



CHP
TECHNICAL ASSISTANCE
PARTNERSHIPS

POLICY PROFILE

Texas

Air Emissions Permit by Rule

Texas Commission on Environmental Quality Streamlined Regulatory Authorization for CHP Units

Program Description & Development

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



Small Modular CHP Unit < 10 MW

PHOTO SOURCE: WHITE HARVEST ENERGY

Permit-by-Rule Quick Facts

REQUIREMENTS:

- Covers individual CHP unit or group of units up to 15 MW in capacity.
- Multiple units may be authorized if all stack emission points are within a 200-foot radius.
- Must register before construction begins (except for units <20 kW).
- The fuel is pipeline-quality natural gas, including biogas treated to pipeline standards.
- The system must capture 20% of total heat for beneficial use.
- Supplemental firing may be authorized.
- Additional conditions apply for air quality non-attainment areas.

AIR EMISSIONS LIMITS – TONS PER YEAR (TPY):

Carbon Monoxide (CO): 250 TPY

Nitrogen Oxides (NO_x): 250 TPY

Volatile Organic Compounds (VOC): 25 TPY

Sulfur Dioxide (SO₂): 25 TPY

Inhalable Particulate Matter (PM): 25 TPY

○ PM ≤ 10 microns (PM₁₀): 15 TPY

○ PM ≤ 2.5 microns (PM_{2.5}): 10 TPY

Other air contaminants: 25 TPY (except carbon dioxide, water, nitrogen, ethane, hydrogen, oxygen and, unless otherwise specified, greenhouse gases)

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 NO_x 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/>



TEXAS COMMISSION
ON ENVIRONMENTAL QUALITY

Air Permitting Fact Sheet

<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>
- Air Permits-by-Rule Applicability Checklists
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
 - Rule §106.513 Natural Gas-Fired Combined Heat and Power Units
[https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&p_g=1&p_tac=&ti=30&pt=1&ch=106&rl=513](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&p_g=1&p_tac=&ti=30&pt=1&ch=106&rl=513)
 - Rule §106.183 Boilers, Heaters, and Other Combustion Devices
https://www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-g/big_boilers.html
- Permits by Rule (PBR) Certification Fact Sheet
<https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/PermitsByRule/6244.pdf>

For More Information

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CHP Technical Assistance Partnerships
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