



12300 Elm Creek Blvd • Maple Grove, Minnesota 55369-4718 • 763-445-5000 • Fax 763-445-5050 • www.GreatRiverEnergy.com

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

Jessica Burdette
CIP Supervisor
Minnesota Department of Commerce
Division of Energy Resources
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

RE: Comments on Draft Combined Heat and Power Action Plan

Dear Ms. Burdette,

Great River Energy provides the following Comments in response to the Division of Energy Resources (DER) Draft Combined Heat and Power Action Plan that has been prepared for the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy (Draft Action Plan).

Great River Energy (GRE) is a not-for profit generation and transmission cooperative that serves the wholesale power needs of 28 retail distribution cooperatives owners throughout the state of Minnesota. GRE and its 28 member distribution cooperatives are independent, democratic organizations that are each governed by their respective board of directors. While our end use members are predominately residential, the industrial members that are served by our membership have proven critical to the achievement of the energy savings goals that were set forth in the 2007 Next Generation Energy Act.

GRE believes that it is crucial that the DER recognize the unique nature of consumer-owned utility business models within any policy development context.

GRE appreciates the consideration of these Comments in response to the Draft Action Plan.

General Comments

While the Draft Action Plan represents the outcome of a broader stakeholder process, the Draft Action Plan presents an optimistic approach to encouraging CHP development within the state. It is unclear what the overarching goal of this action plan is. Absent an overarching goal, the action plan appears to be driven by the principle of increasing CHP installations simply for the sake of doing so. If the overarching goal is to reduce carbon emissions, the ability to achieve this goal should not be so technology specific. Rather, utilities should be able to employ any means to realize the overarching goal, which provides the flexibility to identify the least cost compliance options, of which CHP is a potential option.

CHP is very site and time specific. The appropriate site needs to have a heat profile that is suitable for full utilization of the heating energy. As such it is difficult to generalize CHP projects in terms of their energy savings, or the overall performance assumptions. Such outcomes are very specific to the way in which a facility consumes energy throughout the course of a year, and slight deviations from an “ideal” CHP scenario can eliminate the economic proposition of CHP.

CHP facilities are not without risk. Significant up front analysis is required to determine that a sufficient amount of heat utilization can occur to warrant the requisite capital investment of a CHP facility. GRE has and will continue to work with members that are interested in making such an investment.

Response to Priority Issues Identified within the Draft Action Plan

Standby Rates

The Minnesota Public Utilities Commission initiation of the In the Inquiry into Standby Service Tariffs, Docket No. E-999/CI-15-115, addresses the priority issue of Standby Rates as outlined in the Draft Action Plan. The Commission’s proceeding on this issue should help to clarify the application of Standby Rates. The Draft Action Plan presents the issue of Standby Rates as a significant “market barrier,” and goes on to present Standby Rates as preventing upwards of 337 MW of potential CHP capacity in the state. While eliminating Standby Rates would improve the economics of CHP, this approach lends to favorable treatment of end use consumers that install CHP at the expense of other end use consumers who would ostensibly be subsidizing the CHP end use consumer for utility facilities that provide backup power. This concern would be eliminated if no backup power was required on the part of the end use consumer that has installed a CHP system.

GRE continues to be concerned about policies that focus on removing barriers for the sake of increasing the market share of mature technologies. The portrayal of Standby Rates as a “market barrier” within the Draft Action Plan is concerning insofar that only the benefits of removing the “market barrier” are examined. Any discussion related to the elimination of a “market barrier” should be evaluated against the reason this barrier is present. Standby rates are in place to properly compensate utilities for the CHP customer’s use of the grid during times when the CHP system cannot provide energy services to the facility. While this does represent an “economic barrier,” for CHP projects, it is also an economic reality. One cannot state that the purchase of natural gas, insurance, or the actual equipment costs associated with a CHP is an “economic barrier,” but this is the same line of logic that is being applied in the standby rate discussion. Completely eliminating standby rates would increase the amount of CHP that some may consider “economically viable,” but this is as much of a misrepresentation as suggesting that utilities should pay the fuel costs for privately owned CHP systems to remove the economic disincentive of purchasing fuel, thereby increasing the amount of CHP that is economically viable.

CHP Evaluation Methodology and Criteria

CHP benefits are very specific to the circumstances of the installation. While a general calculation procedure may prove to be useful in providing direction for how utility benefits should be determined, the overall complexity of these projects do not lend them to inclusion within a Technical Reference Manual. Because of the complexity and relatively low volume these projects should be treated as custom.

The Draft Action Plan alludes to the Illinois Technical Reference Manual (TRM) as an example of the type of calculation methodology that could be adopted for inclusion in the Minnesota

TRM. The specific calculation determines total annual source fuel savings on a BTU basis, while allocating percentages of overall kWh production or useful thermal energy to participating utilities. Both of these approaches represent deviations from current practices in Minnesota.

The evaluation methodology should be cognizant of the variable nature of the key inputs as well. A CHP facilities fuel cost represents an operating cost that can vary year-over-year and the degree to which these costs vary may negatively impact the overall value proposition.
Mapping CHP Opportunities

Prior to the DER's current efforts, Minnesota had previously inventoried sites within Minnesota for CHP potential. The resulting document highlighted the key criteria for evaluation of cogeneration viability and identified the following parameters as most important for screening and prioritizing cogeneration opportunities:

1. Size of thermal and power loads, and the relationship between the two;
2. Thermal and electric load factors;
3. Age of existing thermal facilities and plans for replacement or additional capacity;
4. Avoided costs and/or potential revenue for generated power; and
5. Fuel supply availability and costs.

The document also stated that cogeneration is most likely to be cost-effective when the following factors are present:

1. A large, high load factor thermal load.
2. A large, high load factor power load.
3. Relatively high cost electric power resources.
4. A cost-effective supply of electricity to back up and augment cogeneration when necessary.
5. A relatively high-value market for excess power generation, net of transmission and distribution costs.
6. The opportunity to re-dedicate the cost of replacing existing thermal resources to the cost of a new cogeneration project.
7. The opportunity to use lower-cost fuels with cogeneration compared to current fuels for thermal production.
8. Acceptable environmental impacts of cogeneration, such that the project can be meet all regulatory hurdles in a timely and cost-effective way.

The number of variables and the availability of this information for individual sites results in a CHP mapping exercise being much more difficult than the DER's previous mapping efforts, e.g. Wind and Solar Potential, where the effort is much more focused on a more ubiquitous resource. Many of the key CHP evaluation criteria may be difficult to ascertain through publically available information, and compelling this information from end use consumers for the purpose of a mapping exercise may prove difficult.

CHP potential illustrated in the Draft Action Plan is optimistic. The rationale for using 10-year paybacks or less as the threshold for assessing economic CHP potential inflates the potential that exists within the state. While a 10-year payback may be sufficient for an institutional member, or a large public facility, many industries would not accept this length of payback. The potential should be evaluated at several levels of payback to provide a better understanding of the realistic potential within the state. Institutional CHP could be weighted more to higher paybacks, while the potential for manufacturing could be limited to lower paybacks of 5-years or less.

Regardless of the aggregate potential that exists within the state, GRE is concerned about the conclusions that are drawn from this potential, which goes back to previous statements regarding the overarching goals of this exercise. If the goal is to appropriately identify CHP opportunities as a way of trying to eliminate modest barriers to CHP adoption, then it would be an appropriate exercise. However, the DER's previous efforts in this realm have reflected a "thou shalt" approach, which went as far as suggesting goals for specific quantities of CHP installations. This approach would not recognize the concentration of CHP opportunities, which was alluded to in the Draft Action Plan. GRE and its members do not have large concentrations of CHP opportunities, and the ability to attract these opportunities is limited. Furthermore, whatever potential exists is further complicated by the fact that many of the promising opportunities exist at facilities which have opted out of the Conservation Improvement Program (CIP), which would severely limit the ability to work with these end use consumers within the context of CIP.

CHP Ownership Problems and Solutions

GRE believes that identifying and leveraging existing financing programs to encourage CHP development is a laudable goal outlined within the Draft Action Plan. This component of the Draft Action Plan should also be incorporated into the Education and Training Needs and Options priority area as well. CHP facilities present a number of development challenges, identifying clear paths forward with respect to financing options is a good step towards working to encourage CHP development. GRE is concerned about the possible consideration of utilities being perceived as favorable financial mechanisms for CHP development. Throughout the CHP stakeholder process there were numerous discussions of related to utilizing the utilities weighted average cost of capital to provide financing to CHP projects. The Draft Action Plan is not clear that this is a desirable outcome of this process, but it is an approach that would be difficult to support.

Education and Training Needs and Options

GRE supports education that will help end use consumers consider CHP as an option at their facilities. To this end there is a great deal of information that is readily available that can assist facility personnel in analyzing the prospect of a CHP system. The DER identifies a number of activities that might be included in subsequent education and training initiatives. While GRE is generally supportive of these initiatives, it should be noted that Education and Training do not present significant barriers to CHP development. The DER refers to three perceived primary gaps in market knowledge and workforce resources:

1. CHP options and opportunities;
2. Regulatory, finance, and development issues; and
3. Onsite energy staffing.

The first gap is well understood, and the DER should do what it can to raise the awareness of CHP among end users that are able to utilize the particular technologies and strategies that make up a CHP project. However, it is difficult to ascertain whether this gap is real or the result of a limited sample size of survey respondents. Many end users may not need to understand CHP as the technology and strategy is not well-suited to their facility.

The second two "gaps" are difficult to eliminate. CHP is not a plug and play system and it does require a skill set that may be different than the existing facility staff. While efforts can be made to make it easier to permit and finance a CHP facility, it is still likely going to be a complex undertaking. This, in itself, can be a primary deterrent for a promising facility as it represents a significant undertaking outside of its core business.

Adapting CIP to Supply Side Investments

Minnesota Statutes currently include provisions for capturing waste heat from industrial processes and utilization of waste heat for electrical generation to be accounted for under CIP. GRE appreciates the flexibility that the current CIP statutes provide and has tried to utilize these provisions to the extent practicable. There are a number of outstanding questions concerning the treatment of CHP flexibility contained within the existing statute. The DER has indicated that it is working towards providing clarification around how a utility could avail itself of the current CHP provisions. Such clarification could result in a greater amount of CHP development and is deserving of consideration.

Conclusion

CHP is a very efficient energy utilization strategy under the right circumstances. CHP is also a complex and challenging strategy to employ even under ideal circumstances. While there are opportunities to eliminate perceived barriers to CHP development, such approaches need to be measured against a clearer objective than has been laid out within the Draft Action Plan. Increasing CHP installations is not a sufficient goal, and any goals that are overly focused on increasing one technology over other alternatives should be pursued cautiously.

GRE appreciates the opportunity to review and comment on the Draft Action Plan and looks forward to participating in subsequent discussions on this issue.

Sincerely,

/s/

Jeffrey Haase
Energy Efficiency Program Coordinator
GREAT RIVER ENERGY