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Re: New Major-Source Gas-Fired Power Plants Unlawfully Permitted through Standard Permit

Dear Ms. Kaleri, Mr. McDonald and Mr. Chism:

Environmental Integrity Project and Sierra Club write to highlight that the Texas Commission on Environmental Quality (TCEQ) is permitting new gas-fired power plants through registrations for a standard air permit. At least some of these plants are major sources for Prevention of Significant Deterioration (PSD) purposes and thus cannot be approved through a standard permit. *See* 30 TAC 116.610(b). Despite claiming otherwise, at least some of these plants are also major sources of hazardous air pollutants (HAPs) and thus must meet 40 C.F.R. Part 63, Subpart YYYY's National Emission Standards for Hazardous Air Pollutants (NESHAP) for stationary combustion turbines. If new gas-fired plants that are major sources of criteria pollutants are constructed without the required Clean Air Act construction permits, that construction would be unlawful. And if new plants that are major sources of HAPs operate without complying with the relevant NESHAP, that operation would be unlawful. As discussed below in more detail, TCEQ must remedy the unlawful permitting of these plants.

A large number of new gas-fired power plants may be built in Texas over the next few years, encouraged by low-interest loans and grants offered through the Texas Energy Fund. TCEQ and EPA must ensure that these new plants are permitted in keeping with the Clean Air Act's requirements—and that any of these plants that are major sources of HAPs comply with the NESHAP for stationary combustion turbines.

I. BACKGROUND

The Texas Energy Fund (TEF)[1] is designed to provide $7.2 billion in low-interest loans and grants for building new dispatchable generation, such as gas-fired power plants.[2] On August 29, 2024, the Texas Public Utility Commission selected 17 projects totaling 9,781 megawatts (MW) to receive this taxpayer funding.[3] The Utility Commission received applications for 72 projects totaling 38,379 MW. Some of those projects that weren't selected for state funding are still planning to move forward. Although some of the projects selected for TEF funding have since left the program, the Utility Commission has replaced some of them with other projects.[4] To date, the Utility Commission has exclusively advanced TEF applications for dispatchable generation loans—totaling $5.04 billion—from gas-burning power plants.[5]

Since the beginning of 2024, TCEQ has approved the registrations for at least 24 new gas-fired power plants to use TCEQ's May 16, 2007 standard air permit for electric generating units.[6] In this letter, we discuss three of these plants in detail (plants in Nueces, Austin and Wharton Counties) —though the same problems discussed below likely apply to at least some of the 21 other plants that have been approved through the standard permit from 2024 forward.

ENGIE Flexible Generation NA LLC applied to construct and operate three gas-fired simple cycle turbines—with a total capacity of 930 MW—to be located at the "Perseus Facility" in Robstown, Texas in Nueces County. Ex. A, Perseus Application. EmberYork Energy Center LLC applied to construct and operate two simple cycle turbines—with a combined capacity of 900 MW—in Sealy, Texas in Austin County. Ex. B, Sealy Application. And EmberGreen Energy Center LLC applied to construct and operate two simple cycle turbines—also with a combined capacity of 900 MW—in Wharton, Texas in Wharton County. Ex. C, Wharton Application. These three applicants claimed to be minor sources for PSD purposes, as well as area sources of HAPs. Perseus Application at 15, 19; Sealy Application at 19, 29; Wharton Application at 19, 29.[7]

EmberYork and EmberGreen do not claim that the Sealy and Wharton plants will be "synthetic minor" sources for PSD purposes (*i.e.*, they do not claim that they will limit operating hours or other parameters to keep emissions below major source levels). In fact, EmberYork and EmberGreen have specifically disavowed being synthetic minor sources. *See* Sealy Application at 35 ("The operating scenarios represented in the [emission calculation] table . . . shall not be used to limit the maximum hours of operation, number of [startup/shutdown] events or amount of natural gas firing."); Wharton Application at 36 (stating same). Likewise, TCEQ's technical reviews of the Sealy and Wharton applications indicated that these plants will not be synthetic

[1] https://www.txenergyfund.texas.gov/
[2] https://web.archive.org/web/20250117233636/https:/www.houstonchronicle.com/business/energy/article/texas-proposition-7-ercot-power-funding-18445599.php
[3] https://interchange.puc.texas.gov/Documents/56896_49_1423702.PDF
[4] https://finance.yahoo.com/news/texas-attempt-kickstart-gas-fired-140002983.html
[5] https://interchange.puc.texas.gov/Documents/56896_74_1492231.PDF
[6] Ex. J, Table of Plants with Standard Permit. TCEQ's webpage for this standard permit is: https://www.tceq.texas.gov/permitting/air/newsourcereview/combustion/egu_sp.html
[7] All page numbers cited in this letter refer to the page numbers of the relevant PDF.

minors for PSD purposes. Ex. D-E, Sealy, Wharton Technical Reviews (noting plants are not "taking an operational limit to meet the Standard Permit"). And the Maximum Emission Rates Tables for the Sealy and Wharton plants' standard permit registrations specify that these plants may be operated 8,760 hours per year. Ex. F-G, Sealy, Wharton Permit Registrations. Although ENGIE "request[ed] to limit operational hours of the [Perseus] turbines to 2,000 hours per 12-month rolling period so that their potential to emit (PTE) for regulated New Source Review (NSR) pollutants is below the prevention of significant deterioration (PSD) major source thresholds," TCEQ's technical review also indicated that the Perseus plant was not "taking an operational limit to meet the Standard Permit." Perseus Application at 7; Ex. H, Perseus Technical Review. And the Perseus plant's standard permit registration did not limit the number of hours the facility would operate. Ex. I, Perseus Registration. Finally, none of these three applicants claimed that they would take steps to keep emissions of HAPs below major source levels.

ENGIE has since withdrawn the Perseus plant from TEF funding,[8] and we understand that the Texas Public Utility Commission recently denied TEF funding for the Sealy plant—but we have seen no indication that the companies have cancelled plans for construction of these plants.

II. AT LEAST SOME OF THESE PLANTS ARE MAJOR SOURCES FOR PSD AND THUS ARE INELIGIBLE FOR A STANDARD PERMIT.

Texas' Clean Air Act State Implementation Plan (SIP) defines "major stationary source" for PSD purposes, in relevant part, as:

> Any stationary source that emits, or *has the potential to emit*, a threshold quantity of emissions or more of any air contaminant . . . for which a national ambient air quality standard has been issued . . . [T]he major source thresholds for prevention of significant deterioration pollutants are identified in 40 Code of Federal Regulations (CFR) §51.166(b)(1).

30 TAC § 116.12(19) (emphasis added). For the Sealy, Wharton and Perseus plants, the relevant major source threshold from 40 C.F.R. § 51.166(b)(1)(i) is 250 tons/year.[9] The SIP defines "potential to emit" as:

> The *maximum capacity* of a stationary source *to emit a pollutant under its physical and operational design*. Any physical or enforceable operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or

[8] See https://www.power-eng.com/gas/turbines/long-lead-times-are-dooming-some-proposed-gas-plant-projects/

[9] Other gas-fired power plants are "[f]ossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input," and thus have a lower major source threshold of 100 tons/year. 40 C.F.R. § 51.166(b)(1)(i)(A).

> processed, may be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable.

30 TAC § 116.12(19) (emphasis added).

Applying these definitions, the Sealy, Wharton and Perseus plants are all major sources for PSD purposes, since they have the maximum capacity to emit certain criteria pollutants at rates of 250 tons/year or more. The Sealy and Wharton applications estimated that these plants would each emit 248.04 tons/year of carbon monoxide (CO) and 212.56 tons/year of nitrogen oxides (NOx), assuming 3,900 hours of annual operation (3,510 hours of "normal" operation and 390 hours of startup/shutdown operation). Sealy Application at 33; Wharton Application at 33. But these two plants both have the potential to emit CO and NOx at annual rates above the major source threshold of 250 tons/year. If these two facilities each operated just 40 hours more per year at the same rates from the applications, they would each emit 250.58 tons/year of CO. And if the Sealy and Wharton plants each operated 700 more hours annually at the same rates from the applications, they would each emit 250.71 tons/year of NOx.

Likewise, the Perseus plant would have the potential to emit CO and NOx—and also particulate matter with diameters of 2.5 micrometers and smaller and 10 micrometers and smaller (PM2.5 and PM10)—at annual rates at or above the major source threshold of 250 tons/year. The Perseus application estimated that the plant's three turbines would combined emit 135.09 tons/year of CO, 92.38 tons/year of NOx and 59.44 tons/year of PM2.5 and PM10, assuming 2,000 hours of annual operation. Perseus Application at 23. If this plant emitted CO at the same rate from the application for 3,702 hours in a year, it would emit 250.05 tons of this pollutant. If the Perseus plant emitted NOx at the application rate for 6,130 hours in a year, it would emit 250.01 tons of NOx. And if the plant emitted PM2.5 and PM10 at the application rates for 8,412 hours in a year, it would emit 250 tons of both PM2.5 and PM10.

Although the Maximum Emission Rates Tables for these plants' registrations contain annual limits that are all below major source thresholds, *see* Registrations, that does not change the fact that these plants all have the potential to emit above these limits. That is, each plant's "maximum capacity . . . to emit . . . under its physical and operational design" is above major source levels. Further, these facilities are not synthetic minor sources for PSD purposes: as noted above, the Sealy and Wharton applications specifically disavowed that these plants will be synthetic minors, and TCEQ's technical reviews of the permit registrations note that the plants will not be synthetic minor sources. Even if TCEQ or the plant owners were to now claim that these are synthetic minor sources, the standard permit here and the facilities' registrations to use that permit do not contain conditions sufficient to ensure that these plants' emissions will stay below major source levels. For example, the standard permit[10] and the registrations do not contain annual emission limits that roll monthly or limit the number of operating hours or throughput, which would be needed to ensure that these sources emit below the major source

[10] The standard permit itself is available here: https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Combustion/egu_final_spermit.pdf

threshold.[11] Nor do the permit and registrations list specific monitoring requirements for CO, NOx or PM, much less monitoring requirements sufficient to ensure that the major source threshold is not crossed.[12] This problem is compounded by the fact that the Sealy and Wharton applications note that additional emissions from these facilities will be permitted through later permitting actions[13]—meaning that the standard permit registrations discussed here do not take into account all emissions from these plants, and thus cannot possibly ensure that those emissions stay below major source levels.[14]

Because these plants are major sources, they cannot be permitted through standard permits. TCEQ's regulations specifically provide:

> Any project that constitutes a new major stationary source . . . as defined in §116.12 of this title (relating to Nonattainment and Prevention of Significant Deterioration Review Definitions) because of emissions of air contaminants other than greenhouse gases is subject to the requirements of §116.110 of this title (relating to Applicability) rather than this subchapter [covering standard permits].

30 TAC § 116.610(b).[15]

Approving these new major sources through standard permitting means that these permits unlawfully fail to comply with PSD requirements—including the requirements that emission limits reflect the Best Available Control Technology and that permittees evaluate air quality impacts to ensure that their facilities will not cause exceedances of National Ambient Air Quality Standards. *See, e.g.*, 42 U.S.C. § 7475(a) (Clean Air Act's requirements for PSD permits); 40 C.F.R. § 51.166(j)-(r) (EPA's regulatory requirements for PSD permits). Additionally, permitting these new major sources through standard permitting also unlawfully prevents the public from weighing in on the permits for these plants. *See* 42 U.S.C. § 7475(a)(2) (requiring, for PSD permits, a public hearing "with opportunity for interested persons . . . to appear and submit written or oral presentations"); 40 C.F.R. § 51.166(r) (requiring notice and opportunity to comment and attend a hearing on PSD permits). Here, the public had no opportunity to weigh in

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[11] *See In the Matter of Hu Honua Bioenergy, LLC*, Order on Title V Petition No. VI-2014-10 (Sept. 14, 2016) ("Hu Honua Order") at 20 ("Although it is generally preferred that PTE limitations be as short-term as possible (e.g., not to exceed one month), EPA guidance allows permits to be written with longer term limits if they are rolled (meaning recalculated periodically with updated data) on a frequent basis (e.g., daily or monthly).") (citation, punctuation omitted).

[12] See *id.* at 20 (synthetic minor limits "must be supported by monitoring, recordkeeping, and reporting requirements sufficient to enable regulators and citizens to determine whether the limit has been exceeded and, if so, to take appropriate enforcement action") (citation, punctuation omitted).

[13] *See* Sealy Application at 32-33 ("The site may include auxiliary sources to be authorized via Permit-by-rule (PBRs) in the future which will be reflected when they are required."); Wharton Application at 32-33 (stating the same).

[14] *See* Hu Honua Order at 20 ("[T]o to effectively restrict a facility's PTE under the relevant major stationary source threshold, a permit's emission limits must apply at all times to all actual emissions, and all actual emissions must be considered in determining compliance with the respective limits.").

[15] 40 C.F.R. § 52.2270(c) states: "30 TAC Section 116.610(b) is SIP-approved as adopted by the State as of 11/20/2002."

on these plants' registrations to use a standard permit. In fact, TCEQ approved the Perseus registration to use the standard permit the same month that ENGIE submitted its application, approved the Sealy registration five days after the Sealy application was submitted and approved the Wharton registration the day after that application's submittal. *See* Applications, Permit Registrations.

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III. AT LEAST SOME OF THESE PLANTS ARE MAJOR SOURCES OF HAPS.

A major source of HAPs is any source "that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants." 42 U.S.C. § 7412(a)(1). The Sealy, Wharton and Perseus plants are major sources of HAPs because they have the potential to emit 10 tons/year or more of formaldehyde, which is a listed HAP under Clean Air Act § 112. *Id.* § 7412(b)(1).

The Sealy and Wharton applications estimated that these plants would each emit 5.78 tons/year of formaldehyde, assuming 3,900 hours of annual operation and hourly emissions of 2.97 lb/hr. Sealy Application at 36; Wharton Application at 37. To begin with, the emission factor for formaldehyde in the Sealy and Wharton applications (7.10E-04 lb/mmBtu) is too low. *See id.* That emission factor is from EPA's AP-42 emission factors, Table 3.1-3. Footnote b to Table 3.1-3 states that the emission factor is only for units operating at "high loads" (greater than or equal to 80% load) and states that "[f]or information on units operating at other loads, consult the background report for this chapter." The background report includes Table 3.4-1, which lists emission factors for "All Loads" and for "High Loads: Greater than or Equal to 80 Percent." The emission factor for formaldehyde is significantly higher for the All Loads scenario—3.12 E-03 lb/mmBtu for uncontrolled gas turbines (i.e., without oxidation catalyst controls). In fact, the All Loads emission factor is 4.4 times higher than the High Loads emission factor.

The Sealy and Wharton applications acknowledge there will be times when the plants will operate at less than 80% of the rated load—and that there will be multiple operating scenarios with various loads and ambient temperatures. Sealy Application at 28, 34; Wharton Application at 28, 35. If the Sealy and Wharton plants each operated at less than 80 percent of load for 3,900 hours (the number of total operating hours from each application), calculating formaldehyde emissions using the All Loads emission factor would yield 20.31 tons/year.[16]

Even calculating formaldehyde emissions using the inaccurate High Load emission factor used in the Sealy and Wharton applications still shows that these plants have the potential to emit formaldehyde at major source levels. If these two plants emitted at the hourly application rate of 2.97 lb/hr for 6,735 hours, they would each emit 10 tons/year of formaldehyde. Again, the standard permit and these plants' registrations to use that permit do not limit the number of operating hours in any given year; these plants' registrations allow them to operate every hour of the year.

[16] (4,177.80 mmBtu/hr * .0799) * (3.12e-03 lb/MMBtu) * (1 ton / 2000 lb) * (3,900 hr / yr) = 20.31 tons/year. 4,177.80 mmBtu is the maximum fuel input rate listed in the applications. Sealy Application at 36; Wharton Application at 37.

The Perseus plant also would have the potential to emit 10 tons/year or more of formaldehyde. In its application, ENGIE estimated that the Perseus plant would emit 1.97 tons/year of formaldehyde, assuming 2,000 hours of annual operation and using an emission factor based on a formaldehyde limit of 91 ppbvd (at 15-percent O2) from the NESHAP for stationary combustion turbines. *See* Perseus Application at 23; 40 C.F.R. Part 63, Subpart YYYY, Tbl. 1. But ENGIE had no basis for assuming that the plant would emit such a low level of this HAP: the application, standard permit and permit registration did not indicate that the facility would be subject to Subpart YYYY or meet that subpart's formaldehyde limit of 91 ppbvd, and ENGIE did not indicate that it would use any controls or take other measures to limit formaldehyde emissions. Using emission factors from AP-42, the Perseus plant would have the potential to emit over 10 tons/year of formaldehyde.

Because the Sealy, Wharton and Perseus plants are major sources for HAPs, they are subject to NESHAP Subpart YYYY. But the standard permit and these plants' registrations fail to comply require compliance this subpart. Other facilities among the gas plants that have registered to use the standard permit are likely also major sources of HAPs, but we have not yet analyzed this.

IV. TCEQ MUST FIX THESE PROBLEMS.

TCEQ must not permit future similar gas-fired power plants through standard permitting, for all the reasons discussed above. TCEQ must also remedy the unlawful permitting of the Sealy, Wharton and Perseus plants—and any of the other gas plants with standard permit registrations that are major for PSD (or nonattainment major NSR) and HAPs. First, TCEQ must revoke the standard permit registrations for these plants. Then, TCEQ must re-permit the Sealy, Wharton and Perseus facilities (and any other major facilities that have improperly been approved through the standard permit)—either following the PSD requirements from 42 U.S.C. § 7475(a) and 40 C.F.R. § 51.166(j)-(r) for major sources, or by permitting the plants as synthetic minor sources for PSD purposes. Either way, TCEQ must provide notice and comment for the permitting of these facilities, to allow the public to weigh in on these permits.

If TCEQ permits these plants as synthetic minor sources, the permits must: contain monitoring requirements for CO, NOx, PM2.5 and PM10 sufficient to ensure that the plants do not cross the major source threshold; contain, at the least, annual emission limits (below the major source threshold) that roll monthly and/or limit the number of operating hours or throughput; and take into account all emissions from these plants. While the applications for the Sealy and Wharton plants stated that they will use continuous emission monitors for CO and NOx,[17] the permits must actually require that these monitors be used (they currently do not). The permits must also specify how emissions will be monitored when the continuous monitors are not working.

Finally, TCEQ must require the Sealy, Wharton and Perseus plants (and any other new gas-fired power plants that are major sources of HAPs) to comply with the NESHAP from 40 C.F.R. Part 63, Subpart YYYY—or include, in the permits for these plants, enforceable

[17] *See* Sealy Application at 16; Wharton Application at 16.

limitations (including, but not limited to, limits on annual hours operated) to ensure that the plants do not exceed the major-source threshold for HAPs.

We would welcome the opportunity to meet (virtually) with the appropriate staff from EPA Region 6 and TCEQ to discuss these problems. If Region 6 and TCEQ are willing to meet with us, please contact Patton Dycus to schedule a meeting. His contact information is listed below.

Thank you.

Sincerely,

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