

Texas Commission on Environmental Quality (TCEQ)  
Office of Air  
Tax Relief for Pollution Control Property Advisory Committee  
November 19, 2019  
2:00 P.M. – 3:09 P.M.

## Minutes

### *Opening Remarks*

- a. Mr. Bob Adair called the meeting to order at 2:00 P.M.
- b. The following committee members were present: Mr. Bob Adair, Mr. Charles Allred, Mr. Daryl Attaway, Mr. Roland Bieber, Mr. Paul Coon, Mr. Michael Ford, Mr. Lloyd Graham, Mr. Timothy Jones, Mr. Don Lee, Mr. Gregory Maxim, Mr. Michael Nasi, and Dr. Cyrus Reed.
- c. No action was taken on the public comment policy.
- d. No comments were received from committee members or the public.

***Consideration and planned vote on advice regarding how to determine use percentages for future use determinations for applications that include heat recovery steam generators (HRSGs), specifically, advice in response to questions 1 and 2 of 3 to a July 19, 2019 TCEQ letter requesting advice from the Committee.***

***Note: Note: During the Committee's November 8, 2019 public meeting, the Committee voted "No" (without opposition) in response to the following question 3 in the above referenced letter:***

***Should the Commission propose rulemaking to remove HRSGs from the Expedited Review List of Section 17.17(b)? If yes, what compelling evidence can the Committee provide that HRSGs do not provide pollution control benefits?***

***On November 8, 2019, the Committee also approved the chair's draft letter of submittal with advice, subject to revisions to align with the Committee's pending vote(s) on additional advice and supporting report(s). The chair planned on submitting all HRSG advice to TCEQ before Thanksgiving.***

Documents listed and linked below were submitted by committee members.

Mr. Charles Allred - [Proposed HRSG Use Analysis Spreadsheet](#)

Mr. Paul Coon - [HRSG Use Proposal](#)

Mr. Don Lee - [Proposed HRSG Use Analysis](#)

Dr. Cyrus Reed - [Potential Approaches Memo](#)

Dr. Cyrus Reed - [Potential Approaches Spreadsheet](#)

Mr. Adair referenced proposals and comments from the committee members. Mr. Adair asked Mr. Don Lee to review his proposal, representing government. Mr. Lee said he considers the attempts to look at pollution control use by looking at pollution control benefit as unprecedented, illogical, and not supported by the statute. He said that combined benefits could go well above 100%, if you say that benefits are equal to use but that use cannot go over 100% of a piece of property. He added that, traditionally, the program has looked at the capital

tied up in the property and that capital that is beyond what is necessary to produce is pollution control. It is a utilization of capital analysis and not a production analysis and does not ask what the improvement in productivity is and presume the rest is environmental. Mr. Lee continued that if the cost analysis procedure (CAP) is used inappropriately, it does that by applying an adjustment of the marketable product net present value to capital cost new without the same adjustment to capital cost old. He said there should be no adjustment in this situation, regarding HRSGs.

Mr. Lee said he thought that if the TCEQ staff tells the committee that the rules require the CAP to be applied that way, the rules need to be changed and advice should be provided to that effect. Mr. Lee said that Dr. Cyrus Reed ran calculations and came up with positive use determinations every time. Mr. Lee said that saying benefit, a decrease in emissions, or increase in efficiency equals proportion of the utilization of property, may open the use determinations to challenge. Mr. Lee's proposal was to advise the commission to use the precedent. He also said that if the committee and commission want to look at generalized numbers to come up with a percentage for a Tier I item, he is ok with that and he is also ok with the staff and applicants working together with clear instructions to not include the net present value because it does not apply to HRSGs or any situation where the environmental benefit comes from increased production efficiency.

Mr. Adair asked Dr. Reed to respond to the proposal. Dr. Reed said that Mr. Lee is correct when just looking at the simplified CAP (capital cost old minus capital cost new, divided by capital cost new). In other examples, Dr. Reed tried to calculate the production of the new versus the production of the old by making assumptions and using a simplified approach regarding how much the combined cycle plant was used and how much electricity it would sell, versus a standard turbine. Using this calculation, he found percentages in the 15-30% range.

Mr. Adair said that Mr. Paul Coon sent out updated information, but that Mr. Charles Allred calculated the percentage on the documents. Mr. Adair asked Mr. Allred to review his revised calculations. Mr. Allred said he was trying to look at the problem from the production side and then the environmental side. Considering data from *Gas Turbine World*, he looked at power output from the plants in simple cycle mode and combined cycle plants with the most comparable rating he could find to determine the additional power output from the HRSG. He took the difference in output and divided that by simple cycle output only and calculated a 49.39% increase in power output. He did the same comparison to determine the average improvement in heat rate based on *Gas Turbine World* information. He averaged the two percentages to come up with a 40.67% productive benefit/use. He said that subtracting the productive benefit/use of 40.67% from 100%, gives 59.33%, a non-productive use.

Mr. Allred then looked at pounds of nitrogen oxides (NO<sub>x</sub>) per megawatt hour (lb/MWhr) based on specifications from the simple and combined cycle plants that have similar megawatt output. He calculated the outputs from simple and combined cycle plants, took the difference and divided by the average (lb NO<sub>x</sub>/MWhr) for simple cycle plants to determine the decrease in NO<sub>x</sub> emissions on a (lb/MWhr) basis. Mr. Allred used the 5 parts per million (ppm) concentration for simple cycle plants because simple cycle plants could achieve that limit if using dry low-NO<sub>x</sub> burners and selective catalytic reduction, and Mr. Allred was trying to limit the environmental benefit to just the HRSGs. Mr. Allred said the calculation resulted in 71.27%, representing the reduction in NO<sub>x</sub> emissions.

Mr. Allred then averaged the non-productive use (59.33%) and the environmental use (71.27%) for a 65% use determination for HRSGs. Mr. Allred said that this approach excludes variation in pricing such as fuel and power pricing.

Dr. Reed said he appreciated Mr. Allred's use of the 5 ppm NO<sub>x</sub> emission limit versus the 2 ppm NO<sub>x</sub> emission limit that the committee has previously discussed as it is a fair comparison for new facilities. Dr. Reed asked why it is reasonable to look at both heat rate and output; he asked why not look at just output on the productive use calculation. Mr. Allred said he was

curious to see what the difference is and provided the information so the committee could have the information for both.

Dr. Reed noticed that the plants from *Gas Turbine World* appear to be for smaller uses and asked if people are building smaller combined cycle units. Mr. Allred responded that the only way to determine that would be additional permit review. Mr. Allred said that the data were based on real turbine models and he included the entire population, both large and small turbines.

Mr. Adair asked if there were any comments or questions from the public. None were received.

Mr. Adair asked Mr. Allred to address Mr. Lee's comment that looking at production and environmental benefit is not a viable analysis and asked Mr. Allred to explain why his analysis is appropriate. Mr. Allred responded that he quantified both environmental and production benefits. He said there might be a bigger emissions decrease than productive benefit from the equipment. He said that you have to crunch the numbers for both approaches and somewhere in the middle is the overall use. Mr. Allred said that by bringing both the productive and environmental use together, you adjust each one for the other, and the resulting number is representative of both perspectives. He added that a problem with the CAP is that items that have an increase in pollution control benefit may or may not have an increase in cost and that comparing the capital costs may not work well with respect to HRSGs. Dr. Reed added that data on steam turbines for power generation (without combined cycle) are hard to find for comparison purposes because steam turbines are not being installed. Mr. Allred stated he ran into the same problem.

Mr. Michael Nasi, stated there are faults with all the different approaches and that cost is not any more about this evaluation than anything else and every approach is a surrogate approach. He thought the approach that Mr. Allred put forth was the only approach that looks at both the productive and environmental side. It was not taking a remainder approach, but evaluating both sides and trying to strike a balance.

Mr. Greg Maxim said that the percentage approach accounts for other equipment at the plant such as the cooling tower, but that it would only apply to the HRSG and not the ancillary equipment. Mr. Allred stated that was correct and that the megawatts could not be produced without the ancillary equipment, but that the percentage would apply to just the HRSG.

Mr. Lee thanked Mr. Allred and other committee members for their discussion. He noted that the committee members saw that this might be a precedent for property other than HRSGs, and he added that that was a fundamental change in the nature of the Tax Relief Program and that change should be noted. He added that part of the justification for the Committee's industry representatives' approach was that the CAP approach does not work generally in an economy that is producing cheaper, better producing things, so an analysis that says benefit equals use is required. Mr. Lee argued that benefit does not equal use, and something that can go above 100% cannot be the same as something that can only go to 100%.

Mr. Nasi said he did not hear Mr. Allred say anything that Mr. Lee said. Mr. Allred said his comments were intended to apply only to HRSGs. Mr. Lee acknowledged Mr. Allred's comment but heard the discussion about things getting cheaper, and the way this program has always worked is that when pollution control equipment becomes part of everyday production, it loses its pollution control exemption. Mr. Allred said he does not read that in statute or constitutional amendment, but that it just had to be wholly or partially for pollution control. Mr. Allred said that, originally, property included in the program was to comply with environmental regulations that required adding on, retooling, and modernizing existing facilities. He added that as technology advances and brand-new facilities are built, the pollution control property is built into the facility and it still has an environmental benefit. He reiterated that his analysis was intended for HRSGs only.

Mr. Lee said that the CAP formula has always recognized that as technologies change, an applicant might not get a positive use. Mr. Lee agreed that the statute does not say that with words, it says that in the way it works. Mr. Lee reminded the committee about the example of diesel tugs versus the electric tugs at airports and how only the cost differential is tax exempt. Mr. Lee added that as batteries get cheaper, at some point, the new tugs become less expensive than the old and the electric tugs will lose the exemption under existing rules. Mr. Lee said the industry approach would lead to productive equipment being eligible for a tax exemption, which was not intended by the constitutional amendment.

Mr. Maxim stated the airport might have been required to go to electric tugs, but he was not sure. Mr. Lee said that it was a requirement under the attainment plan for the Dallas area.

Mr. Adair asked if other committee members have comments. Dr. Reed stated that he understands that Mr. Lee is against the notion that we look at the pollution benefit and assume the remainder is production. Dr. Reed asked if Mr. Lee has a similar objection to figuring out the productive use of the equipment and taking the remainder of that; Mr. Lee responded "yes."

Dr. Reed said Mr. Allred's analysis shows that a combined cycle plant on an output basis is about 50% more productive, and if you look at it on a heat rate basis, it is about 35% more efficient. Dr. Reed asked Mr. Lee if it is a reasonable approach to look at production and then say the remainder is pollution benefit, or does he object to the idea of equating benefit and use. Mr. Lee responded that he rejects equating benefit and use.

Mr. Lee gave an example asking whether a power company proposing a new nuclear power plant with zero emissions is 100% exempt. Mr. Allred stated that they still have toxic waste; it is just different pollution than the combustion-based power plants.

Mr. Lee asked how the committee is going to base exemptions off percent reduction in emissions and/or percentage increases in production. Mr. Lee stated that use and benefit are not related.

Mr. Nasi stated that Mr. Lee finds cost and use to be related but that he does not find cost and use to be related.

Mr. Daryl Attaway said the original intent was that after an environmental benefit has been proven, the program asks how much extra was spent and that is what is exempt. Mr. Attaway said he understood that for HRSGs, industry is going to spend less, and he asked, "what is exempt?"

Mr. Nasi responded that Mr. Attaway is assuming the legislature directed staff to consider cost and that this is absolutely not true. There is nothing in the statute to that effect. The committee has to deal with these types of technologies in a different way than has historically been done because of the way the CAP has been applied, it has consistently generated negative use determinations, and that the Texas Supreme Court rejected that approach. That does not mean the committee cannot figure out a similar way to calculate use determinations. The law talks about environmental and productive use and the committee should try to get at that. Mr. Nasi said he respects the way Mr. Allred and Dr. Reed have attempted to get at that. Mr. Nasi said he does not think the committee can say that approach is bad and that cost is better because that is not accurate.

Mr. Attaway said that maybe the whole program needs to be reconsidered if industry is able to spend less money to get environmental benefits. He continued that the point was that if the government is forcing facilities to spend more money on property to meet the environmental requirements, that property is tax exempt, and if that is not the case, maybe this program does not need to be in place.

Dr. Reed disagreed that the HRSGs cost less and that the information he has seen shows that it costs more to build a combined cycle than a simple cycle. He acknowledged that there is more productive value for that extra cost and that on a long-term basis, the combined cycle may be

more effective, but that the capital cost will generally be higher for a combined cycle plant than a single cycle plant. Dr. Reed said he does not understand why the CAP has resulted in a negative use percentage and said that maybe it was because applicants were just comparing HRSGs versus the steam unit instead of a whole plant approach. Dr. Reed said the CAP can work if a whole plant approach is applied.

Mr. Lee said that cost is the best proxy for capital and property tax is a tax on capital, so the question of how property is being used is a question of how capital is being used. Therefore, it is a capital analysis of the utilization of capital. Mr. Lee indicated the current CAP is structured to measure how much capital has been tied up in pollution control above what is necessary for production. He stated that if there is a better way to get to it, then he is open to it, but he thinks that the other way falls apart.

Mr. Adair stated that it is good to have healthy discussion, but he is getting concerned that the Committee is not closer to providing advice before Thanksgiving. He stated that in the draft letter, he had planned for the possibility of a split vote. Mr. Adair asked if there is anything that has not been said that should be considered before the Committee votes.

Mr. Nasi said he is open to hearing everyone out fully. He asked for specific examples for how to apply the CAP that other members have discussed. Mr. Lee provided the example that the HRSG costs \$500 million and the steam generation equipment that would be used otherwise would cost \$400 million, resulting in a 20% positive use determination. Mr. Allred said that depends on what costs you are looking at and that there is variation in the numbers. Mr. Lee said he understood that and thought that was true for many different applications in many different areas and that the applicants come up with a proposal and the staff and commission consider them. Mr. Lee said he trusted the staff to do a good job. He added that there was no reason for there to be a net present value of a marketable product adjustment to capital cost old for a HRSG.

Dr. Reed reminded the Committee that he looked at variations of the CAP that could be applied. He looked at the cost of the new multiplied by the efficiency (or increased production) minus the cost of the old versus its efficiency over the cost of the new property. He also stated he could subtract the difference of the energy production, but determining the value of the energy is complex. Mr. Maxim reminded the Committee that using the CAP results in a higher use determination percentage for a less efficient plant.

Mr. Adair asked if there was input from the public. None was received.

Dr. Reed asked what the problem is with the most simple CAP, as Mr. Lee described. Mr. Maxim clarified that the differential in cost is being applied to the cost of the HRSG. Mr. Maxim said in output-based emissions, the efficiency comes from everything. Mr. Maxim said that Mr. Allred's calculation includes the total environmental efficiency and that percentage is just applied to the HRSG and not ancillary equipment. Dr. Reed stated that scrubbers and low-NO<sub>x</sub> burners at the facility would already be exempted, and Mr. Maxim agreed but said that other pieces of the plant will be taxed.

Mr. Adair asked what the will of the committee was. Mr. Nasi stated he would like to see what Mr. Lee was proposing and see it explained in a motion and said he would like to have another call. Mr. Nasi said he was not sure that what Mr. Lee was proposing does not affect the CAP for other purposes and he would like additional time to consider the proposals. Mr. Paul Coon said it has been a challenge to discuss the issue with others outside the Committee calls, and he was comfortable with having a future call. He also would like more time to consider other proposals and ideas. Dr. Reed said he would also appreciate more time.

Mr. Adair asked the TCEQ staff if the Committee could have additional time to submit their advice and have another meeting. Mr. Walker Williamson with the TCEQ Air Quality Division suggested possibly having an additional meeting the first week in December, pending room

availability. The TCEQ staff indicated they would inform Mr. Adair of the availability of the agenda room.

Mr. Adair encouraged the committee members to not wait until the last minute so that documents can be reviewed and to allow thinking about revisions.

Mr. Adair said he would work with Committee members to schedule a time. Mr. Attaway reminded the committee that for those in the tax world, their availability might be limited if a conclusion cannot be reached quickly.

### ***Other***

- a. ***Old business***  
No old business
- b. ***New business***  
No new business
- c. ***Other comments from the public***  
None

### ***Action Items***

Mr. Adair will work with committee members to schedule another meeting and the TCEQ staff will inform Mr. Adair of the availability of the agenda room.

### ***Adjourn***

The meeting adjourned at 3:09 P.M.