

# **Combined Heat and Power Stakeholder Engagement Process: Training and Education Plan**

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## **Background:**

In late 2013, as part of the Energy Savings Goal Study required by the state legislature, the Minnesota Department of Commerce (“Commerce”) conducted a series of stakeholder meetings on industrial energy efficiency and combined heat and power (CHP) – including two technical work group meetings focused specifically on CHP – and delivered a report on findings and recommendations to the legislature.

In 2014, Commerce funded two CHP research projects that are specific to Minnesota. One study evaluates CHP regulatory issues and policies and develops an up-to-date analysis of CHP technical and economic potential; another study examines the effects of existing standby rates and net metering rules on CHP and waste heat to power projects.

To continue to build on Commerce’s past and current CHP work, and to focus on more specific policy details and recommendations, Commerce was awarded a U.S. Department of Energy grant to carry out a strategic stakeholder engagement process and develop an Action Plan and a Training and Education Plan. Commerce contracted Microgrid Institute to develop the Training and Education plan by identifying gaps in knowledge and skills, considering training and education options, and producing a set of recommendations to support CHP deployment in the state.

### **A. Needs and Goals**

To ensure that proposed solutions are responsive to the critical needs of market participants, Microgrid Institute gathered input and led discussion on training and education topics during the CHP stakeholder engagement process. This information is reflected in several summary reports (*see appendices*), most notably:

- Pre-Engagement Survey Report
- Post-Engagement Survey Report
- Comment Period Synthesis Report
- Meeting #4 Summary Report

Analysis of survey responses and meeting discussion content shows that stakeholders perceive three primary gaps in market knowledge and workforce resources:

- *CHP options and opportunities*: Some key stakeholder groups – most notably including prospective end-use customers – lack knowledge and understanding about CHP systems and their potential.
- *Regulatory, finance, and development issues*: CHP development processes and factors are perceived as complex and uncertain, which tends to discourage decision makers from exploring and pursuing CHP development.

- *Onsite energy staffing:* Workforce and training resources may be inadequate to support needs among prospective users of CHP and other onsite energy systems, including energy management and efficiency solutions.

To address these needs and support Minnesota’s CHP Action Plan efforts, Microgrid Institute recommends a series of training and education development steps, each of which serves one or more of the following goals:

- *Support implementation of Minnesota policies and standards*
- *Facilitate cost-efficient CHP project development*
- *Assist development of qualified CHP workforce*

Recommended action steps are categorized in three groups: CHP evaluation methodology training and support; CHP outreach and development support; and technical workforce development.

- B. **CHP Evaluation Methodology Training and Support:** Among priorities identified through the CHP stakeholder engagement process, CHP evaluation methodologies and criteria are considered critical to support project development and establish a consistent framework State policy implementation. Accordingly, training, information, and support services will be needed help support understanding and market adoption of these standard methodologies and criteria. Stakeholders express interest in various kinds of resources and programs, including training workshops, online webinars, guidelines and tutorials, and ongoing technical support.

Microgrid Institute recommends developing a comprehensive set of information, training, and support resources for stakeholders as part of the effort to establish standard evaluation methods and tools.

- i. CHP evaluation materials: Information, tools, and guidance to support stakeholders’ ongoing CHP development efforts;
- ii. Outreach webinars and workshops: Training to enable stakeholders to adopt and apply Minnesota’s CHP project evaluation methodologies and criteria; and
- iii. CHP evaluation support: Ongoing technical assistance for stakeholder efforts to evaluate CHP development opportunities. *Note:* These support resources might also serve the CHP feasibility-study support objectives described in C-v., below.

- C. **CHP Outreach and Development Support:** Stakeholders identify key knowledge gaps and resource deficiencies that hinder development of CHP projects in Minnesota. In particular, CHP development is perceived as complex and uncertain, and potential adopters lack sufficient knowledge and understanding to support effective exploration and development of CHP systems.

Microgrid Institute recommends providing a series of education resources, tools, and technical support services as part of Minnesota’s effort to encourage cost-effective CHP deployment – along with outreach and engagement programs to support ongoing development and distribution of information.

- i. CHP information tools and programs: Multimedia resources, case studies, and other information materials supporting stakeholder efforts to research and evaluate CHP generally. Stakeholders identify needs for general information about CHP technologies and projects, and specifically about Minnesota’s CHP goals, policies, initiatives, and resources;
- ii. Legal and regulatory workshops: Practical explanation and expert guidance relating to Minnesota laws, policies, and procedures affecting CHP development;
- iii. Interconnection and standby rate policy tutorials: Information and guidance to support stakeholders’ understanding of interconnection and standby rate policies in various utility territories;
- iv. Financing resource guide: Guidance and reference information to assist stakeholders in efforts to plan and obtain financing for CHP projects; and
- v. Project feasibility-study support: Training, guidance, and ongoing assistance for stakeholder efforts to study the feasibility of CHP projects. *Note:* These resources might also serve the CHP evaluation support objectives described in B-iii., above.

- D. **Technical Workforce Development:** Stakeholders identify deficiencies in Minnesota’s workforce and training resources related to onsite energy-management needs, including but not limited to expertise in CHP planning, operations, and maintenance. Microgrid Institute recommends studying these needs in greater detail and providing State guidance and support for technical training as needed to ensure availability of qualified technical professionals.

*Note:* Because CHP represents one of many solutions for serving onsite energy requirements, specific CHP workforce and training needs can be most effectively addressed in the context of broader energy-management training initiatives.

- vi. Workforce review: Empirical study to assess supply and demand for energy-management personnel and characterize workforce deficiencies;

- vii. Professional and technical education review: Survey of training and education programs, opportunities, and needs in Minnesota; and
- viii. Technical education program support: State guidance and support for institutions offering onsite energy management training and education programs. Specific objectives depend on the outcomes of efforts to study and characterize workforce needs, but may include State technical assistance and incentives for program and curriculum development.

E. **Implementation:** The training and education action steps described in this plan are interdependent with other Minnesota efforts to support deployment of CHP and other onsite energy technologies. Moreover, the timeline for implementation of most of these recommendations will depend on related CHP Action Plan efforts – especially development of CHP evaluation methodologies and criteria, as well as policies and programs.

Accordingly, Microgrid Institute recommends developing the CHP Training and Education plan as an integral part of the State’s CHP Action Plan. Further, as noted above, efforts to identify needs for technical workforce development can be most effective in the context of broader evaluation of onsite energy-management workforce and training needs. Microgrid Institute recommends considering CHP workforce needs as part of a full scope of world-class training and education resources to serve Minnesota’s energy, environmental, and economic goals.

**-END OF REPORT-**