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Via email to cip.contact@state.mn.us

William Grant, Deputy Commissioner
Minnesota Department of Commerce
Division of Energy Resources
85 7th Place East, Suite 500
St. Paul, MN 55101

RE: MRES Comments on the DER Draft Combined Heat and Power Action Plan

Dear Deputy Commissioner Grant:

Missouri River Energy Services (MRES) submits these comments on the Draft Combined Heat and Power Action Plan (Draft CHP Action Plan or Draft Action Plan) released by the Department of Commerce (Department), Division of Energy Resources (DER) on March 31, 2015.¹ As you know, MRES provides supplemental power to municipal electric communities located in Minnesota, Iowa, North Dakota and South Dakota. MRES, like its municipal utility members, is a not-for-profit political subdivision; MRES is owned by its municipal members who likewise are owned by the customers they serve. We offer these comments on behalf of both MRES and our 24 Minnesota member municipal electric utilities.²

We begin our comments by observing that the multi-year process undertaken by DER to evaluate Energy Savings Goals, and the specific role of Combined Heat and Power (CHP) as a component of those goals, is a process that MRES has monitored, but not actively participated in until now. Our perspective is informed by the publicly available information provided by the DER in the

¹ "Draft Combined Heat and Power Action Plan," recommendations prepared for Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy, submitted by Minnesota Department of Commerce, March 31, 2015 ("CHP Action Plan").

² The following Minnesota municipal electric utilities are members of MRES: Adrian, Alexandria, Barnesville, Benson, Breckenridge, Detroit Lakes, Elbow Lake, Henning, Hutchinson, Jackson, Lake Park, Lakefield, Luverne, Madison, Marshall, Melrose, Moorhead, Ortonville, St. James, Sauk Centre, Staples, Wadena, Westbrook and Worthington.

context of existing statutes and rules, as well as the experience of MRES and its members in integrated resource planning and energy efficiency programming to support the actual day-to-day operations of our relatively small and rural member communities and their electric utilities.

Overview

There are two essential issues that should be addressed before undertaking any particular effort under the Draft Action Plan. First, it is essential that any study or policy related to CHP recognize the actual role it can play in future energy efficiency and savings. Second (and only after this distinction is understood and acknowledged by all stakeholders), an informed CHP Action Plan should be finalized only after the Legislature establishes a clearly defined policy objective for the role of CHP in state energy policy.

A. Recognize the actual role of Combined Heat and Power in achieving energy efficiency

The record of the discussions, presentations, and reports, as well as the Draft CHP Action Plan itself, demonstrates a lack of clarity on the specific role of CHP in achieving energy efficiency or energy savings. This is evident from the various suggestions that raise the question as to how to treat CHP as a demand-side energy efficiency resource or as an electric utility infrastructure (EUI) component under the existing Conservation Improvement Program (CIP).

Put simply, CHP has the potential to result in energy efficiency by reducing electric needs of a consumer in those instances where there is existing customer generation serving the customer load. If existing generation is fitted with a steam recovery system to recapture the thermal energy currently being lost and use it to serve a portion of the customer's process needs (also referred to as bottom cycling), thus displacing the customer's overall existing electrical requirements, that makes more efficient use of existing resources and should be considered an energy efficiency tool (assuming that measurement and verification requirements are met). To that extent, it is helpful for the Department to survey the existing active customer generation sites (*i.e.* not back up generation installations) to assess potential energy efficiency opportunities that could be achieved if converted to CHP. In addition, it might also result in reduced CO₂ emissions if it offsets fossil-based generation (to the extent that can likewise be quantified).

However, the installation of new CHP generation facilities at locations where no existing generation is in place (top cycling) does not further energy efficiency or savings goals, and has quite the opposite effect. If an existing customer installs a new CHP generation facility to self-supply its needs, it does not *ipso facto* result in a more efficient system or lower emissions; the only thing that can be said with certainty is that it displaces existing generation that currently serves that load. In fact, it is entirely possible that by installing a new CHP generation facility to serve their load, a customer will actually be displacing more efficient generation or displacing generation with lower emissions. Furthermore, the lower utilization of existing facilities decreases the efficiency of existing units while increasing the costs of operation, impacting other retail customers.

By way of example, for MRES to meet the needs of its member retail utilities and its contractual obligations to those members, it is currently building additional generation – 36.4 MW of clean, non-emitting hydroelectricity at an existing U.S. Army Corps of Engineers dam. The Red Rock Hydroelectric Project is slated to begin commercial operation in 2018, and took years of permitting and planning before construction could be commenced. If an industrial customer in a member community which does not currently self-supply any of its electrical needs were to build a natural gas-fired CHP system to self-supply the energy needs of its industrial processes, it would not make the customer's existing electric use more efficient; it would only displace clean, renewable, base load hydropower, while at the same time increasing in-state emissions. Utilities have an obligation to serve the customers in their assigned service territory (under state law, regional transmission operator (RTO) rules, and by contract) and must plan resources – especially capacity resources – well in advance to reliably meet those needs. When the industrial customer installs CHP (most likely fossil-fuel fired) where it does not have existing generation it does not increase efficiency, it actually increases CO₂ emissions, decreases the efficient utilization of existing generation, and shifts costs to remaining retail customers.

The Department must acknowledge the clear distinction between making existing generation more efficient and simply encouraging the proliferation of cogeneration for its own sake. A comprehensive and reasoned energy policy should promote the more efficient use of existing resources and the general deployment of more environmentally sensitive, renewable resources, consistent with existing state policy. It should not encourage actions that duplicate generation and displace renewable resources, which ultimately increases CO₂ emissions.

The Department should focus its CHP research efforts to improve efficiency of existing generation that regularly serves existing customers. It is likewise important that those efforts do not include backup generators, such as emergency generation at public water treatment facilities or public buildings. Back up generation is typically used very infrequently (less than 100 hours per year), and any effort to convert back up facilities to CHP to serve the daily energy needs of those facilities would require a dramatic increase in the hours of operation (up to 8,760 hours) of such generators, most of which use diesel or other fossil fuels. Increasing the utilization of generators designed to operate infrequently will not result in more efficient energy use (assuming the necessary permitting approvals can be obtained). Instead, it will increase emissions of SO₂, NO_x, CO₂ and particulate matter, and displace existing resources, which may include renewable resources. In light of the pending rules of the EPA Clean Power Plan which are expected to be finalized this summer, it is important to look at CHP development with a critical eye on whether it creates efficiency or, instead, causes “leakage” by emitting additional CO₂.

As it moves forward, the Department, the Commission, the Legislature, and all other stakeholders need to recognize that CHP has the potential to result in energy efficiency by reducing electric needs of a consumer only in those instances where there is existing customer generation serving the customer load which is converted to cogeneration. Increasing deployment of CHP which does not result in efficiency gains or emission reductions is counterproductive.

B. Obtain clear policy directives

Second, it is essential that any Action Plan have as its foundation an agreed-upon and legislatively established purpose and objectives so that it can be tailored to meet well-defined goals, and can prioritize both activities and resources to achieve well-thought out and intentional outcomes. The Draft CHP Action Plan identifies six priority issues to increase the deployment of CHP in Minnesota, and it is those priority issues on which comments are sought. The reports, stakeholder meetings, and comments compiled since 2013 are informative, and the topics covered are varied, and deserve attention at an appropriate point in time. Until a policy directive is in place, however, it is premature to execute on any Action Plan.

The DER's Energy Savings Goal study, directed by the 2013 Legislature, concluded that the Legislature needs to "further define the primary objective of Minnesota's state energy efficiency policy goals."³ And, in particular, one of the Department's key recommendations was that the Legislature "define a more specific policy objective behind CHP development in the state." *Id.* The various consultants used in that study and subsequent studies have also pointed to the fundamental need to determine a clear policy objective before moving forward.⁴ Consistently throughout the process, in underlying materials and presentations prepared by both DER and various consultants and stakeholders, a common theme identified throughout the process has been that it is first essential to determine with more specificity the state policy objective for energy efficiency to understand if CHP might fit in those objectives, and if so, where and how.⁵

The DER's efforts since 2013 have been robust and encompass a wide range of the many economic, technical, regulatory, and other issues related to existing CHP and future development of CHP. These issues have been informed by various stakeholder surveys and meetings. The culmination of all of these activities to learn more about CHP is that the DER appears to have concluded that the State's purpose is to advocate not only for the expanded deployment of CHP in Minnesota, but to also set out a plan to carry out that purpose. The Draft CHP Action Plan suffers from a lack of focus and potentially inconsistent outcomes because there is no such clear policy objective.

MRES encourages the DER to take a step back and seek and obtain specific policy directives from the Legislature to inform any further efforts. The work completed to date has done much to educate DER and stakeholders about important considerations affecting CHP, and it has generally revealed diverse opinions on key issues; it has not resulted in a consensus from the stakeholders. (Surveys conducted during the process have rarely found a simple majority in favor

³ "Energy Savings Goal Study & Stakeholder Process, Legislative Report," submitted by Minnesota Department of Commerce to Minnesota Legislature, dated April 10, 2014 ("ESG Report"), at 1, 11-12, 13-15.

⁴ See ESG Report, at 17; "Minnesota Combined Heat and Power Policies and Potential, Conservation Applied Research & Development (CARD) FINAL REPORT," prepared for DER by FVB Energy Inc., July 2014 ("FVB CHP Final Report"), xiii, 79.

⁵ See DER Policy Brief – August 2014; FVB CHP Final Report, *passim*.

of pursuing any specific outcome.) This valuable work should be leveraged only after the Legislature has “define[d] a more specific policy objective behind CHP development in the state,” as the DER itself has noted. *Id.*

At this point, it is not clear whether CHP should be promoted as a way to further energy efficiency efforts because simply creating new CHP facilities where there is no existing generation will not result in efficiency gains. Nor is it clear whether CHP deployment should be advocated as a way to reduce carbon dioxide emissions in the state. While both increased efficiency and reduced emissions are generally favorable outcomes, it is critical to understand first what CHP can and cannot do, and what specific energy policy goals will be furthered by the increased development of CHP. Only then can a meaningful and focused action plan be developed.

Comments on Priority Issues

1. Standby Rates.

The DER has already undertaken the first of the Priority Issues it has identified. It recommended that the Public Utilities Commission (“Commission”) initiate a generic proceeding on standby service and rates, based on its recent review of the solar Distributed Generation (DG) tariffs established by the public utilities subject to rate regulation by the Commission, which revealed a wide diversity in the manner in which utilities recover costs associated with various standby services.⁶ The purpose of this DER recommendation is to introduce “transparent, unbundled pricing for standby rates” available for CHP facilities.

The Commission has, indeed, initiated just such a generic docket to inquire into standby service rates.⁷ It has started its inquiry by first seeking comments on what the appropriate scope of its inquiry should be based on the DOC Standby Report. MRES is actively participating in this process before the Commission. In doing so, we have suggested that the Commission take a measured approach by limiting its efforts to defining the basic elements of standby service and identifying the general principles that should govern economic issues for standby service rates.⁸ The DER’s CHP stakeholder process revealed that there is, at the most fundamental level, a lack of consensus on what electric service components are included in the subset of standby services

⁶ Comments of the Minnesota Department of Commerce, Division of Energy Resources,” filed in dockets no. E002/M-13-315, E002/M-13-642, E001/M-13-667, E015/M13-770, and E017/M-13-609, hereafter “DOC Standby Report,” dated January 30, 2015.

⁷ “Notice of Comment Period on Scope of Generic Proceeding on Standby Service Tariffs,” *In the Matter of a Commission Inquiry into Standby Service Tariffs*, Docket E-999/CI-15-115, February 12, 2015.

⁸ See Comments of Missouri River Energy Services, filed April 15, 2014, *In the Matter of a Commission Inquiry into Standby Service Tariffs*, Docket E-999/CI-15-115.

and whether the provision of such services should be subsidized and, if so, whether the state or utility ratepayers in general should be saddled with the costs to do so.

In determining the scope of the Commission's inquiry, we have also pointed out that many of the recommendations in the DOC Standby Report are based on a presumption that principles and rules that exist in deregulated markets should be incorporated in Minnesota. However, whether discussing the specific issue of standby service or the larger context of the entire Draft CHP Action Plan, it is essential that state agencies respect the statutory structure of the regulated electric utility industry in the state. It is important that the Commission and Department both reject inconsistent measures that fail to respect the existing statutory structure which includes both a right of utilities to provide all electric service in their assigned service territory and the obligation to provide such service at just and reasonable rates, with due consideration to environmental concerns.

2. CHP Evaluation Methodology and Criteria

The second Priority Issue the DER has identified is developing regulatory certainty around how CHP savings are quantified and credited under the Department's CIP. By its own admission, the surveys indicated less than 40% of participants thought this would be a good "initiative to facilitate deployment in Minnesota." This tepid response is likely a result of the unresolved issue regarding whether CHP is a measure that should be considered to be in the same category as "energy efficiency" or whether, instead, it should be considered on the supply side as a resource. As noted in the overview, it is essential that all parties recognize that energy efficiency gains can be achieved only where existing generation serving an existing customer reduces electric consumption in a measurable and verifiable way. The installation of new CHP facilities where none exist now is unlikely to result in energy efficiency or savings and more likely to create less efficient utilization of existing resources, displacing or even stranding renewable resources, and increasing emissions. Confusion over this issue makes it impossible to determine how to treat CHP in CIP. This is a critical issue that should be decided by legislative policymakers, and should not be pushed forward by shoe-horning CHP into the existing Technical Reference Manual (TRM) or adopting the Illinois CHP TRM to implement a policy that hasn't even been established. Clear policy direction is essential to guide efforts of the Department on the manner in which CHP should be evaluated.

3. Mapping CHP Opportunities

The DER's Draft CHP Action Plan includes mapping the facility-specific location of CHP opportunities as its third Priority Issue. It recommends that it begin with a two-year effort (2016-2017, funded by a pending grant application) to identify CHP opportunities at wastewater treatment facilities and at publicly-owned facilities in the state. It does seem that such an effort to identify public treatment works and public buildings that have existing generation to serve their regular electric needs (not back up generation) would be an appropriate point to start an effort if the state legislature does, in fact, determine that it is in the best interest of the state to promote CHP development. The state is in the best position to fund projects like CHP generation facilities

using state resources, and those efforts might be more easily embraced by public entities that can tolerate a longer payback. If the state is to expressly adopt such policies, it should likewise be at the forefront of deployment efforts as the laboratory for pursuing new social energy policies. In keeping with a deliberate transformative social policy, once success can be demonstrated by state projects, it would then – and only then – be appropriate to expand mapping efforts to identify private sector opportunities.

4. CHP Ownership Problems and Solutions

The stakeholder process identified a variety of technical and economic issues that are specific to individual sites and circumstances, and potential solutions, which has been identified as the fourth Priority Issue. The DER suggests that financial incentives, infrastructure subsidies, and flexible rate treatment could solve the various unique problems anecdotally reported in the CHP stakeholder process. The Draft Action Item recommended for this Priority Item is to have the DER work to increase awareness of existing financing programs that could be used for CHP projects and to communicate that information more effectively. This is an appropriate role for a state energy agency, and its early efforts – included in the Draft CHP Action plan – will no doubt be helpful to interested individuals.

The suggestion that additional financial incentives, infrastructure subsidies, and flexible rate treatment could solve the various unique problems anecdotally reported are not, however, appropriate points of advocacy for the DER. Instead, the policy decisions about spending other people's money (whether that of state taxpayers or utility ratepayers) to solve perceived "problems" of individual business and private interests is one that should only be determined in the Legislature. The question of whether CHP should be singled out for state-mandated incentives and subsidies is a matter of public concern which should be subject to full debate and public input. Such decisions need to be evaluated in the context of the state electric industry, pending federal regulations, and the impact of changes in the industry on the cost and reliability of electricity.

5. Education and Training Needs and Options

Although listed as the fifth Priority Issue, expanding education and training resources by the DER represents one of the most significant roles the Energy Division can carry out. The CHP Stakeholder engagement process, and the DER's corresponding web site devoted to the matter, have helped to address the lack of knowledge and understanding about the complex issues of CHP generation, which has been identified as a barrier that discourages private decision makers from pursuing CHP. Interested parties need an objective source of information that provides accurate and unbiased information on CHP technology, economics and financing information, evaluation tools, and regulatory information.

The DER is uniquely suited to carry out the education and training function for consumers, utility customers and developers. Its mission should also include providing similar information for non-CHP energy options, energy efficiency, and similar data. It is important that

Minnesotans can look to the DER to provide objective – and unbiased – information as a fundamental element of the Division’s mission.

6. Adapting CIP for Supply-Side Investments

In its final Priority Item identified in the Draft CHP Action Plan, the DER acknowledges that there is no clear path forward on whether CHP should be considered a demand-side energy efficiency resource or, instead should be considered a supply-side resource, perhaps eligible as an EUI investment to be counted in CIP. Like other Priority Issues, the stakeholder process revealed less than 40% of participants supported this objective. This result is symptomatic of the fact that stakeholders have failed to recognize the distinction between retrofitting existing customer generation to CHP to achieve efficiencies, and the separate matter of developing public- or customer-owned CHP generation where no generation exists now and which will serve only to offset existing resources. It also reflects DER’s willingness to pursue issues where the stakeholder group has not even been able to reach a simple majority to support a matter.

Admittedly, Minn. Stat. § 216B.241, which establishes utility energy efficiency and conservation goals, addresses the use of waste heat recovery converted into electrical or thermal energy as an “energy conservation improvement,” but that same definition creates confusion because it prohibits the use of such facilities as EUI projects when approved by the Commission for rate recovery.⁹ The DER concedes that there is no clear direction that CHP could even qualify as an EUI resource under CIP. Without any clear policy direction from the legislature, DER suggests that it step into this policy void and simply come up with a way to include CHP in the TRM, by consulting with the existing TRM Advisory Committee over a 6-month period (concluding in February 2016).

We respectfully suggest that the DER recognize that CHP can achieve efficiency savings only where existing generation is retrofitted to recover waste heat which results in measurable and verifiable energy savings, and that it is only in that instance that CHP could be incorporated into CIP. DER should seek a clarification from the Legislature before it marches forward to pursue the further development of CHP in the state. The Legislature is the authority that established the CIP program parameters, and should clarify exactly whether and, if so, how CHP should be made a priority to achieve energy efficiency goals or CO₂ reduction goals, as the state works to achieve its energy policy goals. This is essential because pending federal changes occasioned by the Environmental Protection Agency’s Clean Power Plan, and the subsequent development of a state plan to implement those changes, will require a comprehensive approach toward achieving the state’s energy policy goals.

⁹ Minn. Stat. § 216B.241, subd. 1(e) (definition of “energy conservation improvement”). See Minn. Stat. § 216B.241, subd. 10 (waste heat recovery; thermal energy distribution); Minn. Stat. § 216C.05, subd. 2 (biomass CHP eligible for inclusion in the renewable energy standard).

Conclusion

Before moving forward, it is essential that all stakeholders recognize the actual role that Combined Heat and Power can play in future energy efficiency and savings where existing generation serves an existing customer load. Second, an informed CHP Action Plan requires as a prerequisite that the Legislature establish a clearly defined policy objective in terms of the role of CHP in state energy policy. Only after clear policy goals for CHP are unequivocally established and the limited role of CHP in achieving energy efficiency is understood by all stakeholders, can the Draft Action Plan move toward a final form.

While MRES applauds the efforts of the DER to bring together various stakeholders to develop a dialogue and provide education about CHP, its mission should be focused on providing clear and unbiased information to the public about CHP to allow for informed decision-making about retrofitting existing generating facilities or development of new facilities. Before DER pursues finalizing any detailed action plan, however, it must first obtain from the Legislature a clear policy objective for pursuing further promotion and advocacy of CHP, and a defined understanding as to where CHP fits in the overall state energy policy. Until such time, DER should limit its role to acting as an information clearinghouse and facilitating discussions between and among stakeholders and interested parties.

Sincerely,

A handwritten signature in blue ink that reads "Mrg Simon". The signature is written in a cursive, flowing style.

Mrg Simon
Director, Legal