



Partnering for Resiliency: Missouri Leads by Example in CHP for Resiliency Accelerator



Program Description

When the U.S. Department of Energy (DOE) announced the **CHP for Resiliency Accelerator** in 2016, Missouri was one of the first to join. On May 22, 2011, an EF5 tornado tore through Joplin, Missouri, killing 161, leveling homes, and inflicting catastrophic damage to utility infrastructure. The twister obliterated more than 4,000 poles, damaged 100 miles of power lines, and destroyed a substation, leaving 20,000 Joplin residents, businesses, and critical services with no power.

The CHP for Resiliency Accelerator was a two-year collaborative process designed to help states, communities, utilities, and other stakeholders faced with natural disasters to expand combined heat and power (CHP) solutions and keep critical infrastructure operational.¹ Missouri's participation in the Accelerator included a range of activities—from outreach and education to rate case intervention and development of utility CHP pilot programs and tools—all designed to accelerate CHP adoption throughout Missouri's critical infrastructure. Missouri focused its Accelerator activities on critical institutional facilities, specifically hospitals, residential care facilities, universities and colleges, and correctional facilities. The healthcare sector is a top priority, given both its critical care nature and its nearly 200 MW of CHP technical potential in Missouri.

The Missouri Department of Economic Development Division of Energy took the lead in 2016 as Missouri's "Accelerator Partner Representative." (Note: The Division of Energy is now located within the Missouri Department of Natural Resources.) Spire, Inc., the largest natural gas utility in Missouri, also later joined the program as an "Accelerator Partner."

Outreach and Education to Promote CHP Awareness: A lack of understanding of CHP and how it can "help keep the lights on" in an emergency remains a significant barrier to its deployment. The Division recognized that a robust CHP website with FAQs and links to key resources is critical to businesses and institutions that are contemplating CHP installations.²

The Division of Energy also realized it could not wait for critical infrastructure owners and operators to knock on its door—or visit its website. The Division sought opportunities to network with trade associations and potential CHP end users and to provide presentations on CHP economic and resilience benefits. The Division provided presentations on CHP and resources for project development to the Missouri Society for Healthcare Engineering, Missouri Microgrid Industrial Consortium, Statewide Natural Gas Collaborative, and Midwest Cogeneration Association. The Division also organized several forums to

CHP Summits

In 2018, the Division of Energy and Spire organized two CHP "summits" designed to educate Missouri critical facilities on CHP's benefits. The first, held in St. Charles, drew over 100 attendees and featured 8 sponsors and 13 equipment exhibitors. A similar event held in Blue Springs again had more than 100 in attendance. The speakers, sponsors, and exhibitors provided insights from direct experience with CHP systems at critical facilities and a breadth of technical resources. A presentation by Jonathan Flannery, Senior Associate Director of Advocacy for the American Society for Healthcare Engineering, highlighted the very real cost of a lack of resilience in the healthcare sector—a cost that CHP can help avoid. <https://dnr.mo.gov/energy/energy-resources/combined-heat-power-chp>

discuss CHP's resilience benefits with Missouri end users (see CHP Summits sidebar). The Division also introduced personnel from other state facilities, including the Missouri Department of Corrections, to the resilience value of CHP systems by arranging a tour and presentation at the award-winning district heating and cooling microgrid at the University of Missouri, with its 66 MW CHP system.³

Working with Utilities to Break Down Barriers to CHP: The Division of Energy also actively sought opportunities to work with utilities to break down barriers to CHP deployment. The Division negotiated an agreement with Liberty Utilities to work with the Division and DOE's Central CHP Technical Assistance Partnership (TAP) to conduct CHP feasibility screenings for targeted customers, including critical infrastructure facilities. The Division also intervened and provided testimony in several investor-owned utility rate cases before the Missouri Public Service Commission (PSC) seeking revisions to high standby charges for CHP system operators.

¹ <https://betterbuildingsolutioncenter.energy.gov/accelerators/combined-heat-and-power-resiliency>

² <https://dnr.mo.gov/energy/energy-resources/combined-heat-power-chp>

³ <https://operations.missouri.edu/facilities/utility-production>

- The Division’s intervention in a 2016 Ameren Missouri rate case culminated in an agreement for an improved standby service rider. Related workshops led to the development of an innovative calculator tool that helps customers estimate the overall reduction in their utility charges, including supplemental and standby service charges due to CHP.⁴
- In 2018, the Division intervened in a Kansas City Power & Light (KCPL) rate case, asking the Commission to require similar revisions to the KCPL standby tariff. A similar standby service tariff was negotiated and ultimately adopted by the PSC.

Developing a Framework to Incentivize CHP for Critical Infrastructure: In 2017, the Division of Energy and Spire collaborated to develop the elements of a pilot CHP incentive program (not yet approved by the PSC) that would target CHP projects supporting critical infrastructure. The proposed elements provide a framework for a future program:

- A definition of critical infrastructure from individual facilities to communities
- Budget to fund feasibility studies and production incentives for up to 10 CHP projects at critical infrastructure facilities
- Participation of both natural gas and electric utilities
- A utility cost recovery mechanism
- An option for customer on-bill financing for CHP capital improvements
- The use of a “societal cost test” to evaluate the benefits of critical infrastructure projects

Next Steps: The Division plans to maintain its momentum promoting the resilience and economic benefits of CHP and compiling CHP success stories. In 2018, Missouri also joined DOE’s Packaged CHP Accelerator program.⁵

CHP and Resilience in State Energy Planning

Completed in 2015, the Comprehensive State Energy Plan provides the Division a solid framework for promoting CHP’s benefits: resilience, energy efficiency, and enhanced economic development.⁶ The Plan includes several recommendations specific to CHP: examining CHP’s potential at current and planned state facilities, promoting public–private partnerships to develop CHP, and establishing cost-based standby rates and interconnection standards that reflect best practices for CHP.

Summary of Program Results and Outcomes

The CHP for Resiliency Accelerator and Division of Energy activities have significantly increased promotion of CHP for Missouri’s critical infrastructure. The Division’s efforts have:

- Raised the profile of CHP as a key element of the state’s critical infrastructure resilience planning
- Dramatically improved the standby service riders for the state’s two largest utilities
- Helped develop a standby bill calculator tool for sites to analyze the impact of CHP self-generation on their bills
- Helped facilitate feasibility screenings for CHP at 18 critical infrastructure sites: 9 state facilities, 8 hospitals, and 1 college
- Created a framework for a future CHP incentive program focused on critical infrastructure

Lessons To Share

- Focus on CHP’s resilience value for critical infrastructure and the institutional sector can yield greater interest in, and deployment of, CHP.
- Collaboration with utilities, trade associations, and DOE’s CHP TAP is invaluable in CHP outreach activities and program development.
- Raising CHP issues through rate cases and regulatory processes before the PSC is resource-intensive, but the effort can result in significant and lasting progress, such as improved standby service tariffs.
- Having a CHP champion in the Energy Office, as well as legal, engineering, and technical support, is a great advantage.

Resources:

Missouri Division of Energy CHP Webpage
<https://dnr.mo.gov/energy/energy-resources/combined-heat-power-chp>

CHP Summits Webpage
<https://dnr.mo.gov/energy/energy-resources/combined-heat-power-chp>

Ameren Missouri Standby Service Rider
<https://www.ameren.com/missouri/business/rates/electric-rates/rider-ssr>

Hospital CHP Guidebook
https://www.energy.gov/sites/prod/files/2013/11/f4/chp_hospital_guidebook_2007.pdf

Central CHP Technical Assistance Partnership
www.cchptap.org

For More Information

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⁴ <https://www.ameren.com/missouri/business/rates/electric-rates/rider-ssr>

⁵ <https://betterbuildingsolutioncenter.energy.gov/resources/better-buildings-packaged-chp-accelerator-partnership-agreement>

⁶ <https://dnr.mo.gov/energy/what-were-doing/comprehensive-state-energy-plan-csep>