

Pennsylvania Department of Environmental Protection
AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING

Minutes

February 13, 2020

Air Quality Technical Advisory Committee (AOTAC) Members Present

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| Patrick O'Neill | John Walliser |
| Gary Merritt | John Shimshock |
| Robert Altenburg | Michael Winek |
| Josie Gaskey | Kevin Stewart |
| John Tissue | Joseph Guzek |
| Jayme Graham | |

Department Staff Present:

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| Kirit Dalal | Allen Landis |
| John Krueger | Hitesh Suri |
| Lucas Hershey | Viren Trivedi |
| Kristen Furlan | Bob Bonner |
| Sean Wenrich | Valerie Shaffer |
| Vincent Pascucci | Samantha Harmon |
| Bo Reiley | Liz Davis |
| Joe Lole | Jesse Walker |
| Krishnan Ramamurthy | Jennie Demjanick |
| Hayley Book | |

Others Present:

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| Al Hatton – Exelon | Wendy Merz – Trinity Consultants |
| Andrew Place – PA PUC | Cristy Sweeney – ARIPPA |
| Glendon King – PA House | Abby Foster - PCIC |
| Griffin Caruso – House of Representative ERE | Nathan Jacoby - SEF |
| Kate Vaccaro – MGKF | Scott Blauvelt – JKLM Energy |
| Steve Krug – Krug Architects | Matt Fire - BIR |
| Vince Brisini – Olympus Power | Maggie Greene – All4 LLC |
| Nick Leone – All4 LLC | Joe Ducey – CBS 21 |
| Rick Allan – Tesla/Brookfield | Justin Henry – Central Penn Business Journal |
| Tim Cousins – PA Senate | Byron Farnsworth – Wellsboro Electric |
| Mathew Page – Trinity Consultants | Pam Witmer - UGIES |
| Kevin Sunday – PA Chamber | John Schmelzle- Power Engineering Inc. |
| Terry Black – ERM | Tom Weissinger - Talen |
| Adam Walters - DCED | Bill Kesack - CMI |
| Teresa Irvin McCurdy – TD Connections | Julie Labella – Talen Energy |
| Bob Barkanic – The Barkanic Group | Jacquelyn Bonomo – Penn Future |
| Donna M. J. Clark – Energy Assoc. of PA | Liz Robinson - PSEA |

Mandy Warner – EDF
Andrew Ritter – Range Resources
Tom Schuster – Sierra Club
Kathleen Robertson – Exelon
Jenna McCarthy - Malady & Wooten
Joe Kerecman – Calpine
Michael Kopistansky – Vicinity Energy
Kim Scarborough - PSEG
Justin Sweitzer – PLS
Lauren Barr – Bravo Group
Laura Legere – Pittsburg Post-Gazette

Andrew Zwally - Greenlee Partner
Robert Ruth – Clean Air Council
Chris Mullen – Vicinity Energy
Sara Nicholas - PASA
Julie Jameson – Orion Strategies
Randy Cain – First Energy
Elizabeth Marx – Pa Utility Law Project
Jennifer Flannery – CEC
Eric Ross – Milliron and Goodman
Coleen P. Engvall – JLCC

CALL TO ORDER

Jayne Graham, AQTAC Vice Chair, called the February 13, 2019 meeting to order at 9:35 a.m. in Room 105 of the Rachel Carson State Office Building, 400 Market Street, Harrisburg.

ADMINISTRATIVE ITEMS

Introductions were made by AQTAC members and the audience.

Due to the small number of committee members present, Kevin Stewart questioned if there were enough to meet quorum. Kirit Dalal confirmed there were a sufficient number of members to proceed.

Approval of Minutes

The minutes of the December 12, 2019 meeting were discussed by the AQTAC members. There were a few misinterpretation errors which were corrected in the final minutes. The motion to approve the minutes was made by Robert Altenburg and seconded by Kevin Stewart. The minutes were approved by a vote of 8-0-1 (yes/no/abstain).

INFORMATIONAL ITEMS

Draft — requirements of Reasonably Available Control Technology (RACT III) Rulemaking.

Sean Wenrich provided a PowerPoint presentation on the requirements of RACT III Rulemaking.

John Shimshock asked for clarification on the Annex. He inquired if the Department is planning to keep the existing rule with new requirements which become applicable as of a certain date or the Department is planning to write a new rule in Chapter 129. Sean Wenrich responded that the Department is writing a new rule in Chapter 129.

Mr. Shimshock was concerned with combining those facilities which are subject to RACT II and RACT III requirements. Mr. Shimshock gave the example that auxiliary boilers with stack tests but without Continuous Emissions Monitoring Systems (CEMS) may be concerned with the 10%

capacity factor restriction which could be greater than presumptive RACT. Mr. Shimshock indicated that long-term facilities need to comply with the new requirements and may not use the previous test results due to 5-year testing frequency requirements. Mr. Shimshock advised adding requirements which link with the existing rule. Sean Wenrich responded that the Department will keep his comment under advisement.

Mr. Shimshock mentioned previous presentations on RACT III requirements for Selective Catalytic Reduction (SCR) and CEMS including the daily average period requirements for Ozone season. Mr. Shimshock stated that in the past, discussions took place on various Clean Air Act petitions submitted by Maryland and neighboring states, such as the Ozone Transport Commission (OTC) petitions regarding the implementation of these requirements and PA regulations. Mr. Shimshock stated that the Department commented to OTC mentioning that evidence for DEP is insufficient, and he is curious about the changes between those comments and the new requirements. Sean Wenrich responded that those comments were made regarding OTC and RACT has a different standard. Mr. Wenrich added that those comments may fall under the same subject matter but are not related. Mr. Wenrich stated that the Department conducted its own data analysis to determine the preliminary RACT standards. Mr. Shimshock questioned the basis of the daily compliance period. Mr. Wenrich responded that it is the data analysis from the current operation.

Gary Merritt voiced concern with changing the time for averaging and the concept of minimizing. Mr. Merritt indicated that minimizing will require facilities to drive the amount of monthly ammonia injection and there are not many of those facilities. Mr. Merritt gave an example of a Cambria co-generation facility that did ammonia injection which caused problems externally, internally and with the ash. Mr. Merritt further indicated that minimizing does not benefit much, instead the control should be there to optimize the system. He suggested using optimization rather than minimization as shown in the presentation.

Robert Altenburg questioned the reference to minimizing emissions on slide 16. Sean Wenrich responded that the goal behind this is to make sure that facilities are doing everything they can within the limitations that are listed. Mr. Altenburg asked if the Department envisions the language to express the essential minimization requirements or if the purpose for this broad section is minimization following the other provisions. Mr. Wenrich indicated that the Department is still working to determine where to draft this portion in the regulatory language.

John Tissue echoed that on slide 16 optimization and minimization are arbitrary. He stated that for example, if two inspectors visit the facility, one of them may agree with the optimization and the other may disagree. Mr. Tissue acknowledged that the Department is expecting the facilities to do the best they can, but when things are arbitrary it causes lots of difficulties.

Mike Winek commented that with respect to sources located in Allegheny county, there is confusion with RACT II as to whether the county uses case-by-case or if the state rule applies. Mr. Winek suggested DEP work with counties to clarify if RACT III applies to sources located in Philadelphia and Allegheny counties. Mr. Winek questioned the statement on slide 6 that case-

by-case RACT II will satisfy case-by-case RACT III, except in circumstances where presumptive requirements of RACT III are more stringent. Sean Wenrich responded that it would be an option for the facility to comply with the new presumptive RACT III or they can choose a new case-by-case. If they choose a case-by-case, they cannot be RACT III.

Kevin Stewart indicated that it is important to address the occurrences of daily time scales and requested that the Department share the data analysis for additional understanding. Mr. Stewart referenced the statement on slide 17 that requirements for Bruner Island are largely consistent with the company consent decree with Sierra Club and asked what the term “largely” means and what exception would not be consistent. Sean Wenrich responded that he has not looked in depth into the consent decree and that the Department intends to include the consent decree in the rulemaking. Mr. Wenrich indicated that the Department needs to evaluate if there are stipulations in the consent decree which should not be included and can’t confirm at this time if it would be exact.

Mr. Stewart added to the concern raised by Mr. Merritt and Mr. Tissue on minimization and optimization. Mr. Stewart suggested that it would be helpful to draft the language with a mutual understanding from the company on what optimization is and how it is technically required.

Gary Merritt commented on the timing of daily vs. 30 day rolling averages and indicated that the fuel burned can be critical. In the case of waste coal plants, multiple interactions with sulfur contents may occur.

Jayne Graham commented on the case-by-case analysis suggesting that facilities did not meet RACT II case-by-case in 2019. Ms. Graham stated that it is very unlikely the case-by-case will change due to tighter standards in 2020. Ms. Graham explained that the case-by-case will not change, and it would be mostly a paper exercise. Sean Wenrich understood Ms. Graham’s point and mentioned that the Department is adding new presumptive standards in RACT III.

Patrick O’Neill arrived at 10:00 AM and chaired the meeting at the completion of RACT III discussion.

Concept of CO₂ Budget Trading Program

Hayley Book provided an overview of the CO₂ Budget Trading Program, including applicability criteria, Pennsylvania specific set-aside and exemptions, and a newly proposed category of well plugging projects as a qualifying offset project. Ms. Book explained that this is a draft presentation of the Annex as there are portions of the Annex that are yet to be completed such as Pennsylvania’s starting allowance budget, and additional details around the abandoned well plugging offset projects. Ms. Book further indicated that the Governor’s Executive Order indicated that the draft regulation should be delivered to the Environmental Quality Board by July 2020, and the Department was continuing to work toward that deadline.

Robert Altenburg praised and acknowledged the Department's efforts on this item. Mr. Altenburg made several suggestions. He mentioned that the Department is not proposing a volunteer set-aside fund for voluntary clean and renewable energy generation in PA. Mr. Altenburg expressed concern that if there is not a voluntary clean energy set-aside then qualifying projects would not be able to apply for these allowances. Mr. Altenburg mentioned that he understood that PA will join six other states who have this program and would like Pennsylvania to consider this renewable set-aside as well for inclusion in the regulation. Mr. Altenburg indicated that the presentation listed waste coal facilities qualifying for set-aside allowances but there is nothing in the rule saying the particular facilities getting these allowances have demonstrated that they are in fact providing those benefits. Additionally, there is no language prioritizing the use of certain sources of waste coal piles that may maximize environmental benefits. He noted if the industry as a whole reduces its emissions by a third, the Department would start to ramp down the amount of allowances as a whole. Mr. Altenburg suggested using the excess allowances for other strategic purposes. Mr. Altenburg indicated that the waste coal facilities and their carbon emissions per MWh are significantly higher than the average of the rest of the fossil fuel generation facilities. They are generating as a whole more emissions thereby taking those allowance and dropping them in the pool but not prorating them for MWh. By doing that the Department is flooding the pool and devaluing allowances in the pool.

John Shimshock requested follow up on specific items in the December AQTAC meeting presentation as Hayley Book stated that today is a follow up of the December presentation.

Josie Gaskey referenced multi-state auctions vs. PA run auctions on slide 14. She asked if there is flexibility for a PA-only auction under the Governor's Executive Order. Hayley Book responded that this language enables the flexibility of multi-state or a PA auction for a variety of reasons. Multi-state auctions are beneficial not only as an opportunity to trade with other states but also because they reduce compliance costs. Ms. Book indicated that multi-state auctions are an existing option with an existing platform and market monitor. While setting up a PA auction requires several steps, it is not impossible. Ms. Book explained that the plan is to participate in multi-state auctions with regulatory language allowing for future flexibility. Ms. Gaskey asked for an example that would force the Department to make the changes in the future. Ms. Book responded that she does not currently have an example other than the Department is establishing a CO₂ budget trading program and would like to keep the flexibility of using the Regional Greenhouse Gas Initiative (RGGI) auction or another auction. The Department does not anticipate needing this but has included the flexibility.

Mike Winek asked about the time frame for implementing the rule. Hayley Book responded that prior to finalization there would be several opportunities for discussion and public comment. He further questioned the cost and commented that it seems whatever is decided should be fully vetted- and that public comments seems to be as part of rulemaking.

Gary Merritt asked if the ACE (Affordable Clean Energy) rule requiring an analysis by the Department would be met by this proposed regulation. Mr. Merritt mentioned that the Department

and Commonwealth are working on the Economy-wide cap and trade petition, evaluating participation in the transportation climate initiative – and the Regional Greenhouse Gas Initiative with a tentative timeframe for participation of 2022. Mr. Merritt questioned the combined economic impact of these programs. Mr. Merritt stated that he does not need an immediate answer, but the Department needs to look into it.

Krishnan Ramamurthy responded that he presented on the ACE rule in a previous AQTAC meeting and further clarified that the question was asked to EPA and it was made clear that due to the construction of the ACE rule, RGGI cannot replace it.

John Shimshock presented slides from the December AQTAC meeting presentation per the previously mentioned follow up. Mr. Shimshock indicated that there is significant concern about the economic impact of participating in RGGI and provided an overview of electric generation and distribution in PA, a major producer of electricity in the nation. Mr. Shimshock stated concern that if electric units are fossil fuel units subject to RGGI, it could place PA in an uncompetitive market.

Kevin Stewart questioned if the Department will have more information on the CO₂ Budget Trading Program prior to April AQTAC meeting or will that be an action item in April? Hayley Book responded that it is planned to be an action item on the April agenda.

Mr. Stewart stated his concerns that the committee has not seen any evidence of the impact on the power sector in this meeting. Mr. Stewart mentioned that there is not enough time for the committee to come up with enough consensus about the concerns mentioned below and to review the proposed draft in two weeks. Mr. Stewart stated that there are several concerns including waste coal issues, carbon intensity per MWh, allowances as pointed out by Mr. Altenburg earlier, the absence of units less than 25 MW, the content of analysis, the location of population, emissions from the power sector including controls, issues about leakage etc. Mr. Stewart suggested that it is important for this group to see the modeling and devote enough time to evaluate all the issues prior to voting on the draft rule.

John Shimshock mentioned allowance allocation and referenced a table in the Annex with a place holder starting with year 2023 and going to 2030 and beyond. He asked if it needs to be aligned with the Governor's Executive Order which indicates that the Department needs to achieve 26% reduction by 2025 and 80% reduction by 2050 from 2005 emissions. Hayley Book responded that the GHG reduction goals outlined in the Governor's Executive Order ties percentages specifically related to reduction in greenhouse gas (GHG) emissions. Therefore, this regulation, and participation in RGGI, is one of the prongs to be implemented to reach the goal in the executive order but is not the sole work PA is engaged in to address climate change.

Josie Gaskey questioned if the next proposed draft for this regulation will address leakage. Hayley Book responded that this regulation will not specifically address leakage. Ms. Book indicated the Department is prepared to talk about and identify areas of potential leakage including the observations found in modeling. Ms. Book clarified that the Department is

modeling the power sector to identify potential leakage and also on the reinvestment of the process side including strategies identified to help address leakage. Ms. Gaskey indicated that OH and WV are not in the Ozone Transport Region and asked if the Department is evaluating increases in NOx relating to neighboring states. Ms. Book responded that while the modeling is concentrated on PA requires observance of generation, policy, and law changes in surrounding states.

Ms. Gaskey agreed with Mr. Stewart that she would like to see this regulation as an informational item again before the draft item is ready for vote. Ms. Book responded that the Department will consider the request and make sure the committee has enough time to review the proposed rule and adjust timetables if necessary.

Mike Winek asked how the Department defined the term economically efficient in the rule. Hayley Book responded that economically efficient is determined by the Department looking at the multi states market-based auctions and in terms of PA going it alone or PA participating with other states. Ms. Book indicated that participation with other states and using market-based mechanisms addresses the economically efficient language as indicated in the executive order or in the regulation. Mr. Winek noted that PA climate change is very cost effective and asked if there is a cost-benefit analysis. Ms. Book responded that it will be part of Department's analysis. Ms. Book stated that as previously mentioned, RGGI is a cap and invest program, with the allowance on one side and proceeds from reinvestment on the other side. How those proceeds are reinvested, in what sector and in what program etc., has a significant impact on the economic outcomes in PA. Ms. Book stated the Department is looking into multiple modeling scenarios such as if money is invested in clean energy, energy efficiency, GHG abatement, and transportation electrification, among others. Ms. Book added that the Department needs to evaluate the impact to make sure the proceeds are used to move the market and ensure money is leveraging private investment which has a significant positive economic impact in PA.

Mr. Winek asked for information on benefits based simply on CO₂ reduction. Ms. Book responded she does not currently have that information, but it can be provided. Mr. Winek asked for an explanation on engagement with the General Assembly as referenced on slide 16. Ms. Book explained the General Assembly has always been a partner of the Department and DEP continues to work with them by meeting with their staff, meeting with legislature leadership, members of the consumer protection and licensure committee, environmental resources and energy etc. DEP also participated in several hearings before the Joint Legislative Conservation Committee and others to provide the Department's views and to get feedback from other stakeholders to ensure we are considering everyone's comments before moving forward. Mr. Winek asked if the Department requires approval from the General Assembly or the legislature to authorize this rulemaking. Ms. Book clarified that the legislature has already granted the Department the authority under the Air Pollution Control Act and the Department continues collaboration.

Josie Gaskey asked for revenue projections for this program. Hayley book responded revenue is a factor of the PA allowance budget as well as the clearing price of the auction. Ms. Book stated

that the Department does not currently know the allowance budget or what the price will be in 2022. The current price is \$5.61.

John Tissue asked if the Department has an estimate on how many tons of emissions PA wells can offset. Hayley Book responded that these are the type of calculations and details the Department is currently completing. The Department needs to make sure that there is a program or application which is available for people working with offset projects and the criteria which exists in other states. Ms. Book mentioned that since the creation of RGGI, there has been one offset project – a landfill gas project in Maryland. Given the current allowance prices, it has not yet been economical to take advantage of the offset provision. Ms. Book explained that in proposing the offset, DEP has to identify the existing emissions and how much is offset due to plugging etc. and to make sure DEP can quantify in it order to set up qualifying offset program which is being done in conjunction with oil and gas program. Mr. Tissue inquired how the Department quantifies emissions from wells, considering seasonal differences and rainfall water table and different ways to create the analysis with different tasks. Ms. Book responded that the Department is looking into the feasibility of that, such as what type of equations will be used. Ms. Book again referenced the Annex, which is very descriptive and outlines the provisions of the offset program.

PUBLIC COMMENT

Tom Schuster, representing the Sierra Club, submitted testimony for both the RACT III and CO₂ Budget Trading Program. Mr. Schuster indicated support of the new 24-hour averaging provisions in RACT III and felt it was a major hole in the existing regulation, allowing excess pollution. With respect to RGGI, Mr. Schuster suggested DEP explore the possibility of lowering the threshold for the size of units which are covered sources under RGGI. He stated that there are many small units in PA which are generating under 25 MW and many more are proposed including some in the development stage. Therefore, he advised consideration going forward in terms of revising the Annex because Sierra Club does not want those units to be at an advantage by possibly increasing local co-pollutants. Also, he advocated for study on the community impact of co-pollutants as generation is possibly shifting as a result of RGGI. Mr. Schuster indicated that some operators may be generating less, some more, and perhaps some new plants are being built. Sierra Club would like DEP to conduct ongoing environmental justice (EJ) assessments to evaluate if designated EJ communities are seeing changes in copollutants. If there are increases noticed, work with those communities to come up with a plan to mitigate those. On the waste coal set-aside, Mr. Schuster recommended a couple of changes: one is the definition of waste coal which includes the coal refuse that was disposed after 1982 and permitted disposal areas. Mr. Schuster didn't think that really gets at purported benefits of waste coal. Mr. Schuster stated if there are any pollution problems coming from any of these permitted sites, it is a permitting and enforcement issue which needs to be addressed separately. Second it is known that there are certain exemptions which waste coal plants enjoy and there is a federal rule about to be finalized loosening restrictions at waste coal plants. Sierra Club thinks that because this cleanup operation is a balance of cost/benefits and if a plant is producing excess

pollution in other forms, they should not be eligible for the set-aside. Sierra Club can certainly discuss this more as this period progresses.

Kathleen Robertson, Senior Manager at Exelon Generation, thanked DEP for the opportunity to provide comments. Ms. Robertson indicated Exelon's support of RGGI rule and discouraged undue delays so the timeline can be met. Ms. Robertson provided Exelon's background and mentioned that the company has an estimated annual economic impact of \$4.5 billion in Pennsylvania, supporting more than 9,600 local jobs and producing \$760 million in labor income. Ms. Robertson mentioned that Exelon does business in several states covered by RGGI since its beginning in 2009 and Exelon's experience with this program supports their belief that RGGI is the right step for Pennsylvania at this time, as we begin to tackle climate change and reduce its significant threat to the communities. Exelon also supports Pennsylvania's intention to use allowance auctions like other RGGI states, which provides revenue to invest in further emissions reductions and mitigate potential customer impacts. Based on studies done by current RGGI states, this cap-and-invest structure has resulted in net positive economic benefit across all RGGI states and control periods. Ms. Robertson presented below the Acadia Center's observations on the first ten years of RGGI.

- CO2 emissions from covered power plants fell by 47%, outpacing the rest of the country by 90%;
- Electricity prices fell by 5.7%, even as prices in the rest of the country increased by 8.6%; and
- GDP grew by 47%, outpacing growth in the rest of the country by 31%.

Ms. Robertson indicated that at the same time, RGGI states generated \$3.2 billion in allowance auction proceeds for investment in further emissions reductions or consumer benefits and an estimated \$5.7 billion in public health improvements. Joining RGGI provides Pennsylvania with a proven, efficient tool to begin addressing climate change and supporting the preservation and deployment of clean sources of electricity. Ms. Robertson urged Pennsylvania DEP to approach this process with urgency. Finally, Ms. Robertson emphasized the importance of setting a cap that ensures the program achieves its desired result – reducing emissions.

Robert Routh, Clean Air Council, thanked PA DEP on behalf of the council and 35,000 members for releasing the preliminary draft Annex that will establish a PA program to control carbon pollution from power plants. Mr. Routh indicated that while carbon emissions declined by roughly one-third in 11 years, PA still has the fifth dirtiest power sector. It is the fourth largest carbon emitter nationwide, emitting more carbon than all the RGGI states combined. Pennsylvania's emission reductions have largely come from the retirement of old, uneconomical coal-fired power plants. Indeed, absent additional policy changes, Pennsylvania's power sector emissions are projected to start rising again, all but ensuring the state will fail to meet Governor Wolf's greenhouse gas reduction targets for 2025 and, especially, 2050. Mr. Routh mentioned that the electric power sector contributes only about one-third of Pennsylvania's overall GHG emissions. It is therefore misleading to suggest that Pennsylvania has already reduced emissions beyond Governor Wolf's 26% goal for 2025, given that this goal refers to emissions across all sectors of the economy. Meanwhile, more recent analysis from the Intergovernmental Panel on Climate Change (IPCC) shows that overall emissions need to decline by about 45% by 2030 (from 2010

levels) to limit warming to 1.5 °C and reach net-zero by mid-century. While this proposed Pennsylvania budget trading program is not, by itself, sufficient to tackle the problem, it is an important and necessary part of the solution. The Council urges DEP to establish an ambitious cap sufficient to drive significant emission reductions.

A starting base budget can also be lower than projected emissions because covered facilities will have time to plan for regulatory compliance. Furthermore, this budget should decline annually by at least 3%, which is consistent with the existing RGGI program, and DEP should consider a more stringent rate of decline to achieve a 45% reduction by 2030. Council urges DEP to provide for a mechanism to adjust the base budget for 2022 or 2023 if actual emissions are lower than currently projected.

The Council does not agree that the best solution to waste coal piles is burning them, while other cleaner and safer alternatives exist. The proposed set-aside account is designed to ensure that Pennsylvania waste coal power plants will not incur significant compliance costs under the proposed carbon budget trading program, but the Council does not support offering special treatment to any particular generation source category. The Council urges DEP to reconsider this set-aside account, including consideration of a revised definition for “legacy emissions” and a sunset provision that may include a fixed termination date. The commonwealth has clear and considerable authority under the Air Pollution Control Act to establish a CO₂ budget trading program, and this would be true even if RGGI did not exist.

Christopher Mullen representing Vicinity Energy, one of the largest owner-operators of energy district systems in the United States, provided comments. Vicinity Energy operates 13 heating and cooling districts in the US. Their largest district is Philadelphia, where they serve approximately 200,000 customers, 400 buildings, and over a billion square feet. Vicinity Energy’s largest customers are University of PA, City of Philadelphia, West Chester University, Drexel University and Grays Ferry Cogeneration, a 160 MW co-generation plant. Grays Ferry sells its power to PJM grids, recaptures its recycled waste heat through the cogeneration process and delivers it to Vicinity Energy. When Grays Ferry is unavailable or uneconomical and wet steam is needed, Vicinity runs a state-of-the-art boiler to make steam. This type of co-generation is the most sustainable use of natural gas for power generation. It is an efficient solution to recycle waste heat for power generation. The simultaneous production of power and thermal energy consumes less fuel than would be consumed separately and as a result produces less system wide emissions. However, the RGGI model rule has unchecked consequences for combined heat and power (CHP) units. CHP units over 25 MW must procure credits for all of their emissions, including those associated with useful thermal energy. If that thermal energy was not produced by CHP plants but rather a stand-alone boiler, it would not be covered by the RGGI regulation and the boiler operators wouldn’t be required to procure emissions credits. This provides a disincentive to CHP units and would increase separate thermal generation, increasing overall emissions. We commend the Department recognizing value of CHPs with the limited CHP exemptions that were proposed; however, that does not address large scale CHPs that need to deliver power to the grid due to the amount of steam they are producing to sell in their district. To address the immediate nature of large CHPs and to account for the environmental benefit CHPs deliver, Vicinity proposes Pennsylvania incorporate thermal

exemptions or set asides like other states including Massachusetts, Connecticut, New Jersey, and Maine. EPA's clean power plan has a provision to account for the value of thermal energy. EPA's clean power plan allows power plants to reduce their compliance emissions by the amount of thermal energy they sent out. Vicinity suggests PA evaluate Massachusetts's use of thermal exemptions. In Massachusetts, Vicinity operates a 200 MW co-gen that feeds the City of Boston district. Under the Massachusetts useful thermal exemption, a CHP unit can subtract from its emissions the amount of emissions contributed in production of thermal energy. It is important to know the use of thermal exemption in all the states only applies to emissions associated with the thermal energy. These power plants are still required to follow all RGGI rules and are required to procure emissions that match their electrical production but not the thermal production. It is our hope PA will look into other states and evaluate and incorporate the use of thermal exemption in the final rule.

Vince Brisini, Olympus Power, LLC stated that he believes this program is going to force to retire the coal fire electric generating units and that some of the old power units will be retired and some of coal power units will switch to natural gas. He stated that RGGI or RGGI like programs will not force renewable electric generation as it has not been in RGGI states even as they continue to pass legislation to force renewable integration. He stated that he believes it is not going to help PA's nuclear plants and will reduce the amount of electricity exported by PA. In 2018 RGGI imported over 15% of the power from the non RGGI areas. A good example is that in the RGGI group, Delaware and Maryland, decreased their residential prices. At the same time, they stopped making their own power and imported more power. In the case of PJM, PA is the provider of power so we know from this fact that RGGI states can import power from other areas, they will. Our lost generation will be replaced by non RGGI PJM states. Now, something else is likely to occur with natural gas development moving from PA to Ohio. Ohio is prime for this due to legislation that was passed to support nuclear. It is only going to generate about \$175 to \$200 million dollars per year and we also know that we are going to have at-least \$2.6 billion dollars in economic impact in just Armstrong, Indiana and Allegheny counties. We know direct job loss will be over 620 people and indirect job loss will be 7000-8000 jobs. With all of this in mind, I would say in comparison to 2005, the electric generating sector has achieved more than 30% reduction without participating in RGGI. While I hear PA is the fifth largest emitter of CO₂, but it is much lower in carbon intensity

John Dernbauch, Widener University Law professor, praised DEP and the staff for taking the initiative for the RGGI rule and acknowledged all the efforts required in this rulemaking. Mr. Dernbauch indicated that he was one of the petitioners to have PA establish an economy-wide cap and trade program rulemaking for DEP. Mr. Dernbauch indicated that he wanted to go beyond identifying the value of this with a couple of observations. There is lots of evidence for the state level programs to reduce greenhouse gas emissions, including coal and other benefits in reducing GHG. Mr. Dernbauch encouraged the Department to make sure those cost-benefit analyses are done, and those benefits are fully acknowledged and developed. The benefits of reducing GHG emissions are more broadly felt than simply in terms of climate change but there are other benefits that come with economic development, job creation, reduced prices because of energy efficiency, industrial development and other significant benefits which should be

considered. Filing this petition for reduction of GHG in PA to zero by 2050 flags the issue as contentious. There is lots of work to be done and joining RGGI program solves part of the problem. However, how can it be controlled globally as PA is responsible for only 1% of the problem? We can't lose sight of the problem in front of us. We need to relay lots of information to workers actively involved in working on reduction of GHG. It is not clear in the presentation how much it will incur joining RGGI but full efforts to reduce GHG to zero will require workers to be involved. Mr. Dernbauch encourages the Commonwealth broadly to get involved and doesn't think it is only a DEP issue, but thinks is a very good process to start with and look forwards to hearing more in the future.

Driving PA Forward Update

Samantha Harmon provided an update on the Volkswagen grant program.

Patrick O' Neill asked if any ports or airports applied under this program. Samantha Harmon responded that three applications were received, one was not eligible and the other two are airports.

Patrick O'Neill suggested DEP double check with the Port of Philadelphia. He mentioned that they talked several years ago, and they did not think they will be able to use it, as ships coming into Philadelphia are not equipped. Mr. O'Neill mentioned that these ships work similar to airplanes as planes come in and plugin for the heating and air conditioner. The issue with the cargo ships is that they don't have a plug or extension cord to plug in, but perhaps Philadelphia could still use the program.

Jayme Graham asked about the amount of money available for Marine and Rail grant program. Samantha Harmon responded it is ten million dollars.

John Shimshock mentioned the link to Greenpeace website (<https://www.greenpeace.org/usa>) and indicated that there is satellite technology available that has an imaging camera where a satellite orbits around the earth and takes images to detect NO₂ in the atmosphere. Mr. Shimshock mentioned that by clicking on the link one can see the area of interest on the map and it also suggests correlation between population, vehicle density, other types of sources or any issues related with air quality.

Rob Altenburg commented on the map Mr. Shimshock indicated. He mentioned that urban areas tend to be VOC limited and rural areas tend to be NO_x limited. Therefore, when viewing a rural area, you can't get the NO_x limit in the whole area on the map, because there is so much background VOC in the area that is catching NO_x from the atmosphere. Mr. Altenburg indicated that seeing the whole pattern shows clearly the transportation problem in urban areas.

Report on Rulemakings/State Implementation Plan Revisions

Kirit Dalal provided a report on Rulemakings/State Implementation Plan Revisions.

Kirit Dalal praised and announced the retirement of Kristen Furlan to which committee agreed and applauded Ms. Furlan on her retirement.

John Shimshock mentioned that in the last AQTAC meeting we discussed the CSAPR and the good neighbor SIP and asked for an update. Kirit Dalal responded that the DEP discussed with EPA and asked for guidance on which path to follow. EPA suggested following the WV SIP and provided some information on which state SIP should not be followed.

Mr. Shimshock mentioned that on the CSAPR and CAIR, the Department submitted the required information to allow PA to implement CSAPR as SIP and asked for any update. Mr. Shimshock further asked if PA CAIR requirements under chapter 145 are still on the books. Kirit Dalal agreed that yes, it is true and mentioned that the Department is working to remove it from the books and resolve the CSAPR.

Jayme Graham provided an update on the Allegheny SIPs.

Kevin Stewart asked what the next step is for RACT III after today's presentation. Kirit Dalal responded the next step will be AQTAC, Small Business Compliance Advisory Committee (SBCAC) and CAC. Mr. Stewart asked about the maintenance plans as there were 12 and the information only listed ten of them. Kirit Dalal responded that is correct, there are 12 of them but there may be a typo in the handouts.

Kevin Stewart mentioned the Department is anticipating bringing the proposed draft of CO₂ budget Trading Program in April to AQTAC and there are a few committee members who have expressed a concern with the timeframe. Mr. Stewart indicated that there may not be sufficient time for the committee to review the material and provide a consensus. Mr. Stewart further indicated that the committee has not seen a preliminary draft, background information on the data, or analysis including cost benefits etc. and expressed a concern about processing all that information in 1-2 weeks of time to make a sound decision on the vote.

Patrick O' Neill indicated that several committee members have expressed the same concern as Mr. Stewart about reviewing and processing the material in a short period of time. Mr. O' Neill asked the Department's standing on this. Mr. O' Neill mentioned that it is the fastest rulemaking schedule since his participation in AQTAC and suggested a second meeting in May or April to have another chance to review information and have the discussion. Mr. O' Neill further indicated that it will be very short for the committee to have a two week of review period prior to the meeting in April. Viren Trivedi indicated that the Committee will have sufficient time to review the Annex as there may not be many changes from what was presented in the morning and only numbers may change including some changes to the set-asides.

Mr. O' Neill clarified that the issue is reviewing the data analysis, cost benefit analysis, and some of the issues raised by the Committee including the issue of leakage and the type of analysis conducted by the Department.

Gary Merritt suggested the Committee recommend another meeting prior to a meeting to vote on it. Patrick O'Neill asked Mr. Merritt if he is proposing another meeting in March. Mr. Merritt indicated that there should be another informational meeting regardless of time limit.

Patrick O'Neill asked for feedback from other Committee members and agreed with the recommendation of having another meeting to review and discuss the material and be clear on the analysis conducted by the Department.

Gary Merritt motioned to recommend the following to DEP: There will be an extra AQTAC meeting for the purposes of discussion of the CO₂ proposal to be followed up with a second meeting at which there will be an action item for the voting.

Robert Altenburg suggested either a conference call or a webinar prior to regular AQTAC meeting.

Patrick O'Neill motioned to amend the motion as follows: AQTAC recommends to DEP that prior to meeting to vote on CO₂ budget trading program there be either a second meeting or a conference call or a similar effort for AQTAC to hear analysis and justification for the program. It was seconded by Kevin Stewart. The motion was passed by a vote of 9-0-0 (yes/no/abstain).

OTHER AQTAC BUSINESS / OPEN DISCUSSION

It was discussed to add the following three bullets at the bottom on the agenda.

Note:

- The order and timeframe of agenda items are subject to change.
- Interested parties should arrive early to ensure an opportunity to comment on agenda items.
- Commenters are welcome, but not required, to submit written versions of their intended comments within 24 hours of the meeting to Kirit Dalal or Hitesh Suri with CC to Patrick O'Neill.

Next Meeting: The next AQTAC meeting is scheduled for 9:15 a.m. on Thursday, April 16, 2020.

Adjournment: Robert Altenburg motioned to adjourn, seconded by Kevin Stewart. With no further business before AQTAC, Patrick O'Neill adjourned the meeting at 1:30 PM.

Minutes prepared by Hitesh Suri, Air Quality Program Specialist (AQPS). For additional information about AQTAC, please contact Kirit Dalal at kdalal@pa.gov or (717) 772-3436. For any minutes related questions contact Hitesh Suri at hsuri@pa.gov or (717) 772-3963 or by visiting the AQTAC Web page at:

<http://www.dep.pa.gov/Business/Air/BAQ/AdvisoryGroups/Air-Quality-Technical-Quality-TechnicalAdvisory-Committee/Pages/default.aspx>