibits CHP from being bid into the market by quoting the PJM manual which states "The EE Resource must be fully implemented at all times during the Delivery Year, without any requirement of notice, dispatch, or operator intervention." And goes on to further indicate that CHP projects which require significant operation and maintenance would not qualify as an energy efficiency resource. But the joint application between Solvay Polymers and AEP indicated that the system will operate at "normal operation firing gas for approximately 95% utilization throughout the year" Hardly an operation mode that requires significant maintenance

The CHP system that is the subject of the agreement will run throughout the year and It is unlikely PJM would consider the few times the system is shut down as significant maintenance or operation to the point that PJM would not let CHP be considered a capacity resource.

III. CONCLUSION

The application submitted by Solvay and Ohio Power Company is unique because it provides for a first of its kind arrangement that harnesses and supports new energy efficiency savings projects. It is precisely this type of program that is contemplated by the statute and

code—and the type of program that the OEC and the manufacturing and industrial community of Ohio can enthusiastically support. The OEC believes that the application is just, reasonable, and will advance the economic and environmental goals of S.B. 221, S.B. 315, and the energy policies of this state. Therefore, the OEC urges the Commission to promptly approve this application with the proposed amendments and considerations expressed in the comments above. Furthermore, it is also imperative that the Commission finalize its proposed CHP and WER energy efficiency rules, which have been languishing far too long, and seize the opportunity to capitalize on the enormous potential of cogeneration.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing has been served upon the following parties by first class and/or electronic mail this 13th day of April, 2015.

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