



CHP and Power Export: Growth Opportunities for CHP In Texas

HB 2049 provides greater CHP investment opportunities by allowing sale of excess power and thermal to contiguous sites

Policy Description

Compared to much of the country, industrial customers in Texas pay a low rate for electricity.¹ The low cost of electricity makes it difficult to economically justify energy projects such as combined heat and power (CHP) and industrial energy efficiency upgrades. CHP is particularly problematic, as it is often looked to primarily for its efficiency benefits.

In 2013, the Texas legislature recognized the importance of CHP and passed HB 2049, which clarifies language in the Texas Utility Code² allowing CHP sites to sell electricity and thermal energy to multiple customers near the CHP plant. This legislation allows a plant to adopt CHP, maximizing efficiency, and to create additional revenue streams for CHP, which helps with obtaining financing and minimizes financial risk.

Quick Facts

Location: Texas
Market Sector: Industrial
Policy Type: Power Export
Geography: Statewide
Policy Start: 2013

Policy Development

A key motivation for HB 2049 was concern about power resource adequacy. This concern was driven largely by the 2011–2012 Texas drought that caused many thermoelectric plants to derate and/or power down. The threat of brownouts and blackouts resulted in calls for load shedding. These concerns over power outages drove many in industry to turn their focus to distributed energy resources, with an emphasis on CHP.

However, Texas economics for CHP can be difficult. An optimally efficient system is designed to meet the thermal load of the facility, also known as thermal matching, which often generates more electricity than the facility requires. Before HB 2049, future CHP system owners had three choices: sell excess power to the grid, operate at lower capacity, or avoid building a system with thermal matching. None of these options is ideal.

Selling power to the grid has limitations. The Public Utility Regulatory Policies Act of 1978 (PURPA)³ requires that a utility purchase excess power from a qualifying facility, but for small loads, the process for connecting to the grid and selling electricity can be difficult and sometimes is not even economically feasible. Also, the utility would likely buy the power at the wholesale or avoided cost rate, so the facility would struggle to recover investment costs. Facilities with larger systems (greater than 20 MW) may obtain access to the wholesale markets, but those markets are complex and participation in them requires a level of sophistication and effort that may not be economical or feasible.

Rather than sending power to the grid, the facility can reduce system generation. However, this significantly decreases system efficiency. With the less favorable economics, organizations often decide not to build the system—or to build a smaller system that must be supplemented with other thermal resources.

HB 2049 was drafted in response to the economic barriers to widescale CHP adoption—and to the industry groups lobbying for legislation that would improve energy system reliability and resilience. A key player in the push for HB 2049

¹ “U.S. Energy Information Administration - EIA - Independent Statistics and Analysis,” State Electricity Profiles - Energy Information Administration (U.S. Energy Information Administration, 2019), <https://www.eia.gov/electricity/state/>

² Utilities Code, Texas Constitution and Statutes (2019), <https://statutes.capitol.texas.gov/Docs/SDocs/UTLTIIESCODE.pdf>

³ Public Utility Regulatory Policies Act of 1978. PURPA also exempted QFs from the same level of burdensome regulations as were required by central station utilities. This relieved QFs from regulatory oversight under PURPA and from constraints on natural gas use imposed by the Powerplant and Industrial Fuel Use Act (FUA) of 1978.

was the Texas CHP Initiative (TX CHPI), comprising industry end users, project developers, vendors, and research institutions. Several years before the bill's passing, this organization formed to champion CHP development in Texas. TX CHPI drove the drafting and adoption of HB 2049 and played the primary role in developing a coalition to bring this bill to the legislature.

Improving Power Export Opportunities

The overall outcome of the Power Export subsection of HB 2049 is the creation of a fourth option for facilities with surplus power. The bill enabled a new pathway for increased CHP development by evaluating the limitations and barriers for CHP and expanding the ability to sell excess power to adjacent customers. The flow chart below demonstrates the current state of CHP power export in Texas, as well as the current barriers for CHP following the passage of HB 2049 and potential solutions to overcome these barriers.



For More Information

U.S. DOE SOUTHCENTRAL CHP
TECHNICAL ASSISTANCE
PARTNERSHIP (CHP TAP)
www.scchptap.org

Resources:

- [DOE Industrial Energy Efficiency and Combined Heat and Power: State of Texas Implementation Model](#)
- [Texas House Bill 2049 Power Export](#)
- [EPA CHP Policies and Incentives Database \(dCHPP\)](#)

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