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October 10, 2014



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

RE: In the Matter of Combined Heat and Power Policy in Minnesota

Division of Energy Resources:

The Minnesota Department of Commerce, Division of Energy Resources (“Department”), is hosting stakeholder meetings to study the issues and factors affecting CHP deployment in Minnesota. The Department hired FVB Energy (“FVB”) through a Conservation and Applied Research & Development (“CARD”) grant. FVB’s objective as stated in their executive summary, “to assess alternative approaches to potential changes in Minnesota policies and programs to increase implementation of combined heat and power” (“CHP”). These comments are in response to FVB’s studies and proposals, which are contained in the following three reports:

1. “Straw Man Options for Minnesota CHP Policies, June 20, 2014.”
2. “Minnesota Combined Heat and Power Policies and Potential, July 2014.”
3. “Assessment of the Technical and Economic Potential for CHP in Minnesota, July 2014.”

Otter Tail Power Company (“Otter Tail”) agrees that combined heat and power present opportunities in energy efficiency. Otter Tail appreciates the opportunity to participate in the stakeholder process. In our comments we address the main issues that create barriers for the development of CHP.

Does MN State Statute allow all forms of CHP in CIP?

Otter Tail does not believe MN statute 216B.241 is inclusive to all forms of CHP. Otter Tail recognizes CIP to include, “waste heat recovered and used for thermal energy” as an energy conservation measure that can be included in utilities’ CIP programs. MN Statute 216B.241, Subd 1, part (e), states,

(e) "Energy conservation improvement" means a project that results in energy efficiency or energy conservation. Energy conservation improvement may include waste heat that is recovered and converted into electricity, but does not include electric utility infrastructure projects approved by the commission under section 216B.1636. Energy conservation improvement also includes waste heat recovered and used as thermal energy.

Sudb. 10 of this statute further defines the use of CHP in CIP.

Subd. 10. Waste heat recovery; thermal energy distribution.

Demand-side natural gas or electric energy displaced by use of waste heat recovered and used as thermal energy, including the recovered thermal energy from a cogeneration or combined heat and power facility, is eligible to be counted towards a utility's natural gas or electric energy savings goals, subject to department approval.

FVB interprets these statutes to mean that all forms of CHP can be included in CIP. FVB asserts that this language is intended to also include CHP topping cycle technologies, but nowhere in statute is “topping cycle” mentioned. The only CHP defined in statute is “waste heat recovered and used as thermal energy”. Much of the discussion in the stakeholder process surrounds CHP facilities that **produce** thermal energy, not that **recover** energy. Otter Tail believes the spirit of statute is to promote waste heat recovery CHP in CIP.

To date, Otter Tail has not had any customer CHP projects included in CIP, but we have incentivized waste heat recovery through the Custom Grant program. The Custom Grant program offers customized incentives to commercial and industrial customers for conservation and efficiency improvements.

To ensure that waste heat recovery CHP is on an even playing field with other CIP programs and projects, Otter Tail would propose that these CHP projects are treated like other Custom Grant projects. Prior to approval, each custom project is evaluated by Otter Tail to ensure cost effectiveness. Evaluating CHP projects and paying incentives based on comparable methodologies as other Custom Grant projects creates a neutral playing field for traditional CIP projects and CHP.

The Division of Energy Resources audits Custom Grant projects to ensure proper evaluation methodologies are used. Including allowable CHP projects in the Custom Grant program would ensure that proper evaluation methodology is used.

Should CHP have a specific goal within CIP or a separate standard outside of CIP?

Otter Tail does not agree that a specific requirement for CHP should be included in annual CIP plans. Currently, no other energy efficiency measures have a specific minimum requirement in CIP. Including a CHP minimum in CIP would favor CHP over other CIP energy efficiency measures that have historically proven to be cost effective.

FVB understands that including CHP in CIP is a risk and states, “It is important that inclusion of CHP in CIP does not crowd out cost-effective end-use efficiency measures. A separate tier for CHP should be established.” FVB doesn’t discuss what funding source would be used to promote CHP, but they do recognize that without additional funding a CHP requirement would “crowd out cost-effective end-use efficiency measures.”

Policies in the State of MN prefer cost effective energy savings over all other energy sources. MN Statute 216B.2401 Energy Savings Policy Goal states,

“The legislature finds that energy savings are an energy resource, and that cost-effective energy savings are preferred over all other energy resources. The legislature further finds

that cost-effective energy savings should be procured systematically and aggressively in order to reduce utility costs for businesses and residents, improve the competitiveness and profitability of businesses, create more energy-related jobs, reduce the economic burden of fuel imports, and reduce pollution and emissions that cause climate change.

With CHP evaluation, cost effectiveness and energy savings unclear it seems very premature to support FVB's new proposed CHP standard or requirement of 0.45 percent of gross annual retail energy sales.

Is CHP fuel switching?

Using electric utility CIP funds to incentivize a natural gas CHP facility is fuel switching. Fuel switching with CIP funds has not been allowed historically. A March 7, 2005 *Order* by the Deputy Commissioner specifically prohibited targeted fuel switching in CIP.¹ In addition, the Director of the Office of Energy Security specifically prohibited the use of CIP funds to switch a customer from a natural gas system to an electric powered heat pump system in Otter Tail Power's 2011-2013 CIP.

Because of these policy directives, Otter Tail is not allowed to rebate a customer who installs an electric ground-source heat pump to replace a natural gas heating system, even though the overall thermal efficiency of the electric ground-source heat pump is more energy efficient than the natural gas furnace it would replace. However, fuel switching policy prohibits a CIP rebate for the higher efficiency, renewable, ground-source heat pump.

Consistent with current policy directives, natural gas utilities should incentivize customers for avoided natural gas costs; electric utilities should incentivize customers for avoided electric costs. Transfer payments should not result. Therefore, Otter Tail believes electric utilities cannot fund installation of CHP systems, with the exception of waste heat recovery. If CHP funding in CIP is allowed, then other fuel switching projects need to be considered.

FVB Energy's CHP Incentive Proposal

FVB Energy's CHP incentive methodology as proposed is flawed. On page 84 of FVB's "Minnesota Combined Heat and Power Policies and Potential" report, FVB calculates a proposed incentive level for CHP. The formula uses CIP costs over the last three calendar years, inclusive of administrative costs, referred to as CIP Expenditures ("CIPE"). The formula then divides these costs by the average kWh savings over the last three years, referred to as CIP Savings ("CIPS"), multiplied by 15. The incentive is paid out annually for a period of 15 years. The proposed formula is as follows:

$$\text{Level of Incentive} = \text{CIPE} / (\text{CIPS} \times 15 \text{ years})$$

Otter Tail disagrees with the calculation of the incentive level because it includes administrative costs associated with development, implementation, and evaluation. To be on par with other CIP program incentive offerings, the administrative costs should be removed from the "CIPE" portion of the

¹ Targeted fuel switching is prohibited in CIP per a March 7, 2005 *Order* by the Deputy Commissioner in Docket No. G008/CIP-00-864.07.

formula. Including only incentive costs in the formula makes an apples to apple comparison to other CIP customer incentive offerings and reduces the incentive amount by about half. Table 1 below shows that comparison based on Otter Tail’s average three-year CIP rebate as a percent of spend.

Table 1

	Otter Tail Power Company CIP Results				FVB Incentive Proposal (¢/kWh)	Incentive based on Rebate (¢/kWh)
	Total CIP Spending (\$)	Customer Rebate (\$)	Rebate % of Spend	Savings (kWh)	CIP Spending / (Savings * 15) * 100	Cust. Rebate / (Savings * 15) * 100
2011	\$4,344,581	\$2,070,104	48%	27,957,635	1.04	0.49
2012	\$4,816,994	\$2,306,774	48%	30,793,654	1.04	0.50
2013	\$5,253,935	\$2,788,799	53%	35,792,002	0.98	0.52
3 Year Avg.	\$4,805,170	\$2,388,559	50%	31,514,430	1.02	0.51

Most stakeholders agree that CHP projects tend to be very large and administratively complicated. FVB’s incentive methodology includes administrative costs as part of the incentive paid to CHP customers by all customers. All customers will then pay again through actual administrative costs accumulated in the tracker. In that fashion, nonparticipating customers pay for administrative costs twice, unless the administration costs are removed from the incentive calculation.

Alternative Portfolio Standard, Renewable Standard, Potential and Tradable Credits are unnecessary

Otter Tail does not support an Alternative Portfolio Standard (APS) or an additional Renewable Energy Standard (RES) requirement for the promotion of CHP. Otter Tail does not believe it is reasonable to mandate a new CHP standard when the economic potential in Otter Tail’s service territory is virtually non-existent.

FVB and ICF International’s report, “Assessment of the Technical and Economic Potential for CHP in Minnesota” indicates Otter Tail’s technical potential for CHP is 106.5 MW (Table 5, page 17). Of the total 3,049.1 MW technical potential in Minnesota, Otter Tail’s service territory accounts for 3.5%, which is the smallest market in the report. Table 19, page 33 of the report shows the entire 106.5 MW of Otter Tail’s CHP potential has a customer payback exceeding 10 years. *Otter Tail Power Company is the only utility with no economic potential with a payback of less than 10 years.*

The report also lists Otter Tail having the least amount of Waste Heat to Power (“WHP”) technical potential at 5.6 MW (Table 11, page 26). Otter Tail requests FVB to please provide the six customer sites and sizes for each application listed in Table 12, page 26, so that CIP opportunities for waste heat recovery can be examined for economic potential

The FVB proposal suggests utilities be required to purchase credits from other utilities. With so few opportunities for CHP development Otter Tail would be forced to purchase credits from other utilities. Otter Tail opposes the establishment of a system of tradable CHP credits in MN. Each utility has individual avoided costs that drive resource planning. Forcing one utility to purchase CHP credits from another utility is not representative of least cost planning.

Otter Tail agrees that CHP projects fueled by renewables should be eligible toward the RES. Otter Tail's existing renewable resources are on track to meet the MN RES requirements through the year 2025. With the lack of CHP potential in the Otter Tail service territory, Otter Tail opposes any increases to the RES for the sole promotion of CHP.

Utility ownership of CHP

Otter Tail is not opposed to the idea of utility ownership of CHP. Otter Tail cautions this idea with the understanding that the Department and stakeholders define the rules of utility CHP ownership. In the case of utility ownership, Otter Tail proposes that the electric utility service provider has the right of first refusal in ownership of the CHP facility. If the electric utility waives the right to ownership then a non-electric utility would have the right to own the CHP facility. This plan would be a win for both electric and natural gas utilities as the electric utility has the right to CHP ownership. In either case the natural gas utility achieves higher sales.

Otter Tail believes CHP systems should be sized based on the thermal load needs of the customer. The electricity production of the facility should be a byproduct of the CHP system and not the primary function of the utility owned system, unless the utility is an electric utility.

Stakeholders must be mindful of utility capital constraints as many projects compete for limited utility capital dollars. Any requirement for mandatory utility owned CHP is not supported by Otter Tail.

Resource planning

In the Final Report, Minnesota Combined heat and Power policies and Potential, July 2014, , a range of economic, regulatory, and institutional challenges are listed. Low electricity prices in Minnesota coupled with very short payback requirements by most potential industrial or commercial customers make CHP projects very difficult to justify economically. Otter Tail is concerned that to make CHP appear "economic", other "benefits" of CHP need to be included. Many of these benefits are difficult to measure, verify or quantify. Otter Tail is concerned about requiring another resource in the generation mix that is not least cost and causes an increase to customers' bills. Otter Tail is also concerned with the limited economic potential that exists in its rural service territory.

The report suggests using \$25 and \$50 per metric tonne CO₂ equivalent. Otter Tail believes that there is no benefit in creating yet another set of carbon values to for CHP analysis. The already-existing carbon values of \$9-\$34 per ton for planning purposes are sufficient.

CHP has been and will continue to be evaluated as part of our Integrated Resource Planning process. In our 2013 resource plan, an actual CHP facility was made available to our Strategist modeling as a resource. The CHP facility was selected as part of a least-cost resource plan in only a handful of sensitivities. In these sensitivities, the selection of CHP over other least cost resources would raise rates unnecessarily. If CHP does become a requirement, it is important that already-existing CHP be counted toward the requirements as well as CHP facilities outside of Minnesota.

Standby Rates

Otter Tail's position on standby rates has been stated in our October 1, 2014 comments to the Department in the Generic Proceeding on Standby Rates:

- The September 28, 2004 Order Establishing Standards in Docket No. E999/CI-01-1023, provides a solid foundation, is appropriate, and further standby rate design efforts are unnecessary.
- Otter Tail's Standby Rate incorporates many of the notable attributes of standby rates per the meeting materials and resources utilized in the Minnesota Department of Commerce, Division of Energy Resource's ("Department's") standby stakeholder meeting on September 11, 2014. Moreover, our approved rate design introduced a number of these notable attributes more than 20 years ago (Docket E017/M-93-941). Otter Tail does not currently serve a Minnesota customer on its standby rate, although it has in the past.
- Otter Tail believes the stakeholder meeting and associated studies have adequately raised the level of understanding of standby rates. Although further study could be deployed, the conclusion of a Department consultant determined that changes to standby rates would not impact a key payback criterion.

Conclusion

Otter Tail recognizes the challenges surrounding the development of cost-effective CHP. Including an expanded version of CHP in CIP is not supported by current policy and CIP Orders. At a minimum, including waste heat recovery CHP projects in CIP requires them to be treated equally to other CIP programs. Allowable CHP projects would need to pass benefit/cost tests, receive similar custom incentives, and be evaluated/audited like other CIP programs. Requiring waste heat recovery CHP to be treated like other CIP programs maintains the integrity of CIP and the statutory definition of CIP.

Otter Tail opposes any requirement for CHP in CIP and any overall MN statutory Alternative Portfolio Standard or Renewable Energy Standard for CHP. Otter Tail has no cost effective CHP potential to support CHP being included in a new requirement. A system of tradable credits only adds risk to Otter Tail's customer who will be forced to buy credits that may not be cost effective when compared to alternatives.

Otter Tail does not oppose utility ownership of CHP as long as the electric utility has the first right of ownership. Utility ownership of CHP would also have to be cost effective for the utility and its customers. Any requirement for mandatory utility owned CHP is not supported by Otter Tail.

Otter Tail appreciates the opportunity to participate in the stakeholder group and looks forward to the continued exploration of opportunities, assessment of challenges and work towards equitable solutions. If you have any questions regarding this filing, please contact me at 218-739-8303 or at kpederson@otpc.com.

Sincerely,

/S/ KIM PEDERSON

Kim Pederson
Manager, Market Planning

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