

# **Draft CHP Action Plan: Comment Period Synthesis Report**

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Prepared For:

**Minnesota Department of Commerce - Division of Energy Resources**

Prepared By:



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## I. CHP Action Plan and Stakeholder Engagement Process

### A. Background

The Minnesota Department of Commerce (Commerce) was awarded a U.S. Department of Energy (DOE) grant to carry out a strategic stakeholder engagement process and develop an Action Plan for combined heat and power (CHP) deployment in Minnesota. As part of this project's scope of work, a series of stakeholder meetings were held between September and November 2014 to provide information and facilitate discussion on CHP issues involving Minnesota's regulatory framework, technical and economic potential, and education and training needs.<sup>1</sup> The objective of these public meetings was to:

1. Inform Stakeholders about current activity underway to increase CHP Implementation.
2. Facilitate discussion regarding barriers and opportunities to for greater deployment of CHP technologies.
3. Solicit ideas for solutions to the challenges presented during discussion of CHP implementation.
4. Provide information through development of an Action Plan and provide details of the necessary steps to increase CHP activity in Minnesota.

The series of CHP stakeholder meetings built upon Commerce's past and current CHP work and focused on more specific policy issues and recommendations. Discussions with stakeholders during the DOE CHP stakeholder engagement process and results from the post-engagement CHP survey suggest six priority issues that would effectively help advance CHP in Minnesota if addressed:

1. *Standby Rates*: Introducing transparent, unbundled pricing for standby rates.
2. *CHP Evaluation Methodology and Criteria*: Establishing an approach for fair, accurate, and comprehensive assessment and valuation of CHP projects.
3. *Mapping CHP Opportunities*: Conducting an empirical study and granular analysis of opportunities for topping-cycle and bottoming-cycle CHP projects.
4. *CHP Ownership Problems and Solutions*: Addressing issues and options involving utility resource planning, ratepayer risks, market power, and behind-the-meter operations.
5. *Education and Training Needs and Options*: Addressing knowledge gaps and defining options for CHP education and training.
6. *Adapting CIP for Supply-Side Investments*: Establishing and clarifying CHP provisions in Conservation Improvement Programs (CIP).

Based on a review and synthesis of the priority issues identified through discussions with stakeholders and Commerce's recent CHP studies, Commerce on March 31, 2015 released a Draft CHP Action Plan describing its recommendations for addressing priority issues and action

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<sup>1</sup> Information and materials related to the CHP stakeholder engagement process and CHP Action Plan development process are available via Commerce's website here:  
<http://mn.gov/commerce/energy/businesses/clean-energy/distributed-generation/2014-workshops/chp-meetings.jsp>

items.<sup>2</sup> The table below presents a summary of Draft CHP Action Plan recommendations and next steps to help increase CHP activity in Minnesota:

Priority Issues	Action Items	Timing
<b>1. Standby Rates</b>	Continue stakeholder engagement through MN PUC generic proceeding on standby rates	Near-term (2015-2016)
<b>2. CHP Evaluation Methodology and Criteria</b>	Establish CHP Energy Savings Attribution Model	Near-term (2015-2016)
<b>3. Mapping CHP Opportunities</b>	Map CHP opportunities at wastewater treatment and other public facilities	Intermediate-term (2016-2017)
<b>4. CHP Ownership Problems and Solutions</b>	Leverage existing financing programs applicable to CHP	Near-term (2015-2016)
<b>5. Education and Training Needs and Options</b>	Expand education and training resources	Near-term (2015-2016)
<b>6. Adapting CIP for Supply-Side Investments</b>	Develop and clarify electric utility infrastructure policy	Long-term (2017-onward)

**Fig. I-a: Summary of Draft CHP Action Plan Action Items**

**B. Draft CHP Action Plan – Stakeholder Comment Period**

Commerce convened a public comment period from March 31 through May 15, 2015, during which stakeholders were invited to submit written comments on the Draft CHP Action Plan. Additionally Commerce commissioned Microgrid Institute to host a public webinar to review the Draft Action Plan. Approximately 60 stakeholders attended the webinar on April 28.<sup>3</sup>

<sup>2</sup> *Draft Combined Heat and Power Action Plan*, Minnesota Department of Commerce, Division of Energy Resources, March 31, 2015.

<http://mn.gov/commerce/energy/images/draft-chp-action-plan-2015.pdf>

<sup>3</sup> Webinar materials are available on the Commerce CHP website:

<http://mn.gov/commerce/energy/businesses/clean-energy/distributed-generation/2014-workshops/chp-meetings.jsp>

Also, a recording of the webinar can be viewed at Microgrid Institute’s YouTube channel:

<https://www.youtube.com/watch?v=uvHn-3U1Qwo&feature=youtu.be>

When the comment period closed, Commerce received written 12 submissions comprising more than 50 pages of comments plus attachments, from seven utility companies, three industry organizations and advocacy groups, and two third-party developers and vendors.

Utilities	Advocacy Groups	Vendors and Developers
<ul style="list-style-type: none"> <li>• <a href="#">CenterPoint Energy</a></li> <li>• <a href="#">Great River Energy</a></li> <li>• <a href="#">Minnesota Power</a></li> <li>• <a href="#">Missouri River Energy Services</a></li> <li>• <a href="#">NRG Energy</a></li> <li>• <a href="#">Otter Tail Power</a></li> <li>• <a href="#">Xcel Energy</a></li> </ul>	<p><b>Organizations</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Fresh Energy</a></li> <li>• <a href="#">Midwest Cogeneration Association</a></li> <li>• <a href="#">Minnesota Municipal Utilities Association</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Cummins Inc.</a></li> <li>• <a href="#">Ever-Green Energy</a></li> </ul>

**Fig. 1-b: Comment Period Responders**

To prepare this synthesis report, Microgrid Institute reviewed all submitted comments and summarized them according to topic focus. All submitted comments and materials are available for review at Commerce’s website. Please note: In the synthesis discussion below, Draft CHP Action Plan recommendations are included in italics for reference.

**C. Comments Summary and Highlights**

Comments submitted during the Draft CHP Action Plan comment period reflect a diverse range of perspectives on the role and potential of CHP in Minnesota, as well as the actions considered appropriate for Commerce to endorse.

Submitted comments generally can be divided into three categories:

- 1) Supporting, *without* substantial input
- 2) Supporting, *with* substantial input
- 3) Opposing, with substantial input

*Supportive Input*

Many of the supporting submissions focused on topics and possible action items that were omitted from the Draft CHP Action Plan. Recurring themes include needs for:

- Facilitating non-utility CHP development and private capital access
- Clarity regarding treatment of CHP in IRP processes
- Clarity on how CIP EUI provisions could facilitate supply-side efficiency improvements, including topping-cycle CHP, and implications for existing demand-side CIP programs

*Opposing Input*

Comments that generally oppose the Draft CHP Action Plan also address recurring themes, including perceived needs for:

- Comprehensive, objective, “technology-agnostic” approach to resource planning, consistent with State strategies for implementing the pending federal EPA Clean Power Plan
- Policy direction and statutory authority for proposed action items
- Clearer definition of CHP Action Plan objectives and guiding principles
- Clarity about options for utility investments in CHP assets on customer property, especially stranded asset risks and least-cost planning requirements
- Alternatives to CIP as a vehicle for financing CHP deployment

In addition, both supporting and opposing stakeholders included comments suggesting that Commerce should coordinate TRM development actions with the ongoing CIP planning and compliance timeline – either postponing or accelerating the process, and including flexibility in implementation.

**D. Microgrid Institute Recommendations**

To ensure the Final CHP Action Plan serves the interests of Minnesota stakeholders, Microgrid Institute recommends implementing several key refinements to the Draft CHP Action Plan. Refinements are explained in detail in Section IV. “Recommendations and Next Steps,” and summarized as follows:

**A. Provide Clear Objectives and Guiding Principles**

1. Include a formal statement of purpose and objectives.
2. Include a generic set of principles reflecting State policy interests that should guide implementation of action items, *e.g.*:
  - a. Objectivity and comprehensiveness of solutions to ensure efficient outcomes.
  - b. Facilitation for both utility and non-utility CHP investments.
  - c. Preservation of utility franchise rights and obligations.
  - d. Opportunity for innovation and private capital deployment.

**B. Thoroughly Describe Action Items**

1. Describe Commerce’s intent and expectations for each action item.
2. Explain how action items follow applicable guiding principles.
3. Clarify how action items may obviate or address apparently omitted items.

**C. Add Action Items of Critical Interest to Stakeholders**

1. Study IRP treatment for CHP and other DG.
2. Review utility avoided-cost calculation methodologies.
3. Establish contingent action item as alternative to CIP EUI approach.

**D. Apply CHP Stakeholder Input in Comprehensive Policy Process**

1. Ensure inputs and outcomes inform State efforts toward comprehensive policy updates.

## II. General Feedback on the Draft CHP Action Plan

Submitted comments reflect a variety of views on the Draft CHP Action Plan. In general, commenters express support and appreciation for the CHP stakeholder engagement process. For example, NRG Energy refers to the Draft CHP Action Plan as a “timely assessment,” and says it “captures the key issues in the future development of CHP in Minnesota, both in scope and priority.” CenterPoint Energy adds that “finding ways to encourage the adoption of CHP systems, and thus increase the efficiency of the overall energy system, is in the interests of all Minnesotans.” CenterPoint also says the plan is “reasonable and that it correctly identifies and prioritizes” action items.

### *Omitted Options and Action Items*

Several commenters identify policy options and action items that were discussed during the CHP stakeholder engagement process but omitted in the Draft Action Plan.

Ever-Green Energy observes that the Action Plan tends to emphasize new CHP installations, and suggests that existing electric-generating plants should be converted to CHP plants where feasible.

The Midwest Cogeneration Association (MCA) expresses concern that the Draft Action Plan omits “work toward developing a pathway for privately owned CHP projects.” The organization notes that utility-owned CHP alone may not “[harness] the power of the marketplace to generate CHP projects,” and suggests that the Final Action Plan should include a priority action item to incorporate privately owned CHP into CIP or utility portfolio incentive programs.

MCA suggests that the Final Action Plan should provide for analysis of utility avoided-cost rates to determine if they reflect the true cost of future generation.

MCA and Ever-Green Energy both assert that CHP should be included in future utility resource plans. Otter Tail Power noted that “CHP is most appropriately evaluated like other resources in utilities’ Integrated Resource Plans.”

Minnesota Power states that the Draft Action Plan “failed to adequately address important issues such as stranded asset risk, funding of program costs, and cost-recovery of utility-funded projects.” Minnesota Power proposes that the Action Plan should include “separate criteria to evaluate and compare CHP projects ... to assure that only sensible CHP projects are developed. The criteria should include an economic evaluation, a stranded asset risk assessment, a benefit analysis, and a customer agreement.”

Xcel Energy adds that the Action Plan omits recommendations to “address the challenges related to cross-subsidization and cost-effectiveness of CHP as a resource.” Xcel further urges the Department of Commerce to include in the Final Action Plan the guiding principles that it recommended in the comments it submitted during the earlier CHP stakeholder comment period, and summarized as follows:

- Holistic and balanced approach to carbon reduction
- Resources must be cost-effective
- Identify system value
- Find an incentive opportunity outside of CIP funds
- Reduce cross-subsidization
- Appropriate allocation between energy source providers
- Flexibility

*Seeking Clarity Regarding Purpose and Objectives*

In their comments, electric utility stakeholders identify the need for greater clarity regarding the purpose and objectives of the CHP Action Plan. For example, Xcel Energy observes, “The Action Plan lacks a specific goal, which makes it difficult to determine how to measure the success of implementation of the plan. We therefore suggest that the final version of the Action Plan include a specific objective.”

Great River Energy (GRE) offers the opinion that the Action Plan “appears to be driven by the principle of increasing CHP installations simply for the sake of doing so... 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 suggests that if the Action Plan’s primary goal is to reduce carbon emissions, then it 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 last-cost compliance options, of which CHP is a potential option.”

Otter Tail Power adds that while the Action Plan addresses many items that were discussed during the CHP stakeholder engagement process, the process itself did not yield consensus regarding many of the action items included in the Draft Action Plan.

*Validating Estimates of CHP Potential*

Some electric utility stakeholders comment that the Draft Action Plan is based on an overly optimistic assessment of CHP potential in the state. For example, Otter Tail Power says it “found ICF’s CHP Installation Database to be inaccurate” and raises concerns about any potential assessment that relies on the ICF estimates. Xcel Energy states that the final Action Plan should address discrepancies among various CHP potential studies, including its own commissioned assessments.

Missouri River Energy Services (MRES) further suggests that CHP potential should be assessed separately for new installations and replacements or retrofits to existing onsite generation systems. The company states, “CHP has the potential to result in energy efficiency by reducing electric needs of a customer only in those instances where there is existing customer generation serving the customer load which is converted to cogeneration.” MRES illustrates its point by suggesting that to the degree a new CHP system displaces electricity derived from hydroelectric generation, it will increase rather than decrease consumption of fossil fuels: “Increasing

deployment of CHP which does not result in efficiency gains or emission reductions is counterproductive.”

Otter Tail adds that the system-wide emissions-reduction benefits of CHP may decline in the near future, as renewable and distributed generation resources provide a larger share of the overall generation mix.

Likewise, among Xcel’s recommend guiding principles, the company urges a holistic and comprehensive assessment of efficiency benefits and environmental values – to avoid inefficient investment of resources toward achieving the State’s environmental policy goals.

*Obtaining Policy Direction*

MRES expresses the view that the Department of Commerce should not proceed with a comprehensive CHP Action Plan before it obtains “specific policy directives” from the Minnesota Legislature. In the meantime, MRES suggests that the Department of Commerce “should limit its role to acting as an information clearinghouse and facilitating discussions between and among stakeholders and interested parties.”

Minnesota Municipal Utilities Association (MMUA) adds, “At the very least, major public policy shifts such as deconstructing our electric service regulatory structure should be recognized as fully within the domain of the legislative branch of government and not up for debate within regulatory proceedings.”

Accordingly, Otter Tail Power suggests that “the Draft Action Plan should be scaled back and include only education and evaluation opportunities.”

**III. Comments on Draft Action Plan Priority Issues and Action Items**

**A. Priority Issue: Standby Rates**

**Draft Action Item:** *Continue Stakeholder Engagement through a Generic Proceeding on Standby Rates*

*A generic proceeding on standby rates addresses a priority issue that was identified through the extensive analysis completed by Commerce and its partners. As a near-term action item in identifying improvements to standby service, Commerce encourages stakeholders to participate and submit feedback during the comment period filed by the Public Utilities Commission (PUC). Stakeholders should submit comments on the Commission’s website, according to the following timeline and topics for comment:*

- *Timeline:*
  - *Initial comment period closes on April 15, 2015*
  - *Reply comment period closes on May 15, 2015*

Addressing the issue of standby rates, commenters generally agree with the Department of Commerce’s recommendation to continue stakeholder engagement through the Minnesota PUC’s generic proceeding on standby rates. Xcel Energy, for example, reiterates its agreement

that the PUC’s proceeding is “the appropriate venue” for addressing the issue, and refers to its comments filed April 15, 2015, in the PUC docket.

MCA identifies standby rates as a high priority for its Minnesota members, and expresses hope that the PUC proceeding will “provide a forum for thorough review of ‘cost causation,’ market diversity and reliability, coincident peak/non-peak rates, planned outages, CHP attributes and appropriate capacity crediting, and practices such as Standby Charge ‘ratchets.’” Cummins Inc. asserts that Minnesota’s standby rate structure “severely limits the deployment of CHP and DG as the rate structure is punitive towards both small and medium sized CHP projects.” Cummins suggests that standby service policies and other structures should give distributed generation (DG) systems credit for increased efficiency, notably via reduced line losses. Additionally, Fresh Energy seeks clarity on whether Minnesota law allows standby rates to be charged on net-metered customers that exceed 100 kW of capacity.

Minnesota Power states its position that standby rates “should be as simple and understandable as possible, while sending clear price signals and incentives for customer-owned generation to be operated as efficiently as possible.” The utility adds that State policies on standby rates should be flexible, accommodating differences among Minnesota utility service territories.

GRE notes that portraying standby rates as a market barrier tends to imply that removing standby service charges would yield only positive outcomes, ignoring the fact that standby service represents a real cost for the utility. “Any discussion related to the elimination of a ‘market barrier’ should be evaluated against the reason this barrier is present,” GRE states.

MRES cautions against supporting any changes to standby service pricing policies that would “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.”

MMUA echoes the point, adding that “broad public policy principles such as exclusive service must not be allowed to creep into the CHP Action Plan.” Specifically MMUA objects to consideration of standby service-pricing practices that would allow Minnesota customers to procure standby energy supplies in the wholesale market, or to sell electricity output from a CHP plant off-site to non-utility customers. MMUA cites Minnesota Statute (Sec. 216B.40) establishing electric utilities’ exclusive retail service rights. Moreover, MMUA objects to calculating the purported benefits of DG, including CHP, as part of utilities recoverable costs for providing standby service. “Whether the PUC pursues the goal of ascertaining the benefits of distributed generation or does not, we believe such public policy discussions belong at the legislature for broader discussion and should not be part of the final CHP Action Plan,” MMUA states.

Otter Tail Power reiterates its earlier submitted comments challenging the need for the PUC’s generic proceeding, and stating its belief that the company’s standby rate is “well positioned for

Otter Tail customers seeking standby service as well as being willing and able to make incremental improvements, as warranted.”

**B. Priority Issue: CHP Evaluation Methodology and Criteria**

**Draft Action Item: *Establish a CHP Energy Savings Attribution Model***

*The following are possible near-term (2015-2016) action items that could help provide regulatory certainty regarding how CHP energy savings are quantified and counted within CIP:*

- *Establish a CHP attribution model as part of Minnesota’s Technical Reference Manual (TRM) in collaboration with Technical Reference Manual Advisory Committee (TRMAC) members.*
- *Examine ways to adapt and incorporate aspects of Illinois’ CHP TRM to establish a Minnesota-specific CHP savings methodology.*
- *The Energy Resources Center (ERC) will present an overview of Illinois’ CHP TRM during the webinar in April on Commerce’s Draft Action Plan. Commerce will email an invitation for the webinar to stakeholders and also post a link for registration on the Department’s CHP webpage.*

Submitted comments diverge in support and opposition for the Draft CHP Action Plan’s proposed action item relating to CHP evaluation methodology and criteria. CenterPoint Energy states its support for the proposed action item “in order to establish clarity about how potential projects should be evaluated and how savings should be attributed.” Ever-Green Energy agrees, stating that establishing a CHP attribution model is important for providing certainty and clarity.

While supporting the action item, MCA expresses concern that CHP may not fit into a TRM focused on demand-side management programs. TRMAC members “are generally not accustomed to reviewing supply-side or custom projects such as CHP... We recommend that the Minnesota TRMAC create a CHP Subcommittee to undertake the development and clarification of the EUI Policy that is recommended in this item.”

*Comprehensive Valuation Approach*

Fresh Energy relates its recent experience working on legislation (H.F. 1870) requiring investor-owned utilities to pursue electric utility infrastructure (EUI) programs as part of their CIP efforts. The organization suggests that while the Illinois model provides a valuable starting point, the TRMAC may find Minnesota’s needs are different.

MCA comments that while the Illinois method “is fairly precise, it is not the most transparent approach and it is not the most generous to CHP.” The association adds that the Illinois approach resulted from a compromise that depended in part on parallel incentive programs for small CHP projects (1 MW and less) that do not currently exist in Minnesota. It suggests that Commerce and the TRMAC should consider approaches taken in other states, most notably Massachusetts, which it says offers “greater transparency and simplicity” – as well as energy savings calculated on the basis of 100 percent of a CHP plant’s electricity output.

GRE argues that the Illinois TRM methodology uses approaches that “represent deviations from current practices in Minnesota,” referencing fuel savings calculated on a Btu basis with allocations to participating utilities as percentages of overall energy production.

Minnesota Power observes that the Illinois model represents a pilot program, and as such has not proved its efficacy in supporting cost-effective CHP projects.

CenterPoint also encourages the TRMAC to consider other models and “novel ideas ... to ensure the final model is appropriate for Minnesota and supported by Minnesota stakeholders.” Specifically CenterPoint states that “any savings attribution model should have as a guiding principle the idea that each energy provider (both natural gas and electricity) should receive value (in the form of claimable CIP energy savings, which should be included in the calculation of the CIP financial incentive) from working jointly to facilitate and encourage CHP projects.” Additionally, CenterPoint calls for a careful approach to ensure that any “legitimate utility financial impacts, including any decrease in sales resulting from the project” are appropriately addressed.

Xcel Energy adds “the criteria for CHP evaluation should look at more than energy savings, and should consider carbon emissions, cost-effectiveness, customer commitment, and system value as well.” In particular the company urges an approach that would compare CHP to other options for achieving equivalent goals. Also Xcel emphasizes the need to analyze and address potential issues regarding “fuel switching,” in which a State policy would effectively move customer load from an electric utility to a gas utility, or vice-versa. “Before an evaluation methodology can be implemented, a resolution is necessary on the treatment of fuel switching in CHP projects,” Xcel states.

GRE notes that CHP project benefits are specific to a given installation, complicating the process of evaluating projects for benefits to the utility system. “Because of the complexity and relatively low volume these projects should be treated as custom,” as opposed to standardized, the company states. GRE adds that key inputs affecting project valuation – including fuel costs – change over time, negatively affecting CHP projects’ value proposition.

#### *Timing of TRM Development Process*

CenterPoint expresses its support for the proposed near-term timing of the action item, observing that developing a CHP attribution model during 2015 and 2016 could support utilities’ CIP Triennial plans filed in 2016. “Even if a final model is not available in time for utilities to develop CHP-specific CIP offerings for inclusion in their 2017-2019 plan filings, having the model available could allow them to support CHP projects through custom rebate offerings, as well as the development of additional programs through the CIP modification process,” CenterPoint states.

Conversely, Otter Tail objects to the near-term timing of the CHP attribution methodology as part of the TRM process. “[T]he TRM revision will take considerable time from TRM[AC] members and should be the primary focus of our efforts,” the company states. “Any discussion

regarding the inclusion of CHP (waste heat recovery) in the TRM should only occur after the TRM has been finalized for 2017 triennial plans.”

*Inappropriate Process for CHP Evaluation*

Some commenters question the appropriateness of the TRM process for developing CHP project evaluation methodologies.

Minnesota Power acknowledges that TRM provides a standardized and relatively simple way to evaluate projects, but the company adds that CHP projects require a custom calculation for savings because the economics vary by site. “CHP is much more custom than prescriptive, while TRM is more prescriptive than custom,” the company states.

MRES reiterates its claim that new CHP facilities at locations without existing onsite generation are unlikely to save energy or emissions, an issue the company asserts should be resolved before “shoe-horning CHP into the existing TRM or adopting the Illinois TRM... Clear policy direction is essential to guide efforts of [Commerce] on the manner in which CHP should be evaluated.”

**C. Priority Issue: Mapping CHP Opportunities**

**Draft Action Item: Map CHP Facility-Specific Opportunities**

*The following are possible intermediate-term (2016-2017) action items that could help identify specific CHP project opportunities for implementation:*

- *Mapping CHP Opportunities at Minnesota Wastewater Treatment Facilities*
  - *Commerce was recently awarded a DOE grant to decrease energy use at Minnesota municipal wastewater facilities and scope opportunities for renewable energy generation.*
  - *As part of the project’s scope of work, Commerce will assess opportunities for CHP implementation at wastewater facilities. These facilities could serve as demonstration projects for CHP in the wastewater treatment sector and help guide the development and implementation of similar projects in the state.*
- *Mapping CHP Opportunities at Public Facilities*
  - *Stakeholders specifically indicated that examining CHP potential at public facilities would be the most useful mapping initiative to help facilitate CHP deployment in the state.*
  - *To highlight more granular, facility-level CHP opportunities in the state, Commerce intends to build off of the analysis completed by FVB Energy and assess CHP opportunities at public facilities in Minnesota.*

Most commenters generally support Commerce’s draft action items related to mapping CHP project opportunities. CenterPoint Energy states that studies focused on municipal wastewater facilities could “identify significant energy saving potential.” Fresh Energy notes that public facilities may present greater CHP opportunities due in part to their willingness to accept longer

payback periods, but the organization urges Commerce to map opportunities at commercial and industrial sectors to provide greater clarity regarding “ideal locations for CHP projects.” Ever-Green Energy urges Commerce also to prioritize higher-education campuses and other locations with existing or planned district energy systems, and also locations where CHP could provide grid benefits.

MCA observes that a primary benefit of CHP opportunity mapping may be to elevate awareness among facility owners and operators about CHP options. The organization urges Commerce to focus education and outreach efforts on the task, and specifically suggests including the task in Commerce’s priority action item relating to education and training.

GRE cautions that variability and information access regarding potential CHP sites will complicate the mapping process, compared to previous efforts focused on such resources as wind and solar energy. Xcel Energy echoes the point, stating that “Given the site-specific nature of CHP technology, it will be challenging to uniformly identify CHP resource potential.”

Minnesota Power indicates support for mapping CHP opportunities with the condition that any related costs should not be borne by utility customers. The company also notes different payback-period appetites among public-sector and private-sector customers, and expresses concern that Commerce “may attempt to model the mapping and subsequent CHP development beyond public facilities and into the private sector, where conditions are very different.”

MRES acknowledges that identifying public facilities for CHP potential “would be an appropriate point to start,” but repeats its assertions regarding the need for legislative policy direction and the need to evaluate new CHP installations differently from those that would replace or upgrade existing onsite generation systems

Otter Tail suggests the Final CHP Action Plan should include a requirement that prospective CHP host facilities must first demonstrate that “all reasonable cost-effective conservation investments have previously been made to the facility before participating in any CHP project using public funds.”

**D. Priority Issue: CHP Ownership Problems and Solutions**

**Draft Action Item: Leverage Existing Financing Programs Applicable to CHP**

*Stakeholders emphasized that access to financial assistance is critical to help advance CHP project implementation, and the following are possible near-term (2015-2016) action items that could help address this issue:*

- *Improve awareness and communication of existing financing programs that could be better leveraged to meet the individual needs of customers for CHP projects.*
- *Explore, summarize, and communicate information about existing financing programs. A summary of these programs will be included in the Final Draft of the CHP Action Plan.*

Most commenters express support for Commerce’s proposed action item related to leveraging and communicating information about existing financing programs. MRES, for example, calls the action item an “appropriate role for a state energy agency.” And Otter Tail says that existing financing programs “outside of CIP” should be explored for CHP, including both private and public funding mechanisms. Additional feedback includes the following points:

- Ever-Green Energy suggests focusing efforts on credit enhancements and “other financing strategies, such as new market tax credits.”
- Fresh Energy asserts that efforts to leverage existing financing programs should not preclude efforts to develop or implement new programs.
- GRE says identifying and leveraging existing financing programs “is a laudable goal,” and recommends incorporating it into action items related to education and training. However, the company expresses concern about Commerce efforts that advance utilities “as favorable financing mechanisms for CHP development.”

#### *Omitted Financing and Ownership Issues*

Some commenters raise questions about other issues related to financing and ownership that were omitted in the Draft CHP Action Plan.

Minnesota Power refers to the need for financing mechanisms to “help allay the risk of stranded assets if the host customers were to go out of business” or significantly reduce their energy needs. It also calls for a “regulatory solution” to allow utilities to obtain favorable cost-recovery treatment for investments in CHP assets.

MCA suggests that in addition to communicating information about existing financing programs, a useful effort would “critique these programs and consider whether changes may be required to make them work for CHP financing,” specifically regarding impediments to program access for various types of projects and owners.

The association adds that utility rebate programs are more important than financing mechanisms, in terms of supporting timely investment returns required to attract affordable capital. The association refers to related initiatives in Illinois, which were discussed during the CHP Stakeholder Engagement process, as well as a recent incentive program in Ohio, citing background material provided with its comment submission.<sup>4</sup>

MCA identifies additional ownership-related issues not addressed in the Draft Action Plan, specifically: limitations on energy sales by third-party owners and operators; uncertainties regarding utility ownership and partnering; potential stranded-asset risks; and statutory limits on the size of new fossil-fired base-load power plants.

Likewise, Xcel Energy notes that the plan omits a “regulatory structure that appropriately addresses the value of CHP, while maintaining a financially suitable model for utilities and

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<sup>4</sup> Attachment A – DP&L CHP Incentive Program Description:  
<http://mn.gov/commerce/energy/images/midwest-cogeneration-association-attachment-a.pdf>

customers.” Xcel says it would support opportunities for utility ownership or development of CHP, but that a utility mandate is not the most effective way to promote CHP deployment, which Xcel says “is by nature a customer-driven solution.”

E. **Priority Issue:** Education and Training Needs and Options

**Draft Action Item:** *Expand Education and Training Resources*

*As a possible near-term (2015-2016) action item to address gaps in CHP education and training, the Department’s CHP Stakeholder Engagement webpage could be expanded with resources that stakeholders can easily access in a centralized location. Education and training resources might include:*

• **CHP Evaluation Methodology Training and Support:**

- *CHP evaluation materials: Information, tools, and guidance to support stakeholders’ ongoing CHP development efforts.*
- *Upcoming webinars and workshops: Training to enable stakeholders to adopt and apply Minnesota’s CHP project evaluation methodologies and criteria.*
- *CHP evaluation resources: Technical resources for stakeholder efforts to evaluate CHP development opportunities.*

• **CHP Outreach and Development Support:**

- *CHP information tools and programs: Multimedia resources, case studies, and other information materials supporting stakeholder efforts to research and evaluate CHP generally.*
- *Legal and regulatory information: Practical explanation and expert guidance relating to Minnesota laws, policies, and procedures affecting CHP development.*
- *Financing resource guide: Guidance and reference information to assist stakeholders in efforts to plan and obtain financing for CHP projects.*
- *Project feasibility support: Training, guidance, and ongoing assistance for stakeholder efforts to study the feasibility of CHP projects.*

Commenters generally support the action items related to education and training support, and they provide specific recommendations for resources to include.

MCA suggests that Commerce should establish a website that highlights CHP as an energy-efficient technology, provides hyperlinks to state and federal programs and resources supporting CHP projects, and includes information about existing CHP projects in Minnesota, as well as “vetted engineering firms and project developers.”

Minnesota Power recommends including training and support for both technical and economic aspects of CHP, and proposes establishment of a “pre-screening tool and scoping procedure” to focus attention on high-priority projects.

MRES says the Division of Energy Resources is “uniquely suited to carry out the education and training function for consumers, utility customers and developers,” adding that Commerce should provide objective and equivalent treatment for information related to “non-CHP energy options, energy efficiency, and similar data.”

Otter Tail expresses support for expanding education and training resources for CHP, but specifically asks Commerce to identify what funding sources it expects to access in development of planned education materials, website expansion, outreach, and other training resources. Otter Tail notes its opposition to using CIP funds for promoting CHP.

Great River Energy states its general support for DER efforts to raise awareness of CHP among end users, but expresses doubt about real market potential. It also notes the opinion that “education and training do not present significant barriers to CHP development.” It quotes Commerce’s three identified primary gaps in market knowledge and workforce resources:

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

Among these gaps, GRE suggests that only the first is a reasonable target for Commerce’s focus – and only to the degree CHP as a “technology and strategy” suits customers’ needs. “The second two ‘gaps’ are difficult to eliminate,” GRE states. “CHP is not a plug and play system and it does require a skill set that may be different that [sic] the existing facility staff.” GRE says a CHP project represents “a significant undertaking outside of [the customer’s] core business.”

**F. Priority Issue:** Adapting CIP for Supply-Side Investments

**Action Item:** *Develop and Clarify Electric Utility Infrastructure Policy*

*As a starting point to clarify whether and how CHP could qualify as an eligible electric utility infrastructure (EUI) resource, one possible action item could be to identify and develop a set of EUI measures (including CHP) to be included in Minnesota’s TRM as well as the Energy Savings Platform Smart Measure Library.*

*In collaboration with Minnesota utilities through the TRMAC, CHP project eligibility as a EUI resource could be clarified. The table below outlines a possible timeline for a process to update the TRM:*

<b>Date</b>	<b>Deliverable</b>
<i>August 2015</i>	<i>Kick-off meeting with the Department and TRMAC</i>
<i>October 2015</i>	<i>List of potential prescriptive EUI measures delivered</i>
<i>January 2016</i>	<i>Draft of EUI measures for TRM inclusion</i>
<i>February 2016</i>	<i>Final Draft of EUI measures for TRM inclusion</i>
<i>February 2016</i>	<i>Smart Measure library complete</i>

Commenters express widely divergent views on whether CIP funds can (or should) be used to support new topping-cycle CHP projects.

Cummins asserts that CHP can serve as both a supply- and demand-side efficiency improvement, “and should be considered in CIP to stimulate both demand and supply side investments.” CenterPoint Energy states that the “existing CIP model can easily accommodate the inclusion of CHP.” The company cites models in other states and identifies “clear statutory support for including CHP in CIP. [T]he question of specifically *how* CHP projects should be incorporated remains open.”

Additionally, Great River Energy seeks clarification regarding “how a utility could avail itself of the current CHP provisions,” and advises that “[s]uch clarification could result in a greater amount of CHP development.”

#### *Timing of CIP Amendments*

*(See also III-B. “Timing of TRM Development Process”)*

Ever-Green Energy states that it agrees with the intent of “adapting CIP for supply side investments ... but recommends that it be moved up in the timeline to the near or immediate term.”

Fresh Energy adds that the TRM and Smart Measure library timelines leave little time for utilities to develop CIP programs in time for the June 1, 2016 triennial filing deadline. The organization adds, “Flexibility in proposing programs filed outside that Triennial deadline should be encouraged.”

#### *Concerns Regarding CIP Changes*

Utility industry commenters express opposition to the draft action item to amend CIP EUI provisions to support topping-cycle CHP.

Minnesota Power identifies a need for clarity on:

1. How a modified CIP program would address differences between energy conservation and generation efficiency;
2. How the program would be administered or funded; and
3. How prescriptive savings calculations would measure non-uniform, heterogeneous CHP project benefits.

Minnesota Power notes what it terms “fundamental differences” between promoting conservation and promoting generation efficiency. The company states that a CHP-specific benefits analysis tool should be developed to evaluate societal, utility, and non-participant effects.

Minnesota Power also reiterates a list of questions regarding program design, administration, and regulatory treatment. The company notes that during the CHP stakeholder engagement

process, “many parties” expressed opposition to modifying CIP to accommodate CHP projects, and that the Draft Action Plan “does not address the many concerns.”

MRES asserts that CHP can be used in CIP only where existing generation is retrofitted to recovery waste heat. Commerce “should seek a clarification from the Legislature before it marches forward to pursue the further development of CHP in the state.”

The company adds that a comprehensive approach to energy policy goals will be required to implement the U.S. EPA Clean Power Plan.

Otter Tail states that CIP only can include “waste heat recovered and used for thermal energy” as an energy conservation measure that can be included in utilities’ CIP programs. The company cites Minnesota Statute (216B.241, Subd 1, part (e)), saying that “energy conservation improvement ... does not include electric utility infrastructure projects approved by the commission under section 216B.1636.”

Otter Tail also asserts that targeted fuel switching in CIP projects is prohibited, among other things, by a deputy commissioner’s order in Docket No. G008/CIP-00-864.07. “If CHP funding in CIP is allowed, then other fuel-switching projects should be considered. This is another strong example of why CHP funding does not fit within CIP,” Otter Tail says.

Xcel Energy recommends changing the action item to state “Identify appropriate mechanisms or incentives for CHP.” The company states its position that bottom-cycle waste-heat recovery systems are consistent with CIP’s mission, but that “[t]opping-cycle CHP systems are new generation resources and should be treated as such by inclusion in a Resource Plan rather than being considered as a conservation measure.”

If supply resources are to be included in CIP, Xcel suggests that CHP should be evaluated alongside other, potentially more cost-effective supply-side options.

#### **IV. Recommendations and Next Steps**

Based on the legitimate concerns of stakeholders expressed in submitted comments, as well as issues discussed and examined during the CHP stakeholder engagement process, Microgrid Institute recommends that Commerce consider refining the Final CHP Action Plan as indicated in the notes below:

##### **A. Provide Clear Objectives and Guiding Principles**

1. Include a formal statement of purpose and objectives.
  - Such a statement will be most useful if it cites current Minnesota policy establishing Commerce authority to carry out the proposed action items.
2. Include a generic set of principles reflecting State policy interests that should guide implementation of action items.
  - Such guiding principles will be most effective if they reflect current Minnesota energy and environmental policy principles, and if they clarify those policy principles within the context of the State’s expected requirements to implement

the federal EPA Clean Power Plan.

- Key principles to consider include:

- a. Objectivity and comprehensiveness of solutions (“technology agnostic”) to ensure efficient outcomes for customers
- b. Facilitation for both utility and non-utility CHP investments
- c. Preservation of utility franchise rights and obligations
- d. Opportunity for innovation and private capital deployment

## **B. Thoroughly Describe Action Items**

1. Describe Commerce’s intent and expectations for each action item.  
- Detailed information about what each action item is intended to achieve and how action items may be carried out will help stakeholders understand the plan’s intent and implementation process.
2. Explain how action items follow applicable guiding principles.  
- In addition to providing generic definitions of guiding principles, referencing guiding principles as they relate to each action item will improve stakeholders’ understanding and ensure actions are implemented with a focus on achieving defined objectives in accordance with guiding principles.
3. Clarify how action items may obviate or address apparently omitted items.  
- Guiding principles may in some cases address perceived omissions, and in other cases action items may be clarified to explain how they address omitted items, or how they serve the equivalent need differently.

## **C. Add Action Items of Critical Interest to Stakeholders**

Some items identified as omitted in the Draft CHP Action Plan may be addressed by clarifying draft action items, or by adding new action items, developed in accord with defined guiding principles. Microgrid Institute recommends revising draft action items to include the following in the Final CHP Action Plan:

1. Study how CHP and other DG resources are treated in IRP processes, and recommend policy changes (as needed) to ensure appropriate treatment to ensure efficient outcomes for customers.
2. Review utility avoided-cost calculation methodologies and recommend policy changes (as needed) to ensure appropriate prices are paid for non-utility resources including CHP.
3. Establish contingent action item to be implemented if CIP EUI provisions are deemed inappropriate to support topping-cycle CHP investments.  
- Submitted comments and stakeholder discussions suggest an Alternative Portfolio Standard (APS) could be an effective and viable approach.

**D. Apply CHP Stakeholder Input in Comprehensive Policy Process**

Although the CHP stakeholder engagement and CHP Action Plan development processes were designed and executed to focus on a single technology, most of the identified issues and principles can be broadly applied to many technology options for serving customer needs and State policy objectives. Accordingly, Microgrid Institute recommends that Commerce take steps to ensure the inputs and outcomes from this process serve to inform and facilitate comprehensive policy updates.

During the CHP stakeholder engagement process, and especially during the Draft CHP Action Plan comment period, stakeholders have indicated strong support for facilitating CHP deployment alongside many other solutions, as part of an objective and comprehensive approach to meeting Minnesota’s energy and environmental goals. Moreover, many stakeholders have identified the federal EPA Clean Power Plan as a potential impetus for comprehensive policy development in Minnesota.

Irrespective of federal policy processes, Minnesota’s policies may require substantial updates in order to ensure that legacy policies do not prevent Minnesota customers from exploiting the benefits of new energy technologies and innovations, or hinder the State from achieving its over-arching energy and environmental policy goals. Lessons learned during the CHP stakeholder engagement process can directly serve the State’s efforts to ensure its policies are consistent with Minnesotans’ values and interests in safe, reliable, affordable, and sustainable energy services.

**E. Next Steps in CHP Action Plan Process**

Commerce expects to review submitted comments and address the comments as part of the Final CHP Action Plan in July or August 2015. Additionally, Microgrid Institute will host a second public webinar, coinciding with the release of the Final CHP Action Plan. Commerce will notify stakeholders about these next steps when they are scheduled. Further information will be provided on Commerce’s website when it becomes available.