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July 31, 2012

VIA Hand Delivery

Bridget C. Bohac, Chief Clerk
Texas Commission on Environmental Quality
12100 Park 35 Circle
Building F, 1st Floor
Austin, Texas 78753

RE: Topaz Power Group, LLC - Appeal of July 10, 2012 Negative Use Determination of Application Numbers 12210 and 12211

Dear Ms. Bohac:

We are in receipt of the Executive Director's letter dated July 10, 2012 notifying the Applicant of a negative use determination (the "***Determination***") on its application No. 12268 (the "***Application***")

I. Procedures For Appeal

Applicant disagrees with the Determination and pursuant to 30 TAC 17.25 hereby provides:

(1) the name, address, and daytime telephone number of the person filing the appeal is:

Mike Nasi
Jackson Walker L.L.P.
100 Congress Ave., Ste. 1100
Austin, Texas 78701
512-236-2216

As legal counsel to:

Topaz Power Group, LLC

100 Congress Avenue, Suite 1100 • Austin, Texas 78701 • (512) 236-2000 • fax (512) 236-2002

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(2) the name and address of the entity to which the use determination was issued:

Topaz Power Group, LLC
Barney Davis Power Plant
4301 Waldron Rd.
Corpus Christi, Texas

Topaz Power Group, LLC
Nueces Bay Power Plant
2002 Navigation Road
Corpus Christi, Texas

(3) the use determination application numbers for the Application was:

12210 and 12211

(4) request Commission consideration of the use determination:

Applicant respectfully requests that the Commission sustain the Applicant's appeal of the negative use determination and remand the matter to the Executive Director with instructions to revisit the pollution control aspects of the subject property.

(5) The basis for the appeal is set forth in full in the attached brief.

Sincerely,

for Michael J. Nasi,
Counsel for Topaz Power Group, LLC

TCEQ DOCKET NO. _____

APPEAL OF NEGATIVE USE	§	**TEXAS COMMISSION**
	§	
DETERMINATION ISSUED TO	§	**ON**
	§	
TOPAZ POWER GROUP, LLC	§	**ENVIRONMENTAL QUALITY**

APPEAL OF NEGATIVE USE DETERMINATION ISSUED TO TOPAZ POWER GROUP, LLC

Topaz Power Group, LLC ("***Applicant***" or ***"Topaz"***) files this appeal of the negative use determination issued by the Executive Director on July 10, 2012. For the reasons articulated below, the Applicant respectfully requests that the Commission sustain the Applicant's appeal of the negative use determination and remand the matter to the Executive Director with instructions to revisit the pollution control aspects of the subject property.

Part I of this brief provides a brief background of the Pollution Control Property Program; Part II describes the procedural background of the application; Parts III-VI detail the Applicant's argument why the negative use determination is a misapplication of Texas law, is based on policy concerns outside of the Agency's purview, and is founded on a defective technical evaluation.

Summary of Argument

This is an appeal of a negative use determination. Therefore, quite simply, the only question before the Commission in considering this appeal is not whether an exact percentage is appropriate - the Commissioners need only evaluate whether ***any*** percentage above zero is appropriate. As set forth fully herein, applicable law, prior precedent, and the record in this case demand that a a number above zero be used and a positive use determination be issued. Thus, this appeal should be granted and this matter should be remanded back to the Executive Director for a determination that the property in question is eligible for a positive use determination.

I. Program Background

On November 2, 1993, Texans approved Proposition 2 amending the Texas Constitution to provide tax relief for pollution control property. This amendment added §1-1 to the Texas Constitution, Article VIII, which states:

> (a) The legislature by general law may exempt from ad valorem taxation all or part of real and personal property used, constructed, acquired, or installed wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the

> United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution.
>
> (b) This section applies to real and personal property used as a facility, device, or method for the control of air, water, or land pollution that would otherwise be taxable for the first time on or after January 1, 1994.

In response to the constitutional amendment, the Texas Legislature added Texas Tax Code, §11.31, Pollution Control Property ("***§11.31***"). The statute establishes a process where applicants submit Applications for Use Determination to the Executive Director of the TCEQ to determine whether the property is used wholly or in part for pollution control.[1] The Executive Director's role is limited by § 11.31 to the specific task of conducting a technical evaluation to determine whether the equipment is used wholly or partly for the control of air, water, or land pollution,[2] and does not include any evaluation of the merit of the tax exemption itself or tax policy implications of granting positive or negative use determinations.

The tax appraisal district where the Pollution Control Property will be installed/constructed is the entity charged with actually granting the tax exemption. If an applicant obtains a positive use determination from the Executive Director, the applicant must then submit another application with the local appraisal district to receive the tax exemption for the pollution control property.

In 2001, the Legislature passed House Bill 3121, which amended §11.31. These amendments included providing a process for appealing the Executive Director's use determinations.[3] House Bill 3121 also required the Commission to adopt rules that establish specific standards for the review of applications that ensure determinations are equal and uniform,[4] and to adopt rules to distinguish the proportion of property that is used to control pollution from the proportion that is used to produce goods or services.[5]

In 2007, §11.31 was amended again with the passage of House Bill 3732, which required the Commission to adopt a list of equipment that is considered pollution control property, including the equipment listed in §11.31(k). In adopting rules for the implementation of House Bill 3732, the TCEQ created a Tier IV application for the categories of listed equipment. For Tier IV applications, the Executive Director must determine the proportion of the equipment used for pollution control and the proportion that is used for production. The application that is the subject of this appeal is a Tier IV application.

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[1] TEX. TAX CODE § 11.31(c) and (d).

[2] TEX. TAX CODE § 11.31(c).

[3] TEX. TAX CODE § 11.31(e).

[4] TEX. TAX CODE § 11.31(g)(1) and (g)(2).

[5] TEX. TAX CODE § 11.31(g)(3).

II. Procedural Background

On April 23, 2008, the Applicant filed two Tier IV Applications for Use Determination for Pollution Control Property with the Executive Director for two Heat Recovery Steam Generators ("HRSGs") to reduce air emissions at the Barney Davis and Nueces Bay power plants (See Attachments A and B). The Executive Director failed to take any action on these applications for over four years. At some point during those four years, the Executive Director conducted a technical review of the applications and on July 10, 2012 issued a negative use determination for the 12 HRSGs and 4 steam turbines, stating that "[h]eat recovery steam generators and steam turbines are used solely for production; therefore, are not eligible for a positive use determination." (See Attachment C).

The Executive Director has received approximately thirty-eight similar applications for HRSGs and associated equipment installed at combined-cycle electric generation facilities. The Executive Director issued 100 percent positive use determinations for twenty-six of the HRSG applications, leaving twelve applications pending. Six of the positive use determinations were appealed by local taxing units. The applications at issue in this appeal were two of the applications left pending by the Executive Director. On July 10, 2012, the Executive Director issued negative used determinations for all of the pending HRSG applications as well as the six applications that were appealed.

III. Executive Director Failed to Comply with the Timeline in Texas Tax Code § 11.31(m) for Review of Application

In 2007, the Texas Legislature passed House Bill 3732, which amended Texas tax Code § 11.31. Specifically, House Bill 3732 added subsections (k) and (m). Subsections 11.31(k) and (m) direct that the Commission "shall determine" that "heat recovery steam generators" are "used wholly or partly" as qualifying pollution control property. There is no option under the statute for TCEQ to determine that equipment listed in 11.31(k) is not pollution control equipment. When the Legislature added subsection 11.31(k) in 2007, the purpose was to list equipment that was predetermined to be pollution control equipment and the only evaluation that needed to occur was to determine the percentage of the equipment that qualified as pollution control property. The question is not "whether the equipment is pollution control property", but instead should be "how much is pollution control property."

Furthermore, under Texas Tax Code § 11.31(m), the Executive Director "shall" review applications for equipment listed under § 11.31(k) and make a determination whether the equipment is wholly or partly pollution control property within 30 days. Furthermore, the statute states that the Executive Director "shall" take action on that determination and notify the applicant and the appraisal district of the determination. Thus, the Executive Director must review and issue a use determination within 30 days for those applications which were submitted after House Bill 3732 became effective, and which include equipment that is listed under Texas tax Code § 11.31(k).

As indicated earlier, the Executive Director received Topaz' two applications on April 23, 2008. Despite the statute's clear requirement that the Executive Director act within 30 days

on applications for equipment listed under § 11.31(k), in this instance, the Executive Director waited over three years from the time the application was submitted to make a determination. By failing to act within 30 days, the Executive Director violated the statutory requirements of Texas Tax Code § 11.31(m) and effectively prevented the Applicant from receiving a tax exemption for which it met all of the statutory requirements.

IV. Texas Tax Code Requires Consistency

a) The Executive Director's Use Determination Violates the Equal and Uniform Tax Mandate in Texas Constitution art. VIII, Section 1(a).

In Texas, all taxation must be equal and uniform. Tex. Const. art. VIII, Section 1(a).[6] The Texas Constitution's equal and uniform standard is strikingly incorporated into Section 11.31:

> "(d) The commission shall adopt rules to implement this section. Rules adopted under this section must . . . (2) be sufficiently specific ***to ensure that determinations are equal and uniform*** . . ."

The constitutional mandate requires that a tax must treat taxpayers within the same class alike, and that any classifications must not be unreasonable, arbitrary, or capricious.[7] The standard for determining equal and uniform taxation is a two-part test: "(1) whether the tax's classification is reasonable; and (2) whether, within the class, the legislation ***operates equally***" [8]

A tax cannot satisfy the second prong of the equal and uniform standard unless the value of the tax base is ascertained by the same standard for all taxpayers within each class.[9] ("The standard of uniformity prescribed by the Constitution being the value of property, taxation can not be in the same proportion to the value of the property, unless the value of all property is ascertained by the same standard."). In other words, when taxing value (i.e., the tax base), the Legislature may not say that the same economic value is more for some taxpayers than it is for other taxpayers.

In the instant case the Commission has granted 100% exemption for heat recovery steam generator systems that are substantively identical to Applicant's to approximately 20 other taxpayers. There has been no reasoned justification for the distinction based on any alleged differences in design or use or location of the equipment. The negative use determination made against Applicant is arbitrary in that there is no substantive distinction between the use or

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[6] The Article VIII, Section 1 of the Texas Constitution provides: "Taxation shall be equal and uniform. (b) All real property and tangible personal property in this State, unless exempt as required or permitted by this Constitution, whether owned by natural persons or corporations, other than municipal, shall be taxed in proportion to its value, which shall be ascertained as may be provided by law."

[7] *Hurt v. Cooper,* 110 S.W.2d 896, 901 (Tex. 1937).

[8] *R.R. Comm 'n of Tex. v. Channel Indus. Gas,* 775 S.W.2d 503, 507 (Tex. App.—Austin 1989, writ denied) (*emphasis added*).

[9] *Lively v. Missouri, K. & T. Ry.,* 120 S.W. 852, 856 (Tex. 1909).

pollution reducing benefit of the HRSGs and the multiple other applicants whose systems have been granted 100% positive use determinations by the Commission. Such random enforcement causes 11.31 to operate unequally and in direct violation of the equal and uniform tax mandate.

b) The Commission Does Not Have Authority to Make a Negative Use Determination Under Section 11.31 of the Texas Tax Code

Subsections 11.31(k) and (m) direct that the Commission "*shall determine*" that "heat recovery steam generators" and "enhanced steam turbine systems" are "used wholly or partly" as qualifying pollution control property. Tex. Tax Code Section 11.31(k) & (m).

The Determination's negative use finding is facially and patently in violation of the Texas Tax Code.

The application requested a 100 percent positive use determination that the Applicant's HRSGs and steam turbines are used in accordance with the following statutory standard set forth in Section 11.31[10] of the Texas Tax Code:

> "A person is entitled to an exemption from taxation of all or part of real and personal property that the person owns and that is used ***wholly or partly as a facility, device, or method for the control of air, water, or land pollution.***"
>
> In this section, "facility, device, or method for the control of air, water, or land pollution" means land that is acquired after January 1, 1994, or any structure, building, installation, excavation, machinery, equipment, or device, and any attachment or addition to or reconstruction, replacement, or improvement of that property, that is used, constructed, acquired, or installed ***wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution.***"

The Application and Attachment D hereto establish the factual basis that the HRSGs and associated equipment qualify as a ***device, or method for the control of pollution.***

Despite the clear factual record that HRSGs and steam turbines control pollution, the Determination summarily finds, without explanation or substantive reasoning, that the HRSGs

[10] Section 11.31 of the Texas Tax Code is authorized by Article VIII, Section l-1 of the Texas Constitution, which provides: "(a) The legislature by general law may exempt from ad valorem taxation all or part of real and personal property used, constructed, acquired, or installed wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution. (b) This section applies to real and personal property used as a facility, device, or method for the control of air, water, or land pollution that would otherwise be taxable for the first time on or after January 1, 1994. . . . (Added Nov. 2, 1993.)"

and steam turbines will be subject to a negative use determination because it is "used solely for production." The facts do not support the Determination, and there is no reasonable interpretation of Section 11.31 that would support the Determination.

Section 11.31 must be construed to give effect to the Legislature's intent.[11] An agency or court should first attempt to determine this intent from the actual language used by the Legislature. That is, an agency or court should first look to the plain, ordinary meaning of the statute's words.[12] Most importantly, "[i]f a statute is clear and unambiguous, [the courts] apply its words according to their common meaning without resort to rules of construction or extrinsic aids."[13] This is true even when the agency charged with enforcing the statute seeks to apply a different construction.[14]

Further, Texas Attorney General Opinion JC-0372 (2001) has expressly opined to the Chair of the Texas Natural Resource Conservation Commission that "methods of production" can and do qualify as exempt pollution control property:

> "Section 11.31 is ***broadly written, and we believe its plain meaning is clear***. It embraces any property, real or personal, "that is used wholly or partly as a facility, device, or method for the control of air, water or land pollution. . . ." (*emphasis added*).
>
> "Next, we consider whether section 11.31 excludes from its scope pollution-reducing ***production*** equipment. Significantly, the statute applies to property used "wholly or partly" for pollution control. See id. § 11.31(a). To qualify for the exemption, property must be used "wholly or partly" to meet or exceed environmental rules. See id. § 11.31(b). The term "wholly" clearly refers to property that is used only for pollution control, such as an add-on device. See Merriam Webster's Collegiate Dictionary 1351 (10th ed. 1993) (defining "wholly" to mean "to the full or entire extent: ... to the exclusion of other things"). ***The term "partly," however, embraces property that has only some pollution-control use***. See id. at 848 (defining "partly" to mean "in some measure or degree"). This broad formulation clearly embraces more than just add-on devices. ***Furthermore, that statute clearly embraces not only "facilities" and "devices" but also "methods" that prevent, monitor, control, or reduce pollution. "Methods" is an extremely broad term that clearly embraces means of production designed, at least in part,***

[11] *See* TEX. GOV'T CODE § 312.005; *Gilbert v. El Paso County Hosp. Dist.*, 38 S.W.3d 85 (Tex. 2001).

[12] *See* TEX. GOV'T CODE § 312.002(a); *Am. Home Prods. Corp. v. Clark*, 38 S.W.3d 92, 95-96 (Tex. 2000); *Crimmins v. Lowry*, 691 S.W.2d 582, 584 (Tex. 1985).

[13] *In Re Nash*, 220 S.W.3d 914, 917 (Tex. 2007) (emphasis added).

[14] *See Pretzer v. Motor Vehicle Bd.*, 138 S.W.3d 908, 914-15 (Tex. 2004); *Barchus v. State Farm Fire & Cas. Co.*, 167 S.W.3d 575, 578 (Tex. App.—Houston [14th Dist.] 2005, pet denied).

to reduce pollution. See id. at 732 (defining "method" to include "a way, technique, or process of or for doing something").

The HRSGs and steam turbines are clearly used to comply with environmental laws and to control pollution and qualify for exemption under any valid rule or convention of statutory construction.

c) Failure To Comply With Commission Rules and the Texas Administrative Procedures Act.

The Commission cannot arbitrarily and capriciously create and enforce a new internally derived formula for heat recovery steam generators resulting in a drastic increase in the amount of property taxes assessed against Applicant, without, at the very least,[15] adhering to the Texas Administrative Procedure Act (the "APA").

In brief, the APA requires state agencies to follow certain formal procedures before adopting and applying any "rule."[16] Among other requirements, the APA requires state agencies to provide notice of any intent to promulgate a new rule, to publish the contemplated new rule, and to invite public comment with respect to the new rule.[17] As the Texas Supreme Court explained: "In this way, the APA assures that the public and affected persons are heard on matters that affect them and receive notice of new rules."[18]

In addition to the APA requirements regarding the procedures that must be applied by state agencies when adopting and applying any "rule," Texas courts frequently require that an agency explain its reasoning when it "appears to the reviewing court that an agency has departed from its earlier administrative policy or there exists an apparent inconsistency in agency determinations." By issuing a 100 percent use determination and ultimately issuing a negative use determination, the TCEQ Executive Director's staff has departed from its earlier policy with regard to the evaluation of HRSGs. Furthermore, as explained earlier, TCEQ has issued 100 percent use determinations for other HRSGs, but issued negative use determinations for those applications that were appealed. In doing so, the TCEQ provided a one sentence explanation stating, "[HRSGs] are used solely for production and, therefore, are not eligible for a positive use determination."

In this case the Commission clearly failed to follow the procedures of the Texas APA in reaching and applying its interpretation of Section 11.31(k) and (m) of the Texas Tax Code. Because the Commission failed to promulgate any rule or other formal statement expressing its

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[15] And subject to the statutory arguments set forth below.

[16] The APA defines the term "rule" to mean "a state agency statement of general applicability that... implements, interprets, or prescribes law or policy." Tex. Gov't Code § 2001.003(6).

[17] *See Rodriguez v. Service Lloyds Ins. Co.*, 997 S.W.2d 248, 255 (Tex. 1999), *reh'g of cause overruled* (Sept. 9, 1999); *see also* Tex. Gov't Code § 2001.004(2) (additionally requiring agencies to "index, cross-index to statute, and make available for public inspection all rules and other written statements of policy or interpretations that are prepared, adopted, or used by the agency in discharging its functions").

[18] *Id.*

new interpretation of Section 11.31(k) and (m) of the Texas Tax Code, its interpretation violates the APA and must be disregarded.

Further, the Determination appears to represent a sea change in the Commission's interpretation of Section 11.31 without any change to its Section 11.31 rules. The Commission's attempt to make a material change in policy retroactively without compliance with the APA is an invalid rule under the APA under the analysis in *El Paso Hospital District v. Texas Health and Human Services Commission*, 247 S.W.3d 709 (Tex. 2008).[19]

In *El Paso Hospital District,* the Texas Health and Human Services Commission ("HHSC") adopted a regulation that established a "base year" for gathering claims data to be used in setting certain Medicaid hospital payment rates. . Several hospitals sought a declaratory judgment that the cutoff rule was invalid under the APA, because HHSC did not adopt the rule in accordance with the APA. HHSC argued that the cutoff date was not a rule itself but rather an interpretation of a rule. The Texas Supreme Court held that the agency-applied cutoff date was an invalid rule because the agency did not follow the proper rule-making procedures contained in the APA. The Texas Supreme Court stated:

> "HHSC argues that it complied with these statutes, and that the February 28 cutoff is not a rule itself, but rather its interpretation of the base-year rule. The Hospitals disagree, arguing the February 28 cutoff falls squarely within the APA's definition of a rule. We agree with the Hospitals. Under the APA, a rule: (1) is an agency statement of general applicability that either "implements, interprets, or prescribes law or policy" or describes [HHSC'S] "procedure or practice requirements;" (2) "includes the amendment or repeal of a prior rule;" and (3) "does not include a statement regarding only the internal management or organization of a state agency and not affecting private rights or procedures." TEX. GOV'T CODE §2001.003(6)(A)-(C). *El Paso Hospital District* at 714.

The Commission's new internal formula or reasoning that resulted in the Determination interprets or prescribes law or policy and amends or repeals positions previously applied by the Commission.

The violation of APA requirements is especially egregious in this case given that Section 11.31(l) of the Texas Tax code mandates that the TCEQ, "by rule shall update the list adopted under Subsection (k)" and then makes clear that "[a]n item may be removed from the list if the commission finds compelling evidence to support the conclusion that the time does not provide pollution control benefits." No APA rulemaking procedure has been followed to remove HRSGS or enhanced steam turbine systems from Section 11.31(k) and it is inconceivable how the TCEQ could find that "compelling evidence exists to support the conclusion that [HRSGs] do not provide pollution control benefits."

[19] *El Paso Hospital District v. Texas Health and Human Services Commission*, 247 S.W.3d 709 (Tex. 2008).

V. The Record Supports a Positive Use Determination and Clearly Contradicts a Negative Use Determination

a) Pollution Control Property

The only question before the Commission in considering this appeal is not whether an exact percentage is appropriate - the Commissioners need only evaluate whether ***any*** percentage above zero is appropriate. The Applicant's HRSGs can be defined as pollution control property based on the prevention of NOx emissions from natural gas use efficiencies. Under Tax Code § 11.31(a), "[a] person is entitled to an exemption from taxation of all or part of real and personal property that the person owns and that is used wholly or partly as a facility, device, or method for the control of air, water, or land pollution." (emphasis added). The statute defines "a facility, device, or method for the control of air, water, or land pollution" as:

> "[a] structure, building, installation excavation, machinery, equipment or device, and any attachment or addition to or reconstruction, replacement or improvement of that property, that is used, constructed, acquired, or installed wholly or partly to meet or exceed rules or regulations adopted by any environmental protection agency of the United States, this state, or a political subdivision of this state for the prevention, monitoring, control, or reduction of air, water, or land pollution."

Thus to qualify as pollution control property, the equipment or structure must control pollution and must meet or exceed applicable environmental protection regulations.

b) Method of Pollution Control

The use of otherwise wasted heat in the turbine exhaust gas within the HRSG results in higher plant thermal efficiency (net power output of the plant divided by the heating value of the fuel), compared to other power generation technologies. A plant incorporating a combined cycle design emits less NO_x per pound of fossil fuel combusted due to the incorporation of both the Brayton and Rankine Thermodynamic cycles within plant design operations

Specifically, the equipment's increased thermal efficiency, as compared to a traditional steam boiler unit, reduces the fuel needs for the same power outputs, while emitting no additional air emissions. It is important to note that the lower fuel consumption associated with increased fuel conversion efficiency not only reduces NOx emissions, but also reduces emissions of hazardous air pollutants and greenhouse gas emissions such as CO_2.

c) HRSGs are Used to Meet Certain New Source Performance Standards for Electric Generating Facilities

As cited in the Application, Title 40 of the Code of Federal Regulations ("CFR") subpart 60.44Da establishes New Source Performance Standards ("NSPS") for emissions of air contaminants for electric utility steam generating facilities.

Subpart §60.40Da(e)(1) specifically lists HRSGs as subject to the NSPS requirements in 60.44Da, stating:

> (i.e. heat recovery steam generators used with duct burners) associated with a stationary combustion turbine that are capable of combusting more that 73 MW (250MMBtu/H) heat input of fossil fuel are subject to this subpart except in cases when the affected facility (i.e. heat recovery steam generator) meets the applicability requirements of and is subject to subpart KKKK of this part..

Therefore, Applicant's four HRSGs are subject to the performance standards for air emissions as established within the Subpart Da. Specifically, they are subject to Section 60.44Da Standards for nitrogen oxides (NO_x) which states:

> Except as provided in paragraph (h) of this section, on and after the date on which the initial performance test is completed or required to be completed...no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility for which construction...commenced before July 10, 1997 any gases that contain NO_x (expressed as NO2) in excess of the applicable emissions limit in paragraphs (a)(1) and (2) of this section.

Furthermore, the Applicant's HRSGs were designed to meet the national primary and secondary ambient air quality standards (***"NAAQS"***) for oxides of nitrogen (with nitrogen dioxide as the indicator) as set forth in 40 CFR §50.11.

d) Evaluation of Output Based Emissions is An Appropriate Measure of Pollution Control

The HRSG allows more electrical energy to be produced for a given heat input than is possible using a simple cycle or steam boiler/turbine configuration. Since less fuel is utilized per kilowatt of power produced, less exhaust gas emission are produced. The output based emissions argument, which calculates the improvement in efficiency of the thermal cycle of a traditional power plant is an appropriate way to characterize the pollution prevention function of the Applicant's HRSGs.

Emissions limits for power plants that are based upon measures of fuel input, not emissions output, of the power generation system have long been known to ignore the real emissions reductions achieved by combustion turbine power plants of both simple and combined cycle design. Both the U.S. Environmental Protection Agency (***"EPA"***) and other states recognize the use of energy efficiency as a measure of pollution control and/or pollution prevention with some states using this method as part of their tax exemption programs.\

Monitoring data from the Barney Davis Power Plant during both pre and post-repowering of that plant confirm the assumptions regarding the air emissions reductions per pound of fossil fuel use. This data is set out in Attachment D.

VI. TCEQ's Role as a Technical Advisor to the State in Administering the Prop 2 Program Includes Factoring in Ever-Evolving Pollution Control Policies, not Tax Policy

The clear structure and purpose of Section 11.31 of the Texas Tax Code has for nearly two decades been for the TCEQ to serve as the scientific and technical arbiter for determining the types of equipment that qualify as pollution control property. The TCEQ's role has always been to implement an efficient, consistent and scientifically accurate process to determine technologies that meet the statutory definition of pollution control property. Section 11.31 directs the TCEQ to determine whether particular items of property are used for pollution control based on its specialized knowledge and expertise.

Section 11.31 creates clear and separate roles for: (i) the TCEQ, as the technical expert on pollution control property; and (ii) the appraisal districts whose job it is to value property. The TCEQ's role does not involve local tax administration or local budgetary issues. The specter of prejudice to a local tax base by appraisal districts based on the unfounded argument that HRSGs and Steam Turbines are production equipment is a thinly veiled argument that is outside of the TCEQ's role, and that potentially leads to double taxation of the residual, non-pollution control portion, of the plant, which is routinely valued, at least in part, on an income basis. *See e.g.*, Tex. Tax Code Section 23.0101."

Rather than being led down the wrong path of evaluating the tax policy and budget impacts of tax exemption decisions, the Commision is well-advised to take stock in the fact that it has enough to worry about in its role as technical advisor just keeping up with the rapidly changing world of pollution control mandates. Now that output-based emission limits are the law of the Land, whether talking about conventional pollutants such as NOx, or newly-implemented rules regarding Greenhouse Gases (GHGs), the Commission's technical evaluations must evolve along with those standards.

Gone are the days when the Commission need only confirm the pollution control characteristics of bolt-on pollution control devices. The Commission now has the much more complicated job of developing a consistent approach for calculating the pollution control aspects of "devices and methods" that also have productive value. The pending HRSGs appeals are an early indicator of that evolving role.

Whether or not the Commission chooses to stay with its initial approach of granting 100% exemptions to HRSGs, it must develop a consistent methodology that embraces the reality that HRSGs and similar techonolgies are, in many instances, the only (or at least most sensible) way for fossil fuel-fired power generation to be built in compliance with new output-based emission limits.

VII. Conclusion

As noted at the outset of this brief, the question before the Commission in considering this appeal is not whether an exact percentage is appropriate - the Commissioners need only evaluate whether ***any*** percentage above zero is appropriate. As set forth fully above, aplicable law, prior precedent, and the record in this case demand that a positive use determination b issued. Thus, this appeal should be granted and this matter should be remanded back to the Executive Director for a determination that the property in question is eligible for a positive use determination.

Respectfully submitted,

Michael J. Nasi
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Steve Moore
State Bar No. 14377320
Benjamin Rhem
State Bar No. 24065967

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ATTORNEYS FOR TOPAZ POWER GROUP, LLC

CERTIFICATE OF SERVICE

I hereby certify that on the 31st day of July, 2012, a copy of the foregoing was provided by electronic mail or U.S. First Class Mail to the attached mailing list:

for Michael J. Nasi

Mailing List

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Austin, Texas 78711-3087

Attachment A

DUFF AND PHELPS, LLC - 919 CONGRESS AVENUE SUITE 1450 - AUSTIN, TX 78701 - TEL 512-671-5500 - FAX 512-671-5501

DUFF&PHELPS

Dennis Deegear
Vice President
Phone:(512) 671-5523
dennis.deegear@duffandphelps.com

March 27, 2008

TCEQ - Cashiers Office MC-214
Building A
12100 Park 35 Circle
Austin, Texas 78753

Subject: Application for Use Determination for Pollution Control Property
Barney Davis - 4301 Waldron Rd Corpus Christi, TX 78418

Enclosed please find one application (the "Application") for property tax exemptions for certain qualifying pollution control property at the Barney Davis Project (the "Facility") in Nueces County, Texas.

Pursuant to Title 30 of Chapter 17 of the Texas Administrative Code, the Application has been prepared using the Texas Commission on Environmental Quality ("TCEQ") Application for Use Determination for Pollution Control Property. The enclosed application is a Tier IV Application.

Submission of this Application is required as a process step in the TCEQ's pollution control certification process for tax exemption of certain assets used in pollution control capacities within the Facility. As outlined by the application instructions, the fee for this Tier IV Application is $500. Enclosed please find a check for $500 for the Application processing.

The Application can be summarized as follows:

Property	Description	Estimated Cost
Tier IV	**See Attached Schedule**	**$120,879,829**

Please send one copy of the completed property tax exemption Use Determination to the following address:

Duff and Phelps LLC
c/o Dennis Deegear
919 Congress Ave.
Suite 1450
Austin, TX 78701

If you have any questions regarding the Application or the information supplied with these Application, please contact Dennis Deegear of Duff & Phelps, LLC at (512) 671-5523 or e-mail at dennis.deegear@duffandphelps.com.

Very truly yours,

DUFF & PHELPS LLC

Signature:

Name: Dennis Deegear

Title: Vice President

Enclosures

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
APPLICATION FOR USE DETERMINATION
FOR POLLUTION CONTROL PROPERTY

The TCEQ has the responsibility to determine whether a property is a pollution control property. A person seeking a use determination for pollution control property must complete the attached application or use a copy or similar reproduction. For assistance in completing this form refer to the TCEQ guidelines document, *Property Tax Exemptions for Pollution Control Property*, as well as 30 TAC §17, rules governing this program. For additional assistance please contact the Tax Relief for Pollution Control Property Program at (512) 239-3100. The application should be completed and mailed, along with a complete copy and appropriate fee, to: TCEQ MC-214, Cashiers Office, P.O. Box 13088, Austin, Texas 78711-3088.

1. GENERAL INFORMATION

A. What is the type of ownership of this facility?

- ☑ Corporation
- ☐ Sole Proprietor
- ☐ Partnership
- ☐ Utility
- ☐ Limited Partnership
- ☐ Other

B. Size of company: Number of Employees

- ☑ 1 to 99
- ☐ 1,000 to 1,999
- ☐ 100 to 499
- ☐ 2,000 to 4,999
- ☐ 500 to 999
- ☐ 5,000 or more

C. Business Description: **Electricity Manufacturing (SIC 4911)**

2. TYPE OF APPLICATION

- ☐ **Tier I $150 Application Fee**
- ☐ **Tier II $1,000 Application Fee**
- ☐ **Tier III $2,500 Application Fee**
- ☑ **Tier IV $500 Application Fee**

NOTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt along with the applicaton to cover the required fee.

3. NAME OF APPLICANT

A. Company Name: Topaz Power Group LLC

B. Mailing Address (Street or P.O. Box): 2705 Bee Caves Road Suite 340

C. City, State, ZIP: Austin, TX 78746

4. PHYSICAL LOCATION OF PROPERTY REQUESTING A TAX EXEMPTION

A. Name of facility: Barney Davis

B. Type of Mfg Process or Service: Electricity Manufacturing (SIC 4911)

C. Street Address: 4301 Waldron Rd

D. City, State, ZIP: Corpus Christi, TX 78418

E. Tracking Number Assigned by Applicant: DPBarneyDavis B

F. Customer Number or Regulated Entity Number: N/A

5. APPRAISAL DISTRICT WITH TAXING AUTHORITY OVER PROPERTY

A. Name of Appraisal District: Nueces

B. Appraisal District Account Number: TBD/New for 2008

6. CONTACT NAME (must be provided)

A. Company/Organization Name:	Duff and Phelps LLC	
B. Name of Individual to Contact:	Dennis Deegear	
C. Mailing Address:	919 Congress Ave.	Suite 1450
D. City, State, ZIP:	Austin, TX 78701	
E. Telephone number and fax number:	(512) 671-5523	Fax (512) 671-5501
F. E-Mail address (if available):	dennis.deegear@duffandphelps.com	

7. RELEVANT RULE, REGULATION, OR STATUTORY PROVISION

Please reference Section 8. Each item is detailed with the proper statute, regulation, or environmental regulatory provision.

8. DESCRIPTION OF PROPERTY

Background

The Barney Davis Power Station is located in Nueces County, Texas on the south side of the City of Corpus Christi. The plant has approximately 1,992 acres of land between the Laguna Madre and Oso Creek. Barney Davis contains two intermediate natural gas-fired steam-generating units that were placed in-service in 1974 (Unit 1 - 335 MW) and 1976 (Unit 2 - 347 MW), respectively. The units, which were designed for base load operation, are presently being shuttered in place. As part of the Barney Davis repowering initiative, Topaz will be adding two new GE 7FA combustion turbines and two Heat Recovery Steam Generators (HRSG). With the additional re-tooling of the existing steam turbine, a total of 680 MW generating capacity will go online in 2009.

Overview of Combined Cycle Technology

The Facility is a combined-cycle gas turbine power plant consisting of gas Combustion Turbines ("CTs") equipped with heat recovery steam generators to capture heat from the gas turbine exhaust. Steam produced in the heat recovery steam generators powers a steam turbine generator(s) to produce additional electric power. The use of otherwise wasted heat in the turbine exhaust gas results in higher plant thermal efficiency compared to other power generation technologies. Combined-cycle plants currently entering service can convert over 50% of the chemical energy of natural gas into electricity (HHV basis). Employment of the Brayton Thermodynamic Cycle (Gas Turbine Cycle) in combination with the Rankine Thermodynamic Cycle results in the improved efficiency.

The Rankine cycle is a thermodynamic cycle that converts heat from an external source into work. In a Rankine cycle, external heat from an outside source is provided to a fluid in a closed-loop system. This fluid, once pressurized, converts the heat into work output using a turbine. The fluid most often used in a Rankine cycle is water (steam) due to its favorable properties, such as nontoxic and unreactive chemistry, abundance, and low cost, as well as its thermodynamic properties. The thermal efficiency of a Rankine cycle is usually limited by the working fluid. Without pressure reaching super critical the temperature range the

Rankine cycle can operate over is quite small, turbine entry temperatures are typically 565°C (the creep limit of stainless steel) and condenser temperatures are around 30°C. This gives a theoretical Carnot efficiency of around 63% compared with an actual efficiency of 42% for a modern coal-fired power station. This low turbine entry temperature (compared with a gas turbine) is why the Rankine cycle is often used as a bottoming cycle in combined cycle gas turbine power stations.

The Brayton cycle is a constant pressure thermodynamic cycle that converts heat from combustion into work. A Brayton engine, as it applies to a gas turbine system, will consist of a fuel or gas compressor, combustion chamber, and an expansion turbine. Air is drawn into the compressor, mixed with the fuel, and ignited. The resulting work output is captured through a pump, cylinder, or turbine. A Brayton engine forms half of a combined cycle system, which combines with a Rankine engine to further increase overall efficiency. Cogeneration systems typically make use of the waste heat from Brayton engines, typically for hot water production or space heating.

By combining both gas and steam cycles, high input temperatures and low output temperatures can be achieved. The efficiency of the cycles are additive, because they are powered by the same fuel source. A combined-cycle plant has a thermodynamic cycle that operates between the gas turbine's high firing temperature and the waste heat temperature from the condensers of the steam cycle. This large range means that the Carnot efficiency of the cycle is high. The actual efficiency, while lower than this is still higher than that of either plant on its own. The thermal efficiency of a combined-cycle power plant is the net power output of the plant divided by the heating value of the fuel. If the plant produces only electricity, efficiencies of up to 59% can be achieved.

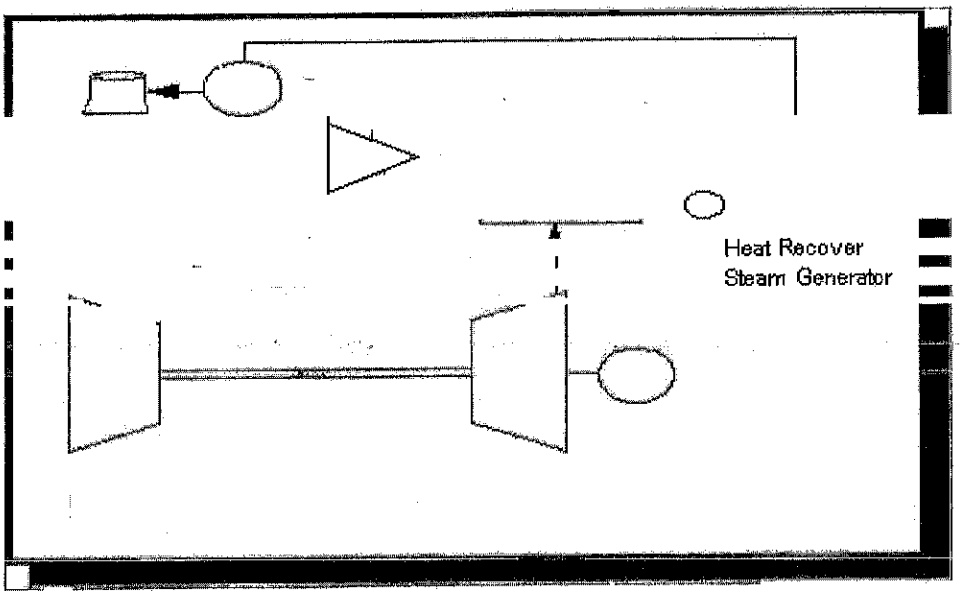
A single-train combined-cycle plant consists of one gas turbine generator, a heat recovery steam generator (HSRG) and a steam turbine generator ("1 x 1" configuration). As an example, an "FA-class" combustion turbine, the most common technology in use for large combined-cycle plants within the state of Texas and other locations throughout the United States, represents a plant with approximately 270 megawatts of capacity.

See Figure 1 – Standard Combined-Cycle Configuration, below.

It is common to find combined-cycle plants using two or even three gas turbine generators and heat recovery steam generators feeding a single, proportionally larger steam turbine generator. Larger plant sizes result in economies of scale for construction and operation, and designs using multiple combustion turbines provide improved part-load efficiency. A 2 x 1 configuration using FA-class technology will produce about 540 megawatts of capacity at International Organization for Standardization ("ISO") conditions. ISO references ambient conditions at 14.7 psia, 59 F, and 60% relative humidity.

Because of high thermal efficiency, high reliability, and low air emissions,

combined-cycle gas turbines have been the new resource of choice for bulk power generation for well over a decade. Other attractive features include significant operational flexibility, the availability of relatively inexpensive power augmentation for peak period operation and relatively low carbon dioxide production.



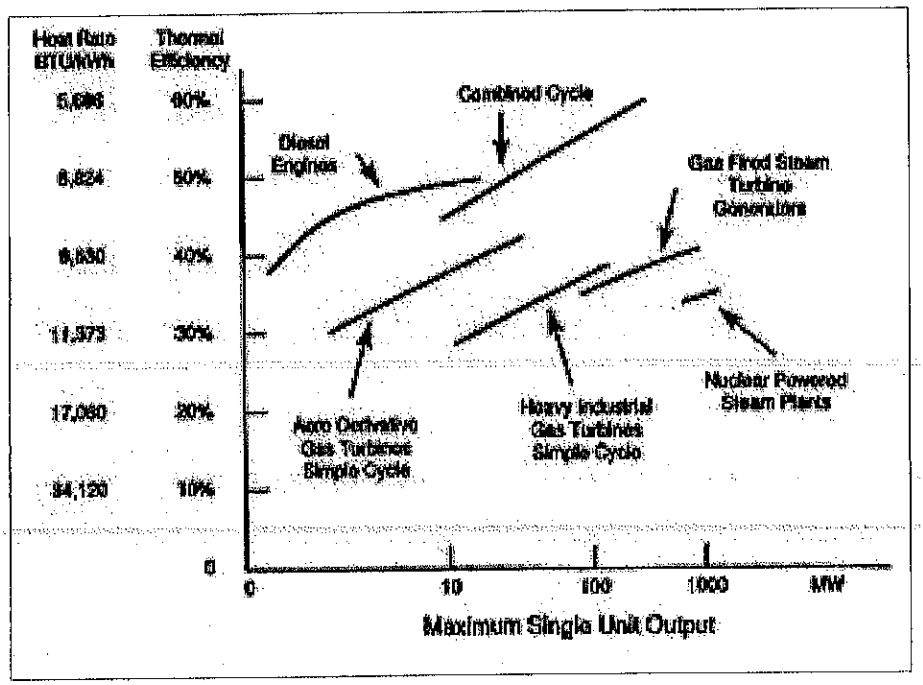


FIGURE 2 - Comparison of efficiency and power output of various power products [Bartol (1997)] (2)

Current Regulatory Authority for Output-Based Emissions

Innovative power technologies such as combined-cycle technology offer enormous potential to improve efficiency and enhance the environmental footprint of power generation through the reduction and/or prevention of air emissions to the environment. Currently, two thirds of the fuel burned to generate electricity in traditional fossil-fired steam boilers is lost. Traditional U.S. power generation facility efficiencies have not increased since the 1950s and more than one fifth of the U.S. power plants are more than 50 years old. In addition, these facilities are the leading contributors to U.S. emissions of carbon dioxide, NOx, sulfur dioxide ("SO2"), and other contaminants into the air and water.

The ability to recognize and regulate the efficiency benefits of pollution reduction and/or prevention through the use of combined-cycle technology is achieved through the use of Output-Based emissions standards, incorporated since September 1998 within the U.S. EPA's new source performance standards ("NSPS") for NOx, from both new utility boilers and new industrial boilers. Pursuant to section 407(c) of the Clean Air Act in subpart Da (Electric Utility Steam Generating Units) and subpart Db (Industrial-Commercial-Institutional Steam Generating Units) of 40 CFR part 60, the U.S. EPA revised the NOx emissions limits for steam generating units for which construction, modification, or reconstruction commenced after July 9, 1997 (3). Output-Based regulations are also exemplified by those used in the U.S. EPA's NOx Cap and Trade Program for the NOx State Implementation Plan

("SIP") Call of 1998, which uses units of measure such as lb/MWh generated or lb concentration ("ppm"), which relate to the emissions to the productive output – electrical generation of the process.(4)

The use of innovative technologies such as combined-cycle units reduces fossil fuel use and leads to multi-media reductions in the environmental impacts of the production, processing transportation, and combustion of fossil fuels. In addition, reducing fossil fuel combustion is a pollution prevention measure that reduces emissions of all products of combustion, not just the target pollutant (currently NOx) of a federal regulatory program.

Authority to Expand Pollution Control Equipment & Categories in Texas

Under Texas House Bill 3732 ("HB3732") enacted in 2007, Section 11.31 of the Texas Tax Code is amended to add certain plant equipment and systems to the current list of air, water, or land pollution control devices exempt from property taxation in Texas.

Specifically, the language reads as follows:

SECTION 4. Section 11.31, Tax Code, is amended by adding Subsections (k), (l), and (m) to read as follows:
(k) The Texas Commission on Environmental Quality shall adopt rules establishing a nonexclusive list of facilities, devices, or methods for the control of air, water, or land pollution, which must include:
(1) coal cleaning or refining facilities;
(2) atmospheric or pressurized and bubbling or circulating fluidized bed combustion systems and gasification fluidized bed combustion combined-cycle systems;
(3) ultra-supercritical pulverized coal boilers;
(4) flue gas recirculation components;
(5) syngas purification systems and gas-cleanup units;
(6) enhanced heat recovery systems;
(7) exhaust heat recovery boilers;
(8) heat recovery steam generators;
(9) superheaters and evaporators;
(10) enhanced steam turbine systems;
(11) methanation;
(12) coal combustion or gasification byproduct and coproduct handling, storage, or treatment facilities;
(13) biomass cofiring storage, distribution, and firing systems;
(14) coal cleaning or drying processes, such as coal drying/moisture reduction, air jigging, precombustion decarbonization, and coal flow balancing technology;
(15) oxy-fuel combustion technology, amine or chilled ammonia scrubbing, fuel or emission conversion through the use of catalysts, enhanced scrubbing technology, modified combustion technology such as chemical looping, and cryogenic technology;
(16) if the United States Environmental Protection Agency adopts a final rule or regulation regulating carbon dioxide as a pollutant, property that is used, constructed, acquired, or installed wholly or partly to capture carbon dioxide from an anthropogenic source in this state that is geologically sequestered in this state;
(17) fuel cells generating electricity using hydrogen derived from coal, biomass, petroleum coke, or solid waste; and
(18) any other equipment designed to prevent, capture, abate, or monitor nitrogen oxides, volatile organic compounds, particulate matter, mercury, carbon monoxide, or any criteria pollutant.
(l) The Texas Commission on Environmental Quality by rule shall update the list adopted under Subsection (k) at least once every three years. An item may be removed from the list if the commission finds compelling evidence to support the conclusion that the item does not provide pollution control benefits.
(m) Notwithstanding the other provisions of this section, if the facility, device, or method for the

control of air, water, or land pollution described in an application for an exemption under this section is a facility, device, or method included on the list adopted under Subsection (k), the executive director of the Texas Commission on Environmental Quality, not later than the 30th day after the date of receipt of the information required by Subsections (c)(2) and (3) and without regard to whether the information required by Subsection (c)(1) has been submitted, shall determine that the facility, device, or method described in the application is used wholly or partly as a facility, device, or method for the control of air, water, or land pollution and shall take the actions that are required by Subsection (d) in the event such a determination is made.

Under the TCEQ's recently updated "Tax Relief for Pollution Control Property – Application Instructions and Equipment and Categories List – Effective January 2008", the Equipment and Categories List - Part B ("ECL Part B") is a list of the pollution control property categories adopted and set forth in TTC Sec. 26.045(f). The taxpayer is to supply a pollution control percentage for the equipment listed in Part B via calculations demonstrating pollution control, prevention and/or reductions achieved by the listed equipment or systems.

The following property descriptions outline the environmental purpose, including the anticipated environmental benefit of pollution control additions considered under the Application Instructions' ECL Part B that have been constructed and placed into use at the Facility as of its placed-in-service date, or installed subsequent to in-service since 1994:

Property Descriptions

Item #1 Combined-Cycle Gas Turbine Plant Heat Recovery Steam Generator ("HRSG") and Support Systems Tier IV B-8

40 CFR Part 60 Subparts DA and DB, NOx Limits for Electric Utility Steam Generating Units and Industrial-Commercial-Institutional Steam Generating Units for New Source Performance Standards ("NSPS").

TAC Rule 106.512, Standard Permit for Electric Generating Units (EGU)

NOTE: Permits issued under Texas Clean Air Act's Health & Safety Code Sections 382.011, applies to all electric generating units that emit air contaminants, regardless of size, and it is to reflect Best Available Control Technology ("BACT") for electric generating units on an output basis in pounds of NOx per megawatt hour, adjusted to reflect a simple cycle power plant.

The heat recovery steam generator ("HRSG") found in the Facility is a heat exchanger that recovers heat from a hot gas stream. It produces steam that can be used in a process or used to drive a steam turbine. A common application for an HRSG is in a combined-cycle power station, where hot exhaust from a gas turbine is fed to an HRSG to generate steam which in turn drives a steam turbine. This combination produces electricity in a more thermally efficient manner than either the gas turbine or steam turbine alone.

The Facility's HRSGs consist of three major components: the Evaporator, Superheater, and Economizer. The different components are put together to meet the operating requirements of the unit. Modular HRSGs normally consist of three sections: an LP (low pressure) section, a reheat/IP (intermediate pressure) section, and an HP (high pressure) section. The reheat and IP sections are separate circuits inside the HRSG. The IP steam partly feeds the reheat section. Each section has a steam drum and an evaporator section where water is converted to steam. This steam then passes through superheaters to raise the temperature and pressure past the saturation point.

Item #2 Steam Turbine and Support Systems Tier IV B-10

40 CFR Part 60 Subparts DA and DB, NOx Limits for Electric Utility Steam Generating Units and Industrial-Commercial-Institutional Steam Generating Units for New Source Performance Standards ("NSPS").

TAC Rule 106.512, Standard Permit for Electric Generating Units (EGU)

NOTE: Permits issued under Texas Clean Air Act's Health & Safety Code Sections 382.011, applies to all electric generating units that emit air contaminants, regardless of size, and it is to reflect Best Available Control Technology ("BACT") for electric generating units on an output basis in pounds of NOx per megawatt hour, adjusted to reflect a simple cycle power plant.

The steam turbine(s) found in the Facility operate on the Rankine cycle in combination with the Brayton cycle, as described above. Steam created in the Facility HRSG(s) from waste heat that would have otherwise been lost to the atmosphere enters the steam turbine via a throttle valve, where it powers the turbine

and connected generator to make electricity. Use of HRSG/Steam Turbine System combination provides the Facility with an overall efficiency of greater than 50%. Steam turbine systems similar to the Facility's have a history of achieving up to 95% availability on an annual basis and can operate for more than a year between shutdown for maintenance and inspections. (5)

Pollution Control Percentage Calculation: Avoided Emissions Approach

To calculate the percentage of the equipment or category deemed to be pollution control equipment, the Avoided Emissions approach has been used. This approach relies on thermal output differences between a conventional power generation system and the combined-cycle system at the Facility. Specifically, the percentage is determined by calculating the displacement of emissions associated with the Facility's thermal output and subtracting these emissions from a baseline emission rate. These displaced emissions are emissions that would have been generated by the same thermal output from a conventional system.

Greater energy efficiency reduces all air contaminant emissions, including the greenhouse gas, carbon dioxide. Higher efficiency processes include combined-cycle operation and combined heat and power ("CHP") generation. For electric generation the energy efficiency of the process expressed in terms of millions of British thermal units ("MMBTU's") per Megawatt-hour. Lower fuel consumption associated with increased fuel conversion efficiency reduces emissions across the board – that is NOx, SOx, particulate matter, hazardous air pollutants, and greenhouse gas emissions such as CO2.

In calculating the percent exempt for the listed items from the ECL-Part B, we utilized Output-Based NOx allocation method for both power generation projects that replaced existing facilities and "Greenfield" power and heat generation facilities. We looked at the various fossil fuel technologies in use today and chose the baseline facility to be a natural gas fuel-fired steam generator. We benchmarked this conventional generation to the subject natural gas-fired combined cycle generator at the Facility. By doing so, we narrowed the heat rate factors as much as possible to be conservative and uniform in modeling. The benchmark heat rate factor is the following:

Natural Gas fuel-fired Steam Generator: 10,490 BTU's/kWh

This baseline heat rate purposely omits other fossil fuel sources in order to eliminate impurity type characteristics, which in turn eliminated the NOx emission and cost of control differences of each fossil fuel and generator type. Comparing the emissions impact of different energy generation facilities is concise when emissions are measured per unit of useful energy output. For the purpose of our calculations, we converted all the energy output to units of MWh (1 MWh = 3.413 MMBTU), and compared the total emission rate to the baseline facility.

The comparison steps to calculate the NOx reduction is as follows:

Calculation (Reference Schedule A)

Step 1 – Subject Output-Based Limit Calculation (lbs NOx / MWh)

(Input-based Limit (lbs NOx/MMBTU)) X (Heat Rate (Btu/kWh)) / (1,000,000 Btu / 1,000 kWh) = Output: (lbs NOx/MWh),

Step 2 – Subject Output Conversion Calculation (NOx Tons / Year)

(Output (lbs NOx/MWh) X (Unit Design Capacity (MW)) X (Capacity Factor) X ((365 Days) X (24 hrs/day)) / 2,000 lbs = Output: (NOx Tons/Year)

Step 3 – Baseline Output-Based Limit Calculation (lbs NOx / MWh)

(Input-based Limit (lbs NOx/MWh)) X (Heat Rate (Btu/kWh)) / (1,000,000 Btu / 1,000 kWh) = Output: (lbs NOx/MWh)

Step 4 – Baseline Output Conversion Calculation (NOx Tons / Year)

(Output (lbs NOx/MMBtu) X (Unit Design Capacity (MW)) X (Capacity Factor) X ((365 Days) X (24 hrs/day)) / 2,000 lbs = Output: (NOx Tons/Year)

Step 5 – Percent NOx Reduction Calculation

$((\text{Output Baseline})_{\text{step 4}} - (\text{Output Subject})_{\text{step 2}} / (\text{Output Subject})_{\text{step 2}} = \%$ Reduction Output Subject

Step 6 – Percent Exempt Calculation

(Total Subject Facility Cost) X (% NOx Reduction) = Capital Cost of NOx Avoidance

Step 7 – Percent Exempt Calculation

Total Cost of NOx Avoidance / Total Cost of HB 3732 Equipment = % Exempt

- If % Exempt is greater than 100% HB 3732 Equipment is 100% Exempt
- If % Exempt is less than 100% then HB 3732 Equipment is partially exempt at the Step 6 calculation.

NOTE: See the attached calculation sheet for the details regarding Facility-specific calculations and property tax exemption percentage results based upon these calculations.

REFERENCES

1. "Output-Based Regulations: A Handbook for Air Regulators", U.S. Environmental Protection Agency, Office of Atmospheric Programs – Climate Protection Partnerships Division, August, 2004, p.4.

2. "Output-Based Emissions Standards; Advancing Innovative Energy Technologies", Northeast-Midwest Institute; 2003, p. 9.

3. IBID, p.13.

4. "Output-Based Regulations: A Handbook for Air Regulators", U.S. Environmental Protection Agency, Office of Atmospheric Programs – Climate Protection Partnerships Division, August, 2004, p.4.

5. http://www.cogeneration.net/Combined_Cycle_Power_Plants.htm

6. "Output-Based Emissions Standards; Advancing Innovative Energy Technologies", Northeast-Midwest Institute; 2003, p. 9.

9. PARTIAL PERCENTAGE CALCULATION

N/A.

10. PROPERTY CATEGORIES AND COSTS

See attached Schedule 10.

11. EMISSION REDUCTION INCENTIVE GRANT

Will an application for an Emission Reduction Incentive Grant be on file for this property/project:

[ ] Yes [X] No

12. APPLICATION DEFICIENCIES

After an initial review of the application, the TCEQ may determine that the information provided with the application is not sufficient to make a use determination. The TCEQ may send a notice of deficiency, requesting additional information that must be provided within 30 days of written notice.

13. FORMAL REQUEST FOR SIGNATURE

By signing this application, you certify that this information is true to the best of your knowledge and belief.

NAME: _____ DATE: _____

TITLE: Vice President

COMPANY: Duff and Phelps LLC

Under Texas Penal Code, Section 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to $2,000, or a prison term of two to 10 years and a fine of up to $5,000.

14. DELINQUENT FEE/PENALTY PROTOCOL

This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. (Effective 9/1/2006)

Topaz Power Group LLC
Barney Davis Power Project
TCEQ Use Determination Application - 2007
Scheule 10
Tier IV

10. PROPERTY CATEGORIES AND COST

PROPERTY	PROJECT ID. NO.	IN SERVICE DATE	TAXABLE ON OR BEFORE 1/1/94? (Y / N)	TIER IV DECISION FLOW CHART BOX 3	ECL NUMBER	ESTIMATED PURCHASE COST	% EXEMPT	EXEMPT COST
Heat Recovery Steam Generators (HRSG)	1	CWIP	N	3	B-8	$76,551,046	100%	$76,551,046
Steam Turbine Systems	2	CWIP	N	3	B-10	$44,328,783	100%	$44,328,783
					Tier IV Total	$120,879,829		$120,879,829

Topaz Power Group LLC
Barney Davis
Schedule A - 2008 Thermal Efficiency Calculation

Subject Details:

Average Heat Rate [1]	8,000 (Btu/kWh)
NOx Emissions [2]	403.0 Tons / year
Plant Capacity [3]	680 MW
Capacity Factor [4]	100.00%
Technology [5]	Combined Cycle
Total Subject Facility Cost [6]	$416,025,975
Total Cost of Tier IV Equipment [7]	$120,879,829

Baseline Details:

Average Heat Rate [8]	10,490 Btu/kWh
Technology [9]	Steam Turbine

STEP 1
Subject Output-Based Limit Calculation (lbs NOx / MWh)

Input-based Limit (lbs NOx/MMBtu)		Heat Rate (Btu/kWh)		Unit Conversions (1,000,000 Btu / 1000 kWh)	=	Output-based Limit (lbs NOx/MWh)
0.0185	x	8,000	/	1,000	=	0.1482

STEP 2
Subject Output Conversion Calculation (NOx Tons / Year)

Output-based Limit (lbs NOx/MWh)		Capacity (MW)		Capacity Factor		Unit Conversions (365 days * 24 Hours / 2,000 lbs)	=	Output NOx (Tons/Year)
0.1482	x	680	x	100.00%	x	4	=	403.0

STEP 3
Baseline Output-Based Limit Calculation (lbs NOx / MWh)

Input-based Limit (lbs NOx/MMBtu)		Heat Rate (Btu/kWh)		Unit Conversions (1,000,000 Btu / 1000 kWh)	=	Output-based Limit (lbs NOx/MWh)
0.0185	x	10,490	/	1,000	=	0.1941

STEP 4
Baseline Output Conversion Calculation (NOx Tons / Year)

Output-based Limit (lbs NOx/MWh)		Capacity (MW)		Capacity Factor		Unit Conversions (365 days * 24 Hours / 2,000 lbs)	=	Output NOx (Tons/Year)
0.1941	x	680	x	100.00%	x	4	=	528.0

STEP 5
Percent NOx Reduction Calculation

(Output Baseline		Output Subject)		Output Subject	=	% NOx Reduction
528.0	-	403.0	/	403.0	=	31.0%

STEP 6
Percent Exempt Calculation

Total Subject Unit Cost		% NOx Reduction	=	Capital Cost of NOx Avoidance
$416,025,975	X	31.0%	=	$128,968,052

STEP 7
Percent Exempt Calculation

Total Cost of NOx Avoidance		Total Cost of HB 3732 Equipment	=	% Exempt
$128,968,052	/	$120,879,829	=	106.7%

Conclude	100%

(1) - Heat rate represents the anticipated heat rate (HHV) and was provided by the client
(2) - NOx emissions is the NOx pollutant emission permit limit in tons per year provided by the client
(3) - Plant capacity is the average nominal capacity and was provided by the client
(4) - Capacity factor is the maximum operating level allowed under the emissions permit provided by the client
(5) - Technology represents the actual technology of the subject
(6) - Total subject facility cost represents the total cost to build the entire facility and it was determined based on data provide by the client
(7) - Total Tier IV equipment was determined by allocating the eligible TCEQ ECL part B equipment and their associated cost from actual data provide by the client
(8) - Baseline heat rate was published by the Energy Information Administration ("EIA")
(9) - Baseline technology represents the technology that the subject would have replaced at the time of the subjects construction

Attachment B

DUFF AND PHELPS, LLC - 919 CONGRESS AVENUE SUITE 1450 - AUSTIN, TX 78701 - TEL 512-671-5500 - FAX 512-671-5501

DUFF&PHELPS

Dennis Deegear
Vice President
Phone:(512) 671-5523
dennis.deegear@duffandphelps.com

March 27, 2008

TCEQ - Cashiers Office MC-214
Building A
12100 Park 35 Circle
Austin, Texas 78753

Subject: Application for Use Determination for Pollution Control Property
Nueces Bay - 2002 Navigation Blvd Corpus Christi, TX 78402

Enclosed please find one application (the "Application") for property tax exemptions for certain qualifying pollution control property at the Nueces Bay Project (the "Facility") in Nueces County, Texas.

Pursuant to Title 30 of Chapter 17 of the Texas Administrative Code, the Application has been prepared using the Texas Commission on Environmental Quality ("TCEQ") Application for Use Determination for Pollution Control Property. The enclosed application is a Tier IV Application.

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The Application can be summarized as follows:

Property	Description	Estimated Cost
Tier IV	**See Attached Schedule**	**$121,103,714**

Please send one copy of the completed property tax exemption Use Determination to the following address:

Duff and Phelps LLC
c/o Dennis Deegear
919 Congress Ave.
Suite 1450
Austin, TX 78701

If you have any questions regarding the Application or the information supplied with these Application, please contact Dennis Deegear of Duff & Phelps, LLC at (512) 671-5523 or e-mail at dennis.deegear@duffandphelps.com.

Very truly yours,

DUFF & PHELPS LLC

Signature:

Name: Dennis Deegear

Title: Vice President

Enclosures

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
APPLICATION FOR USE DETERMINATION
FOR POLLUTION CONTROL PROPERTY

The TCEQ has the responsibility to determine whether a property is a pollution control property. A person seeking a use determination for pollution control property must complete the attached application or use a copy or similar reproduction. For assistance in completing this form refer to the TCEQ guidelines document, *Property Tax Exemptions for Pollution Control Property*, as well as 30 TAC §17, rules governing this program. For additional assistance please contact the Tax Relief for Pollution Control Property Program at (512) 239-3100. The application should be completed and mailed, along with a complete copy and appropriate fee, to: TCEQ MC-214, Cashiers Office, P.O. Box 13088, Austin, Texas 78711-3088.

1. GENERAL INFORMATION

A. What is the type of ownership of this facility?

- ☑ Corporation
- ☐ Partnership
- ☐ Limited Partnership
- ☐ Sole Proprietor
- ☐ Utility
- ☐ Other

B. Size of company: Number of Employees

- ☑ 1 to 99
- ☐ 100 to 499
- ☐ 500 to 999
- ☐ 1,000 to 1,999
- ☐ 2,000 to 4,999
- ☐ 5,000 or more

C. Business Description: **Electricity Manufacturing (SIC 4911)**

2. TYPE OF APPLICATION

- ☐ **Tier I $150 Application Fee**
- ☐ **Tier II $1,000 Application Fee**
- ☐ **Tier III $2,500 Application Fee**
- ☑ **Tier IV $500 Application Fee**

NOTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt along with the applicaton to cover the required fee.

3. NAME OF APPLICANT

A. Company Name: Topaz Power Group LLC

B. Mailing Address (Street or P.O. Box): 2705 Bee Caves Road Suite 340

C. City, State, ZIP: Austin, TX 78746

4. PHYSICAL LOCATION OF PROPERTY REQUESTING A TAX EXEMPTION

A. Name of facility: Nueces Bay

B. Type of Mfg Process or Service: Electricity Manufacturing (SIC 4911)

C. Street Address: 2002 Navigation Blvd

D. City, State, ZIP: Corpus Christi, TX 78402

E. Tracking Number Assigned by Applicant: DPNuecesBay B

F. Customer Number or Regulated Entity Number: N/A

5. APPRAISAL DISTRICT WITH TAXING AUTHORITY OVER PROPERTY

A. Name of Appraisal District: Nueces

B. Appraisal District Account Number: TBD/New for 2008

6. CONTACT NAME (must be provided)

A. Company/Organization Name:	Duff and Phelps LLC	
B. Name of Individual to Contact:	Dennis Deegear	
C. Mailing Address:	919 Congress Ave.	Suite 1450
D. City, State, ZIP:	Austin, TX 78701	
E. Telephone number and fax number:	(512) 671-5523	Fax (512) 671-5501
F. E-Mail address (if available):	dennis.deegear@duffandphelps.com	

7. RELEVANT RULE, REGULATION, OR STATUTORY PROVISION

Please reference Section 8. Each item is detailed with the proper statute, regulation, or environmental regulatory provision.

8. DESCRIPTION OF PROPERTY

Background

The Nueces Bay Power Station is located in Nueces County, Texas near the City of Corpus Chrisit. The site currently has three generating units which are presently mothballed. As part of the Nueces Bay repowering project, the existing turbines will be removed to make room for the two new GE 7FA gas turbines. Heat Recovery Steam Generators (HRSG) are being added to provide steam to the steam turbine. The existing steam turbine is currently undergoing refurbishment and will be used to drive a new GE steam turbine generator resulting in a total combined generating capacity of 680 MW for all the generating units at the Nueces Bay Power Station. The facility is expected to be completed by 2009.

Overview of Combined Cycle Technology

The Facility is a combined-cycle gas turbine power plant consisting of gas Combustion Turbines ("CTs") equipped with heat recovery steam generators to capture heat from the gas turbine exhaust. Steam produced in the heat recovery steam generators powers a steam turbine generator(s) to produce additional electric power. The use of otherwise wasted heat in the turbine exhaust gas results in higher plant thermal efficiency compared to other power generation technologies. Combined-cycle plants currently entering service can convert over 50% of the chemical energy of natural gas into electricity (HHV basis). Employment of the Brayton Thermodynamic Cycle (Gas Turbine Cycle) in combination with the Rankine Thermodynamic Cycle results in the improved efficiency.

The Rankine cycle is a thermodynamic cycle that converts heat from an external source into work. In a Rankine cycle, external heat from an outside source is provided to a fluid in a closed-loop system. This fluid, once pressurized, converts the heat into work output using a turbine. The fluid most often used in a Rankine cycle is water (steam) due to its favorable properties, such as nontoxic and unreactive chemistry, abundance, and low cost, as well as its thermodynamic properties. The thermal efficiency of a Rankine cycle is usually limited by the working fluid. Without pressure reaching super critical the temperature range the Rankine cycle can operate over is quite small, turbine entry temperatures are

typically 565°C (the creep limit of stainless steel) and condenser temperatures are around 30°C. Traditional coal fired and natural gas fired Rankine cycle power generation plants are limited by the inlet pressures and temperatures of the steam turbine design and the condenser vacuum and temperature. The Rankine cycle can achieve thermodynamic cycle efficiency (useful work obtained as a percentage of fuel input) ranging from 33% to 36%. However, if the Rankine cycle is used in conjunction with or as the "bottoming" cycle to the Brayton cycle the efficiencies can be improved as discussed below. This low turbine entry temperature (compared with a gas turbine) is why the Rankine cycle is often used as a bottoming cycle in combined cycle gas turbine power stations.

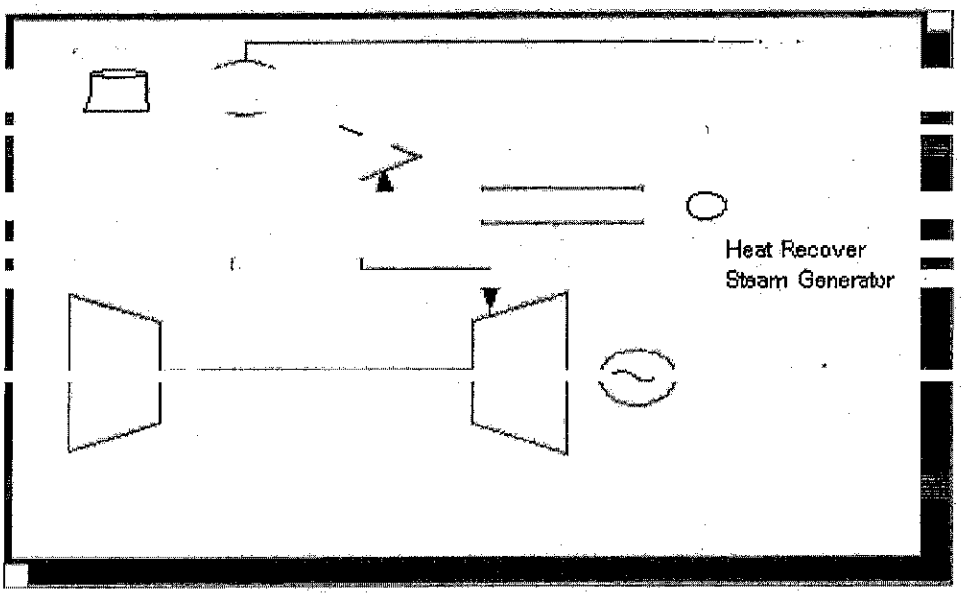
The Brayton cycle is a constant pressure thermodynamic cycle that converts heat from combustion into work. A Brayton engine, as it applies to a gas turbine system, will consist of a fuel or gas compressor, combustion chamber, and an expansion turbine. Air is drawn into the compressor, mixed with the fuel, and ignited. The resulting work output is captured through a pump, cylinder, or turbine. A Brayton engine forms half of a combined cycle system, which combines with a Rankine engine to further increase overall efficiency. Cogeneration systems typically make use of the waste heat from Brayton engines, typically for hot water production or space heating.

By combining both gas and steam cycles, high input temperatures and low output temperatures can be achieved. The efficiency of the cycles are additive, because they are powered by the same fuel source. A combined-cycle plant has a thermodynamic cycle that operates between the gas turbine's high firing temperature and the waste heat temperature from the condensers of the steam cycle. This large range means that the Carnot efficiency of the cycle is high. The actual efficiency, while lower than this is still higher than that of either plant on its own. The thermal efficiency of a combined-cycle power plant is the net power output of the plant divided by the heating value of the fuel. If the plant produces only electricity, efficiencies of up to 59% can be achieved.

A single-train combined-cycle plant consists of one gas turbine generator, a heat recovery steam generator (HSRG) and a steam turbine generator ("1 x 1" configuration). As an example, an "FA-class" combustion turbine, the most common technology in use for large combined-cycle plants within the state of Texas and other locations throughout the United States, represents a plant with approximately 270 megawatts of capacity.

See Figure 1 – Standard Combined-Cycle Configuration, below.

It is common to find combined-cycle plants using two or even three gas turbine generators and heat recovery steam generators feeding a single, proportionally larger steam turbine generator. Larger plant sizes result in economies of scale for construction and operation, and designs using multiple combustion turbines provide improved part-load efficiency. A 2 x 1 configuration using FA-class technology will produce about 540 megawatts of capacity at International Organization for


Heat Recover
Steam Generator

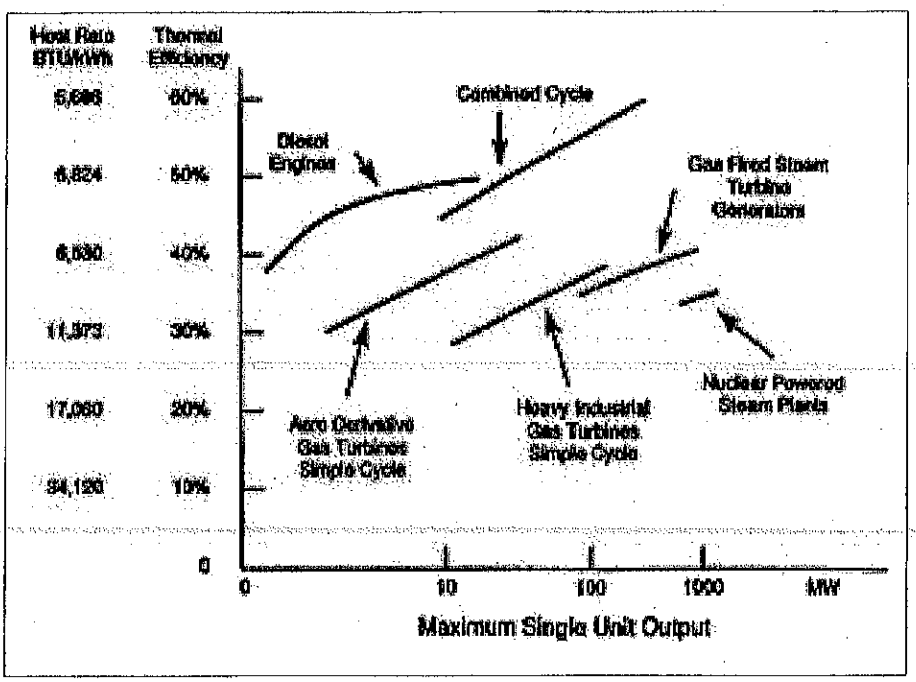


FIGURE 2 - Comparison of efficiency and power output of various power products [Bartol (1997)] (2)

Current Regulatory Authority for Output-Based Emissions

Innovative power technologies such as combined-cycle technology offer enormous potential to improve efficiency and enhance the environmental footprint of power generation through the reduction and/or prevention of air emissions to the environment. Currently, two thirds of the fuel burned to generate electricity in traditional fossil-fired steam boilers is lost. Traditional U.S. power generation facility efficiencies have not increased since the 1950s and more than one fifth of the U.S. power plants are more than 50 years old. In addition, these facilities are the leading contributors to U.S. emissions of carbon dioxide, NOx, sulfur dioxide ("SO2"), and other contaminants into the air and water.

The ability to recognize and regulate the efficiency benefits of pollution reduction and/or prevention through the use of combined-cycle technology is achieved through the use of Output-Based emissions standards, incorporated since September 1998 within the U.S. EPA's new source performance standards ("NSPS") for NOx, from both new utility boilers and new industrial boilers. Pursuant to section 407(c) of the Clean Air Act in subpart Da (Electric Utility Steam Generating Units) and subpart Db (Industrial-Commercial-Institutional Steam Generating Units) of 40 CFR part 60, the U.S. EPA revised the NOx emissions limits for steam generating units for which construction, modification, or reconstruction commenced after July 9, 1997 (3). Output-Based regulations are also exemplified by those used in the U.S. EPA's NOx Cap and Trade Program for the NOx State Implementation Plan

("SIP") Call of 1998, which uses units of measure such as lb/MWh generated or lb concentration ("ppm"), which relate to the emissions to the productive output – electrical generation of the process.(4)

The use of innovative technologies such as combined-cycle units reduces fossil fuel use and leads to multi-media reductions in the environmental impacts of the production, processing transportation, and combustion of fossil fuels. In addition, reducing fossil fuel combustion is a pollution prevention measure that reduces emissions of all products of combustion, not just the target pollutant (currently NOx) of a federal regulatory program.

Authority to Expand Pollution Control Equipment & Categories in Texas

Under Texas House Bill 3732 ("HB3732") enacted in 2007, Section 11.31 of the Texas Tax Code is amended to add certain plant equipment and systems to the current list of air, water, or land pollution control devices exempt from property taxation in Texas.

Specifically, the language reads as follows:

SECTION 4. Section 11.31, Tax Code, is amended by adding Subsections (k), (l), and (m) to read as follows:
(k) The Texas Commission on Environmental Quality shall adopt rules establishing a nonexclusive list of facilities, devices, or methods for the control of air, water, or land pollution, which must include:
(1) coal cleaning or refining facilities;
(2) atmospheric or pressurized and bubbling or circulating fluidized bed combustion systems and gasification fluidized bed combustion combined-cycle systems;
(3) ultra-supercritical pulverized coal boilers;
(4) flue gas recirculation components;
(5) syngas purification systems and gas-cleanup units;
(6) enhanced heat recovery systems;
(7) exhaust heat recovery boilers;
(8) heat recovery steam generators;
(9) superheaters and evaporators;
(10) enhanced steam turbine systems;
(11) methanation;
(12) coal combustion or gasification byproduct and coproduct handling, storage, or treatment facilities;
(13) biomass cofiring storage, distribution, and firing systems;
(14) coal cleaning or drying processes, such as coal drying/moisture reduction, air jigging, precombustion decarbonization, and coal flow balancing technology;
(15) oxy-fuel combustion technology, amine or chilled ammonia scrubbing, fuel or emission conversion through the use of catalysts, enhanced scrubbing technology, modified combustion technology such as chemical looping, and cryogenic technology;
(16) if the United States Environmental Protection Agency adopts a final rule or regulation regulating carbon dioxide as a pollutant, property that is used, constructed, acquired, or installed wholly or partly to capture carbon dioxide from an anthropogenic source in this state that is geologically sequestered in this state;
(17) fuel cells generating electricity using hydrogen derived from coal, biomass, petroleum coke, or solid waste; and
(18) any other equipment designed to prevent, capture, abate, or monitor nitrogen oxides, volatile organic compounds, particulate matter, mercury, carbon monoxide, or any criteria pollutant.
(l) The Texas Commission on Environmental Quality by rule shall update the list adopted under Subsection (k) at least once every three years. An item may be removed from the list if the commission finds compelling evidence to support the conclusion that the item does not provide pollution control benefits.
(m) Notwithstanding the other provisions of this section, if the facility, device, or method for the

control of air, water, or land pollution described in an application for an exemption under this section is a facility, device, or method included on the list adopted under Subsection (k), the executive director of the Texas Commission on Environmental Quality, not later than the 30th day after the date of receipt of the information required by Subsections (c)(2) and (3) and without regard to whether the information required by Subsection (c)(1) has been submitted, shall determine that the facility, device, or method described in the application is used wholly or partly as a facility, device, or method for the control of air, water, or land pollution and shall take the actions that are required by Subsection (d) in the event such a determination is made.

Under the TCEQ's recently updated "Tax Relief for Pollution Control Property – Application Instructions and Equipment and Categories List – Effective January 2008", the Equipment and Categories List - Part B ("ECL Part B") is a list of the pollution control property categories adopted and set forth in TTC Sec. 26.045(f). The taxpayer is to supply a pollution control percentage for the equipment listed in Part B via calculations demonstrating pollution control, prevention and/or reductions achieved by the listed equipment or systems.

The following property descriptions outline the environmental purpose, including the anticipated environmental benefit of pollution control additions considered under the Application Instructions' ECL Part B that have been constructed and placed into use at the Facility as of its placed-in-service date, or installed subsequent to in-service since 1994:

Property Descriptions

Item #1 Combined-Cycle Gas Turbine Plant Heat Recovery Steam Generator ("HRSG") and Support Systems Tier IV B-8

40 CFR Part 60 Subparts DA and DB, NOx Limits for Electric Utility Steam Generating Units and Industrial-Commercial-Institutional Steam Generating Units for New Source Performance Standards ("NSPS").

TAC Rule 106.512, Standard Permit for Electric Generating Units (EGU)

NOTE: Permits issued under Texas Clean Air Act's Health & Safety Code Sections 382.011, applies to all electric generating units that emit air contaminants, regardless of size, and it is to reflect Best Available Control Technology ("BACT") for electric generating units on an output basis in pounds of NOx per megawatt hour, adjusted to reflect a simple cycle power plant.

The heat recovery steam generator ("HRSG") found in the Facility is a heat exchanger that recovers heat from a hot gas stream. It produces steam that can be used in a process or used to drive a steam turbine. A common application for an HRSG is in a combined-cycle power station, where hot exhaust from a gas turbine is fed to an HRSG to generate steam which in turn drives a steam turbine. This combination produces electricity in a more thermally efficient manner than either the gas turbine or steam turbine alone.

The Facility's HRSGs consist of three major components: the Evaporator, Superheater, and Economizer. The different components are put together to meet the operating requirements of the unit. Modular HRSGs normally consist of three sections: an LP (low pressure) section, a reheat/IP (intermediate pressure) section, and an HP (high pressure) section. The reheat and IP sections are separate circuits inside the HRSG. The IP steam partly feeds the reheat section. Each section has a steam drum and an evaporator section where water is converted to steam. This steam then passes through superheaters to raise the temperature and pressure past the saturation point.

Item #2 Steam Turbine and Support Systems Tier IV B-10

40 CFR Part 60 Subparts DA and DB, NOx Limits for Electric Utility Steam Generating Units and Industrial-Commercial-Institutional Steam Generating Units for New Source Performance Standards ("NSPS").

TAC Rule 106.512, Standard Permit for Electric Generating Units (EGU)

NOTE: Permits issued under Texas Clean Air Act's Health & Safety Code Sections 382.011, applies to all electric generating units that emit air contaminants, regardless of size, and it is to reflect Best Available Control Technology ("BACT") for electric generating units on an output basis in pounds of NOx per megawatt hour, adjusted to reflect a simple cycle power plant.

The steam turbine(s) found in the Facility operate on the Rankine cycle in combination with the Brayton cycle, as described above. Steam created in the Facility HRSG(s) from waste heat that would have otherwise been lost to the atmosphere enters the steam turbine via a throttle valve, where it powers the turbine

and connected generator to make electricity. Use of HRSG/Steam Turbine System combination provides the Facility with an overall efficiency of greater than 50%. Steam turbine systems similar to the Facility's have a history of achieving up to 95% availability on an annual basis and can operate for more than a year between shutdown for maintenance and inspections. (5)

Pollution Control Percentage Calculation: Avoided Emissions Approach

To calculate the percentage of the equipment or category deemed to be pollution control equipment, the Avoided Emissions approach has been used. This approach relies on thermal output differences between a conventional power generation system and the combined-cycle system at the Facility. Specifically, the percentage is determined by calculating the displacement of emissions associated with the Facility's thermal output and subtracting these emissions from a baseline emission rate. These displaced emissions are emissions that would have been generated by the same thermal output from a conventional system.

Greater energy efficiency reduces all air contaminant emissions, including the greenhouse gas, carbon dioxide. Higher efficiency processes include combined-cycle operation and combined heat and power ("CHP") generation. For electric generation the energy efficiency of the process expressed in terms of millions of British thermal units ("MMBTU's") per Megawatt-hour. Lower fuel consumption associated with increased fuel conversion efficiency reduces emissions across the board – that is NOx, SOx, particulate matter, hazardous air pollutants, and greenhouse gas emissions such as CO2.

In calculating the percent exempt for the listed items from the ECL-Part B, we utilized Output-Based NOx allocation method for both power generation projects that replaced existing facilities and "Greenfield" power and heat generation facilities. We looked at the various fossil fuel technologies in use today and chose the baseline facility to be a natural gas fuel-fired steam generator. We benchmarked this conventional generation to the subject natural gas-fired combined cycle generator at the Facility. By doing so, we narrowed the heat rate factors as much as possible to be conservative and uniform in modeling. The benchmark heat rate factor is the following:

Natural Gas fuel-fired Steam Generator: 10,490 BTU's/kWh

This baseline heat rate purposely omits other fossil fuel sources in order to eliminate impurity type characteristics, which in turn eliminated the NOx emission and cost of control differences of each fossil fuel and generator type. Comparing the emissions impact of different energy generation facilities is concise when emissions are measured per unit of useful energy output. For the purpose of our calculations, we converted all the energy output to units of MWh (1 MWh = 3.413 MMBTU), and compared the total emission rate to the baseline facility.

The comparison steps to calculate the NOx reduction is as follows:

Calculation (Reference Schedule A)

Step 1 – Subject Output-Based Limit Calculation (lbs NOx / MWh)

(Input-based Limit (lbs NOx/MMBTU)) X (Heat Rate (Btu/kWh)) / (1,000,000 Btu / 1,000 kWh) = Output: (lbs NOx/MWh),

Step 2 – Subject Output Conversion Calculation (NOx Tons / Year)

(Output (lbs NOx/MWh) X (Unit Design Capacity (MW)) X (Capacity Factor) X ((365 Days) X (24 hrs/day)) / 2,000 lbs = Output: (NOx Tons/Year)

Step 3 – Baseline Output-Based Limit Calculation (lbs NOx / MWh)

(Input-based Limit (lbs NOx/MWh)) X (Heat Rate (Btu/kWh)) / (1,000,000 Btu / 1,000 kWh) = Output: (lbs NOx/MWh)

Step 4 – Baseline Output Conversion Calculation (NOx Tons / Year)

(Output (lbs NOx/MMBtu) X (Unit Design Capacity (MW)) X (Capacity Factor) X ((365 Days) X (24 hrs/day)) / 2,000 lbs = Output: (NOx Tons/Year)

Step 5 – Percent NOx Reduction Calculation

$((\text{Output Baseline})_{\text{step 4}} - (\text{Output Subject}))_{\text{step 2}} / (\text{Output Subject})_{\text{step 2}} = \%$ Reduction Output Subject

Step 6 – Percent Exempt Calculation

(Total Subject Facility Cost) X (% NOx Reduction) = Capital Cost of NOx Avoidance

Step 7 – Percent Exempt Calculation

Total Cost of NOx Avoidance / Total Cost of HB 3732 Equipment = % Exempt

- If % Exempt is greater than 100% HB 3732 Equipment is 100% Exempt
- If % Exempt is less than 100% then HB 3732 Equipment is partially exempt at the Step 6 calculation.

NOTE: See the attached calculation sheet for the details regarding Facility-specific calculations and property tax exemption percentage results based upon these calculations.

Attachment C

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 10, 2012

Mr. Greg Maxim
Director
Duff and Phelps, LLC
919 Congress Ave Ste 1450
Austin, Texas 78701

Re: Notice of Negative Use Determination
Topaz Power Group LLC
Barney Davis Power Plant
4301 Waldron Rd
Corpus Christi (Nueces County)
Application Number: 12210; Tracking Number: DPBARNEYDAVISB

Dear Mr. Maxim:

This letter responds to Topaz Power Group LLC's Application for Use Determination, received April 23, 2008, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Barney Davis Power Plant.

The TCEQ has completed the review for application #12210 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4 and §17.6. Heat recovery steam generators and steam turbines are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at ronald.hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Chance Goodin, Team Leader
Stationary Source Programs
Air Quality Division

CG/RH

cc: Chief Appraiser, Nueces County Appraisal District, 201 North Chaparral, Corpus Christi, Texas 78401

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 10, 2012

Mr. Greg Maxim
Director
Duff and Phelps, LLC
919 Congress Ave Ste 1450
Austin, Texas 78701

Re: Notice of Negative Use Determination
Topaz Power Group LLC
Nueces Bay Power Plant
2002 Navigation Blvd
Corpus Christi (Nueces County)
Application Number: 12211; Tracking Number: DPNUECESBAYB

Dear Mr. Maxim:

This letter responds to Topaz Power Group LLC's Application for Use Determination, received April 23, 2008, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Nueces Bay Power Plant.

The TCEQ has completed the review for application #12211 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4 and §17.6. Heat recovery steam generators and steam turbines are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at ronald.hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

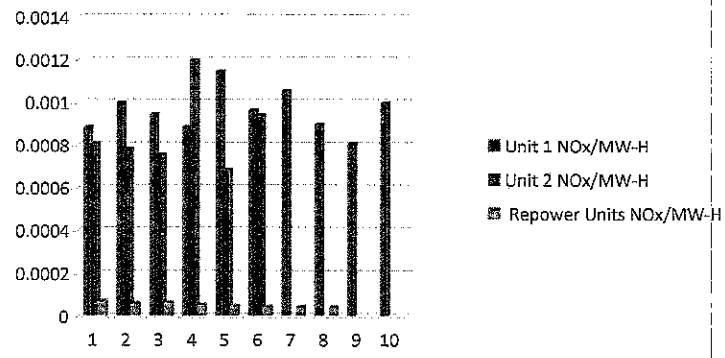
Chance Goodin, Team Leader
Stationary Source Programs
Air Quality Division

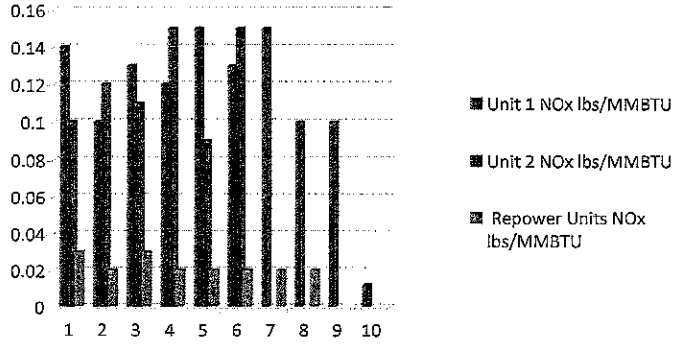
CG/RH

cc: Chief Appraiser, Nueces County Appraisal District, 201 North Chaparral, Corpus Christi, Texas 78401

Attachment D

Pre-Repowering Efficiency and Air Emissions Unit 1									
FACILITY_NAME	UNITID	OP_YEAR	HEAT_INPUT	NOX_RATE lbs/MMBTU	NOX_MASS TONs	Gross Load (MW-H)	CO2 Tons	Operating Hours	NOX TONS/MW-HR
Barney M. Davis	1	2003	9,882,095	0.14	814.4	923,389	611,010.3	8,398	0.0009
Barney M. Davis	1	2004	1,365,091	0.1	115.4	115,931	81,133.3	1,273	0.0010
Barney M. Davis	1	2005	4,018,371	0.13	343.1	363,700	238,809.6	3,423	0.0009
Barney M. Davis	1	2006	3,861,536	0.12	319.8	361,211	229,487.0	2,820	0.0009
Barney M. Davis	1	2007	1,815,633	0.15	198.3	173,553	107,904.3	1,658	0.0011
Barney M. Davis	1	2008	4,749,542	0.13	420.8	436,979	282,257.8	3,852	0.0010
Barney M. Davis	1	2009	3,199,412	0.15	332.1	315,615	190,145.3	2,112	0.0011
Barney M. Davis	1	2010	660,763	0.1	48.3	53,988	39,255.9	843	0.0009
Barney M. Davis	1	2011	1,906,567	0.1	131	162,795	113,303.8	1,761	0.0008
Barney M. Davis	1	2012	1,674,769	0.012	138.1	138,581	99,528.2	1,494	0.0010
Pre-Repowering Efficiency and Air Emissions Unit 2									
FACILITY_NAME	UNITID	OP_YEAR	HEAT_INPUT	NOX_RATE lbs/MMBTU	NOX_MASS TONs	Gross Load (MW-H)	CO2 Tons	Operating Hours	NOX TONS/MW-HR
Barney M. Davis	2	2003	2,094,717	0.1	152.7	189,000	131,053.6	1,606	0.0008
Barney M. Davis	2	2004	11,922,584	0.12	837.6	1,070,886	708,543.8	7,750	0.0008
Barney M. Davis	2	2005	6,256,894	0.11	388.7	516,358	371,836.8	5,580	0.0008
Barney M. Davis	2	2006	2,965,995	0.15	280.5	233,671	176,265.6	1,763	0.0012
Barney M. Davis	2	2007	1,339,322	0.09	82.8	120,870	79,592.2	1,060	0.0007
Barney M. Davis	2	2008	3,419,274	0.15	294.4	312,553	203,201.2	2,679	0.0009
Post-Repowering Efficiency and Air Emissions BMD Units 3, 4 & NB Units 8, 9									
FACILITY_NAME	UNITID	OP_YEAR	HEAT_INPUT	NOX_RATE lbs/MMBTU	NOX_MASS TONs	Gross Load (MW-H)	CO2 Tons	Operating Hours	NOX TONS/MW-HR
Barney M. Davis	3	2011	8,264,568	0.03	73.3	1,064,646	491,149.8	5637	0.0001
Barney M. Davis	3	2012	5,289,883	0.02	40.1	687,398	314,371.3	3524	0.0001
Barney M. Davis	4	2011	8,092,698	0.03	68.9	1,081,929	480,942.4	5742	0.0001
Barney M. Davis	4	2012	4,943,162	0.02	36.3	663,495	293,764.0	3425	0.0001
Nueces Bay	8	2011	7,989,948	0.02	52.7	1,093,549	474,830.6	5692	0.0000
Nueces Bay	8	2012	5,011,986	0.02	30	687,430	297,856.4	3517	0.0000
Nueces Bay	9	2011	7,978,245	0.02	45.5	1,092,722	474,132.6	5558	0.0000
Nueces Bay	9	2012	5,117,020	0.02	29.5	698,703	304,095.0	3545	0.0000


0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
1 2 3 4 5 6 7 8 9 10
Unit 1 NOx/MW-H
Unit 2 NOx/MW-H
Repower Units NOx/MW-H


0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1 2 3 4 5 6 7 8 9 10
Unit 1 NOx lbs/MMBTU
Unit 2 NOx lbs/MMBTU
Repower Units NOx lbs/MMBTU