During the 82nd Texas Legislature in 2011, House Bill (HB) 3268 was introduced to adopt a permit by rule (PBR) air permit for combined heat and power (CHP) systems. The Texas Commission on Environmental Quality (TCEQ) regulates air emissions under its air permit rules, and in August 2012, the TCEQ ratified Air PBR 106.513. Since the PBR’s approval, approximately 12 PBR projects have been registered and authorized.

Among the different types of air permits, PBR provides a streamlined process for air permit coverage without the need for an extensive technical review. PBR provisions and requirements are articulated in Title 30 Texas Administrative Code (30 TAC) Chapter 106.

TCEQ defines a CHP unit as “a collection of facilities and other equipment that generally consists of an Electric Generating Unit (EGU) and a means of extracting energy from the exhaust of that EGU for useful purposes other than electricity generation, such as heating or cooling. A CHP unit does not include facilities for generating additional electricity after the EGU.”

### Supplemental Firing CHP Systems and PBR

CHP systems with gas turbines may also include a burner in the turbine exhaust duct for supplemental heating. Supplemental firing provides additional heat, greater fuel efficiency, enhanced heat recovery efficiency, and operational flexibility. Supplementary firing capability enables control of steam production independent of the normal gas turbine operating mode. Preheated excess oxygen in turbine exhaust is consumed in supplemental firing, requiring less fuel than a stand-alone boiler for the same incremental increase in steam generation. A key limiting factor for the PBR initially was whether CHP systems with supplemental firing would be eligible to apply for a PBR.

While PBR 106.513 does not specifically address supplemental firing, it can be authorized under certain conditions as determined by TCEQ review. In such
situations the emissions contributions and efficiency of the duct burner can be considered together with the EGU as part of the same Emission Point Number (EPN). Low NOx combustion technologies can be utilized to reduce supplemental firing emissions. Taken together, emissions must be within the limits specified in PBR 106.513. Alternatively, the supplemental firing duct burner can be authorized by a separate PBR 106.183 for Boilers, Heaters, and Other Combustion Devices. PBR authorization for a CHP EGU system with supplemental firing can therefore be attained, either through 106.513 or 106.183 (see PBR links below).

**State of Texas Environmental Electronic Reporting System (STEERS)**

New Source Review (NSR) authorizations including PBR are submitted online through ePermits using STEERS

[https://www3.tceq.texas.gov/steers/](https://www3.tceq.texas.gov/steers/)

**Air Permitting Fact Sheet**

[https://www.tceq.texas.gov/permitting/air/guidance/permit-factsheets.html](https://www.tceq.texas.gov/permitting/air/guidance/permit-factsheets.html) for a list of all potential air permit authorizations

- CHP Units – Permit-by-Rule 106.513 Fact Sheet
  [https://www.tceq.texas.gov/assets/public/permitting/air/PermitsByRule/heat-power-factsheet.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/PermitsByRule/heat-power-factsheet.pdf)
- Air Permits-by-Rule Applicability Checklists
  [https://www.tceq.texas.gov/permitting/air/forms/permitbyrule/checklist/applicability_checklists.html](https://www.tceq.texas.gov/permitting/air/forms/permitbyrule/checklist/applicability_checklists.html)
- Rules for Air Permits-by-Rule (PBR)
  Subchapters to 30 TAC Chapter 106: Air Permits by Rule
  [https://www.tceq.texas.gov/permitting/air/nav/subchapter_index.html](https://www.tceq.texas.gov/permitting/air/nav/subchapter_index.html)
  - Rule §106.513 Natural Gas-Fired Combined Heat and Power Units
  - Rule §106.183 Boilers, Heaters, and Other Combustion Devices
    [https://www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-g/big_boilers.html](https://www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-g/big_boilers.html)
- Permits by Rule (PBR) Certification Fact Sheet

**For More Information**

- U.S. DOE SOUTHCENTRAL CHP TECHNICAL ASSISTANCE PARTNERSHIP (CHP TAP)
  Dr. Gavin Dillingham, Director
  281-216-7147
gdillingham@harcresearch.org
  [www.scchptap.org](http://www.scchptap.org)

- TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)
  Air Permits Division
  512-239-1250
  [https://www.tceq.texas.gov/permitting/air](https://www.tceq.texas.gov/permitting/air)

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