

Pennsylvania Department of Environmental Protection
AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING

Minutes
October 17, 2019

Air Quality Technical Advisory Committee (AQTAC) Members Present

Michael Winek	Patrick O'Neill
Gary Merritt	John Shimshock
Robert Altenburg	Michelle Homan
Joseph Duckett	Josie Gaskey
Kevin Stewart	John Tissue
Joseph Guzek	Michael D Fiorentino
Kimberley Coy	Jayme Graham
Charles McPhedran	

Department Staff Present:

Kirit Dalal	Allen Landis
John Krueger	Neil Bakshi
Krishnan Ramamurthy	Jesse Walker
Hitesh Suri	Nancy Herb
Lucas Hershey	Susan Foster
Sean Wenrich	Randy Bordner
Viren Trivedi	Kristen Furlan
Bryan Oshinski	

Others Present:

Vince Brisini – Olympus Power	Teresa Irvin McCurdy – TD Connections
Mathew Page – Trinity Consultants	John Schmelzle- Power Engineering Inc.
Terry Black – ERM	Stephanie Hasanali – Dept. of Health
Katherine Vaccaro – Manko Gold	Stephen Caruso – PA Capital Star
Dave Sherman – Range Resources	Chuck Haney - EMAP
Jennifer Flannery – CEC	Patrick Henderson – MSC
Aube Benson -MSC	Alisa Harris - UGI

CALL TO ORDER

Patrick O'Neill, AQTAC Chair, called the October 17, 2019, meeting to order at 9:15 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.

Approval of Minutes

The minutes of the August 15, 2019 meeting were discussed by the AQTAC members. There were few minor corrections which were amended as requested by the committee. The minutes were approved as amended by a vote of 13-0-2 (yes/no/abstain).

Patrick O' Neill explained the election of the committee Chair and Vice-Chair. The election for the Chair and Vice-Chair of AQTAC for the new term was conducted. Patrick O'Neill was elected as the Chair and Jayme Graham was elected as a Vice Chair of AQTAC for the new term beginning July 1, 2019 through June 30, 2021.

The AQTAC meeting dates for calendar year 2020 were announced as following:

February 13, 2020
April 16, 2020
June 11, 2020
August 13, 2020
October 15, 2020
December 10, 2020

ACTION ITEM

Draft Final Rulemaking: Revision of maximum allowable Sulfur Content Limit for No. 2 and Lighter Commercial Fuel Oil

Bryan Oshinski provided a PowerPoint presentation on the Draft Final Rulemaking: Revision of Sulfur Limits in No. 2 and Lighter Commercial Fuel Oil.

Joseph Duckett asked: On slide #7, you listed one comment opposed to the proposed rulemaking. Is this referring to the comment from the senator's office? Bryan Oshinski responded yes.

Charles McPhedran asked if the Department looked at No. 4, 5 and 6 oils. Bryan Oshinski responded that PA DEP did not look at No. 4, 5 and 6 fuel oil as part of this rulemaking, as this is outside the scope of this rulemaking. Mr. McPhedran continued and asked if sulfur emissions from heavy grade fuel oil could be an issue for haze. Mr. Oshinski responded, the sulfur limits are higher for number 4, 5 and 6 oil and can be found in 25 Pa. Code 123.22. Mr. McPhedran added that the sulfur content limit for No. 4, 5 and 6 fuel oil are much higher.

Patrick O' Neil suggested that the sulfur content limits are 2500 or 5000 parts per million (ppm). Bryan Oshinski confirmed that yes, it is 2500 for #4 and 5000 ppm for number 5, 6, and heavier fuel oil. Mr. O' Neil mentioned that the Philadelphia and New York City is phasing out the heavy fuel oil. Mr. Oshinski asked Mr. O'Neil for clarification, if he was just talking about #6 fuel oil? Mr. O'Neil responded that he is talking about #4, 5 and 6 oil.

Joseph Guzek made a comment that there are no more manufactures and you cannot get #4, 5 or 6 oil. He mentioned any boiler facilities he knew who were burning #4 fuel oil converted to the natural gas. Anyone who was burning the oil are down to 0.5%.

Patrick O'Neill mentioned that several facilities in Philadelphia use the oil as a backup fuel and the primary fuel is natural gas. They use #6 oil, but Air Management Services is suggesting these facilities to use #2 oil as a backup.

Rob Altenburg informed that according to the U.S. Energy Information Association (EIA) information on the availability of #2 oil is limited to 15-500 ppm range and asked how much is sold in PA. Bryan Oshinski referenced a slide in his presentation and explained that #2 fuel oil with a sulfur content above 15-500 ppm is very small in terms of what is available in the Northeastern United States, close to 1%, but that Pennsylvania is the only remaining state who has become a dumping ground for the higher sulfur content #2 fuel oil.

Joseph Duckett asked if the facility with a gas boiler can use #6 oil as a backup fuel with the same burners used for the natural gas? Patrick O'Neill clarified that the facility needs to have a separate burner even in a case of switching from #2 oil instead of #6 fuel oil. He briefly described how burners are set up for different fuels.

John Tissue inquired that if a facility has a left-over fuel from the past and if it is closer to 15 ppm, is it ok to be used? Bryan Oshinski responded that there is no end date for the usage as long as the facility is an ultimate consumer.

Josie Gaskey asked, if the final-form rulemaking is not finalized by May 2020, will the compliance date be pushed further? Bryan Oshinski informed her that the compliance date right now is September 1, 2020 and explained that if it would get pushed back by a month, there will still be a 60 days window for which PA DEP is aiming to comply. The date in the presentation is the tentative date and hoping to send the package to EQB by January 2020 with the final-form rulemaking being finalized in late April or May 2020.

Kevin Stewart showed a concern about potential health effect with the higher sulfur fuel vs. the lower sulfur fuel and he asked if PA DEP considered to address the use of higher sulfur fuel. Bryan Oshinski clarified that this rule emphasizes on the low sulfur fuel as DEP was to comply with 15 ppm requirements as per the Mid-Atlantic/Northeast Visibility Union's (MANE-VU's) request in 2007 and then again in 2017. In addition, Krishnan Ramamurthy provided an explanation on the approach taken by PA DEP and indicated that Mr. Stewart's concern could be addressed later, if warranted.

John Tissue made a comment that there is a MACT (Maximum Available Control Technology) rule which is more stringent to control the emissions of the high sulfur contents.

Patrick O'Neill asked if there were any further questions or comments from the committee or anyone in the audience before the committee votes on the rule. No additional comments were made.

The committee voted on the recommendation for DEP to proceed with submitting the Draft Final Rulemaking: Revision of maximum allowable Sulfur Content Limit for No. 2 and Lighter Commercial Fuel Oil to the EQB. The committee approved the recommendation by a vote of 15-0-0 (yes/no/abstain).

INFORMATIONAL ITEMS

Oil and Gas Production (ONGP) health concerns and the ONGP reports

Stephanie Hasanali provided an update on Oil and Gas Production (ONGP) health concerns and the ONGP reports.

John Shimshock indicated the presentation reviews the associations between unconventional ONGP and health effects in PA as indicated by observational epidemiologic studies and asked what are these associations? Stephanie Hasanali confirmed Mr. Shimshock is talking about statistical associations and responded that the Department of Health (DOH) did not find the association but is reporting on findings from observational epidemiologic studies. The literature review conducted by DOH found a relationship between unconventional ONGP and health effects. Dr. Hasanali mentioned that it depends on the study how it is measured, but people living closer to wells have more problematic health effects.

Michelle Homan requested to share the literature with the group and asked if the studies in the literature were done in Pennsylvania only. Stephanie Hasanali responded that most of the observational epidemiologic studies have been done in Pennsylvania and Colorado, and a few in Texas. Ms. Homan asked further if DOH has any outreach plan moving forward. Dr. Hasanali responded that the DOH does not have any outreach plan right now. Ms. Homan asked if PA DEP has conducted any air monitoring near the well sites in PA. Krishnan Ramamurthy acknowledged the concern and responded that the PA DEP conducted limited short-term monitoring in the Northeast and some in Southwest PA. PA DEP also conducted a long-term air monitoring study near the Houston, PA gas processing station (MarkWest facility) in Washington County.

Joseph Duckett provided background information on the purpose of the committee (AQTAC) to request the DOH do a presentation including on the relationship between ONGP and health effects. Mr. Duckett stated that his understanding is that people will call the DOH and DOH will administer a questionnaire and asked if DOH statistically sampled any people. Stephanie Hasanali responded No.

Mr. Duckett continued to confirm that DOH has people who complained including multiple complaints and requested Stephanie to advise on how the registry works. He asked why DOH excluded conventional gas wells. Stephanie Hasanali provided the overview of the registry and responded that DOH did not exclude conventional wells. The concern has been more about unconventional wells. Mr. Duckett questioned how studies can measure the concept of general stress. Dr. Hasanali responded that the literature talks about general stress, but DOH measured

stress by psychological factors such as feeling anxious or depressed. Mr. Duckett asked about the health effects of an influx of young male workers. Dr. Hasanali responded that research has shown STD prevalence rates increase in boomtowns like those that come along with ONGP.

Mr. Duckett referred to the question asked earlier by John Shimshock about the associations and confirmed that DOH relies on the literature reviews and asked the proxy measure about distance from the wells. Stephanie Hasanali explained that it's a little more complicated than the distance to ONGP activities. Some observational epidemiologic studies include the weighted distance to wells and incorporate the depth of the well, the production volume, and phase of activity. Mr. Duckett continued to ask about the water and Air sampling. Dr. Hasanali responded that PA DEP mainly samples water supplies and DOH has only received air sampling results in one or two cases since 2011 (prior to 2017). Mr. Duckett asked one of the exposures mentioned was soil and asked what is that? Dr. Hasanali responded that soil concerns are related to erosion and runoff, some concerns about the material which runs on complainant's property, ONGP waste water used for dust suppression, etc. Mr. Duckett further asked that how does an individual imply their symptoms? Dr. Hasanali responded that it is self-reported and for an example their grass died, or plants or vegetables are not growing etc.

Michael Fiorentino observed from the report that there were 8 complaints in Greene County vs. more in Washington County and asked if this is related to population or something else. Mr. Fiorentino noted that both counties have very high numbers of unconventional wells. Stephanie Hasanali responded that it is difficult to know, but it mostly reflects the population of the county and perhaps the education level of the population in that area.

Josie Gaskey asked if DOH has looked at the existing physical condition of the complainant or have any idea of their general health before ONGP activity. Stephanie Hasanali responded no, it is one of the limitations of the registry. DOH does not measure it but relies on the complaint itself.

Kevin Stewart asked about the procedure used by DOH to address the issues which are raised and how to move to the next level in order to obtain the best quality data and more participation. Stephanie Hasanali responded that she's not the best person to ask about this, that the AQTAC group can contact appropriate personnel at DOH. Dr. Hasanali stated that DOH is planning a research proposal. Mr. Stewart inquired if this proposal will be in-house. Dr. Hasanali responded that it will be more in a form of a request for applications (RFA), competitive grant. Mr. Stewart further inquired whether DOH has collaboration with SW Environmental Health Project. Dr. Hasanali responded that DOH met with them in the past as they also have a health registry but DOH has not worked with them.

Michael Fiorentino asked if DOH made any efforts to get the co-operation from the medical community, such as primary care physicians, hospitals, doctors offices etc. to find the data on the certain symptoms or disorders or the health issues or any information on what people are experiencing. Stephanie Hasanali responded no, that option has not been explored and was not certain about why it is not being considered. [Insertion to record by DOH: While DOH does not

go out to meet doctors or ask them for medical records, we include a statement in letters written to complainants that their doctors may contact us to go over their water results and health situation. If indicated, DOH provides complainants with contact information for environmental health physicians around the state if they wish to discuss with a knowledgeable source.]

Kevin Stewart asked if there is any collaboration with PA DEP and could there be any way for individuals to make a health complaint from the PA DEP website. Mr. Stewart also clarified that if the complains are not related to the health issues but are more likely about the general issues such as exposure or noise or traffic or slurry on the road etc. Stephanie Hasanali responded that PA DEP forwards complaints to DOH if the complainant indicates a health-related issue. DOH had looked into PA DEP adding a health question on the complaint intake form which was denied for fear of being a leading question.

Patrick O'Neill asked about the intake form mentioned above. Stephanie Hasanali clarified that PA DEP has a complaint tracking system. Mr. O'Neil suggested that an individual could submit a complaint through PA DEP's online complaint form and DOH would be given access. Another suggestion was for DOH to have an online complaint form. Dr. Hasanali mentioned that DOH has their e-mail address on PA DEP's environmental complaint website, but there is not a direct link to the questionnaire.

John Shimshock suggested AQTAC reach out to local municipalities to conduct traffic or noise studies which are very economical and can be conducted easily.

Michelle Homan made a comment about the RFA by mentioning that she hopes DOH will be funding some sort of analytical study rather than a descriptive study because the descriptive studies have some limitations and would like to see RFA funds used for case control or cohort study. Stephanie Hasanali agreed and added measuring exposures more directly.

Patrick O'Neill stated that in the presentation, Stephanie mentioned that there was some evidence "about birth and respiratory outcomes" and what does it mean by 'some' evidence. Stephanie Hasanali responded that there has been mixed evidence of varying quality. Mr. O'Neil confirmed that this is the literature review done by DOH and there were some studies done by a third party who claims they made some connection. Dr. Hasanali responded that yes, some of the studies showed an association. The DOH's systematic review highlighted and analyzed the quality of each observational epidemiologic study, so that is just the way to qualify the statement.

Kevin Stewart commented that he looked into PA DEP complaint form online and found the link for DOH with a phone number. He mentioned that it stated clearly in the environmental complaint form to direct all the health related complains to DOH. Mr. Stewart suggested DOH to evaluate a way share the health-related data with the general public.

Patrick O'Neill thanked Dr. Stephanie Hasanali for the prestation.

Governor's 10/03/2019 Executive Order

Krishnan Ramamurthy provided the information on Governor's 10/03/2019 Executive Order.

Josie Gaskey mentioned that PA DEP now possess RGGI (Regional Greenhouse Gas Initiative); TCI (Transportation and Climate Initiative) and the Governor's Executive Order and asked if the PA DEP will follow a strategic plan to evaluate the whole package to make the best decision. Krishnan Ramamurthy briefly mentioned the GHG petition is being reviewed and indicated that the GHG petition and RGGI are different. The petition itself is very extensive and covers several sources including EGUs; transportation sector etc. Mr. Ramamurthy advised that in order to make the appropriate decision, a detailed analysis may be required to evaluate the implementation due to several unknowns.

Joseph Duckett asked if there are any quantitative objectives for PA DEP in terms of ambient CO₂ levels or total emissions reduced. Krishnan Ramamurthy responded that the petition calls for 2053 carbon neutrality. Mr. Ramamurthy indicated that the Executive Order does not stipulate any target but in general, it is directed to join RGGI, the RGGI has already planned on how the emissions will be reduced. Mr. Ramamurthy continued that there may be several unknown as PA DEP is joining in the middle therefore it is more important to decide what would be the cap.

John Shimshock stated that he noticed the target issue in the press release by Governor's Office that 26% reduction in emissions by 2025 and 80% reduction by 2050 as compared to 2005 and asked if that is the basis for the emissions reduction. Krishnan Ramamurthy responded that it is the ultimate goal, but by joining RGGI PA DEP will not set up a different goal. Mr. Ramamurthy added that RGGI emissions cap will be one part of the statewide emissions targets.

Patrick O'Neill asked if there are any further questions or comments and there were none.

John Shimshock presented a table with the data of electric power industry generation from primary energy sources from 1990 to 2017. Mr. Shimshock also illustrated a graph of comparison between natural gas and coal fired power plants in Megawatts/hour which included a trend of power plants sectors using subsectors.

184(c) Petition Update

Krish Ramamurthy provided, 184(c) Petition Update.

John Shimshock asked about the US EPA interest and/or the reaction to the petition? Krishnan Ramamurthy responded that the appointment to EPA is that it is appropriate as an early start attainment and the 30 days rolling average is appropriate. Mr. Ramamurthy indicated that EPA has not taken any position and their role in the comments is to make sure OTC submits the final petition

to EPA as their 18 months clock starts. Mr. Ramamurthy clarified that EPA enunciated on the 126 petition and they are aware of the development of this petition. EPA requires that all comments including the ones from advisory committees to be shared with them, but they are refraining from the public statement.

Mr. Shimshock asked when is the end of Ozone season? How is the monitoring in the area with 70 ppb ozone standard? Kirit Dalal responded that PA is looking good everywhere in the state for the Ozone season to meet 70 ppb except in the Philadelphia area. Krishnan Ramamurthy added that the season was favorable and PA DEP did not see any spikes in the western PA area. Additionally, due to higher design value for SE PA area (5 county Philadelphia area), it may be bumped up to moderate instead of current designation as marginal. Once it is designated to moderate, PA DEP would be required to do an attainment demonstration.

D.C. Circuit Court Decisions on CSAPR Rules

Jesse Walker provided D.C. Circuit Court Decisions on CSAPR Rules.

At the end of the presentation, Jesse Walker invited Kevin Stewart and Charles McPhedran if they wanted to add anything with respect to the cases with an impression of participating. Mr. McPhedran made a comment that Mr. Walker presented a good summary. Mr. Stewart clarified that he did not have role in participation, but American Lung Association National office may have been involved.

Kristen Furlan Asked if court vacated the rule or just amended it. Jesse Walker responded that CSAPR updated and rule was not vacated.

Overview of RACT 3

Sean Wenrich provided an overview of RACT 3 using a slide show presentation.

John Shimshock stated that the emission limits for boilers and large EGUs are two extremes, one being 24 hours and another 30 days average and asked if PA DEP is considering an emission limit between these two standards. Krishnan Ramamurthy responded that this is more of an enforcement issue and PA DEP will discuss with other states and do not want to rule out completely and it is acknowledged that RACT2 is significantly flexible. Sean Wenrich added that PA DEP also looks at how neighboring states implement the shorter averages and what kind of exceptions or averages they are using. PA DEP can consider incorporating that if decided to go with the 24-hour averages. Mr. Shimshock continue and asked if there is case by case sources, will PA DEP add them to another category? Mr. Wenrich answer yes, and Mr. Ramamurthy clarified the outcomes of adding another case by case category.

Robert Altenburg asked that when does PA DEP expect to bring the draft proposed rule to AQTAC? Sean Wenrich responded that PA DEP is hoping to bring the draft proposed rule back to AQTAC in an upcoming AQTAC meeting.

Charles McPhedran discussed about NAAQS emission limits for large EGUs including temperature cutoff for the SCR and asked what kind of data PA DEP possess right now. Sean Wenrich responded that PA DEP has assessed what large EGUs are doing since the implementation of RACT 2, PA DEP has Ammonia injection rate and some temperature data, PA DEP also have vendor's information for the SCR etc. it is matter of doing the data analysis with and without operation since RACT2 became effective. Krishnan Ramamurthy added that PA DEP acquired the data from different sources and need to complete the data analysis.

Kimberly Coy asked what is the status of the permits? Sean Wenrich responded that PA DEP submitted around 35 permits to EPA and issued about 60-70 which is almost half way through. Ms. Coy asked further if these are the renewals or the plan approvals? Mr. Wenrich responded that most of them are significant modification and some of them could be the plan approvals and Krishnan Ramamurthy added that unless facilities are installing the control devices to achieve case by case basis RACT limit. Mr. Ramamurthy explained that the plan approvals are only for the installation of the control device or the new sources and typically operating permit is the main instrument. Mr. Ramamurthy further clarified that once EPA published the approval of RACT2, the clock for RACT3 is started and PA DEP is working towards to submit most of the permits complying with RACT3 to EPA.

Ms. Coy asked that how does PA DEP envision to determine 130 case by case sources for RACT3. Krishnan Ramamurthy responded that PA DEP is evaluating all the case-by-case sources and planning to certify them as they are meeting the requirements. Mr. Ramamurthy clarified that PA DEP does not intend to have 130 of all sources as case-by-case but there may be some sources which can fall into that category. He further clarified that it will be addressed during the PA bulletin and the public hearing.

Public Comments

There were no public comments.

Pennsylvania Climate Action Plan

David Althoff provided an overview of Pennsylvania Climate Action Plan using a slide presentation.

Joseph Duckett asked about the cost/benefit analysis and how DEP would quantify the economic impacts of meeting the goal. David Althoff responded that ultimately, economic benefits including increases in employment are difficult to quantify for purpose of the simply meeting goal. The benefits which the Energy Office quantified are Greenhouse Gas (GHG) reductions; economic

benefits and changes in employment tied to implementation of the strategies. Mr. Duckett asked would there be a reduction in the temperature if the plan was implemented. Mr. Althoff stated that there is no way to estimate a specific reduction in temperature tied directly to the strategies in the plan. Mr. Duckett further mentioned the Paris Agreement and asked if PA DEP is taking the Paris Agreement into account when doing the modelling. Mr. Althoff asked to clarify the question. Mr. Duckett pointed out that the Paris Agreement states that accomplishing all the goals will not keep temperatures from warming beyond the ultimate temperature goal. Patrick O'Neill stated to Mr. Duckett that "Joe to be fair the Paris Agreement is supposed to be just the first step but not just supposed to be that and done" Mr. Duckett agreed and mentioned that no one really looks at the climate impact.

Mr. Duckett mentioned the DEP list of strategies also includes adaptation and then it doesn't go into details on specific adaptations. Mr. Althoff responded that to a degree it is true that the plan does not include nearly as many adaptation actions as mitigation actions. Mr. Althoff also stated that PA DEP is looking to do something about the climate problem, mitigate the impacts of climate change and adapt to the impact of the climate change. Mr. Althoff clarified that we do not know the outcome from the implementation of the strategies in the plan from the stand point of the change in the overall average temperature of the Earth.

Josie Gaskey asked for clarification if adaptation was part of ACT 70 or is ACT 70 for mitigation. David Althoff responded that our actions in response to Act 70 can apply to both adaptation and mitigation as is discussed with the Climate Change Advisory Committee, but the focus of Act 70 is only mitigation. PA DEP has the responsibility to comply with Act 70 but also desires to address adaptation as well. Act 70 ultimately requires Department to provide advice to commonwealth citizens and local government. Ms. Gaskey further stated that the presentation mentioned that there will be around 40,000 jobs created, but she thinks most of the lost jobs were higher paid jobs. Ms. Gaskey asked if PA DEP examined what the salary difference between these jobs would be? David Althoff responded affirmatively that the difference in salaries will most likely be included in the underlying data from the modeling. The details are in Climate Action Plan.

Michael Fiorentino asked about passive house standards. David Althoff responded that the passive house standards are essentially beyond code standards which attain an extremely tight buildings to the point where the building becomes able to sustain itself for number of days. The building is highly energy efficient. Mr. Fiorentino confirmed that it was mentioned that there is an 80% reduction in carbon in 2050. Mr. Althoff indicated that it is not carbon, but it is Greenhouse gasses (GHG) and that is true. Mr. Fiorentino commented that the Energy Office should encourage as many people as possible to participate in reducing GHG emissions.

Jayne Graham asked about slide 5 where it was mentioned 4% in the waste. Jayne asked if the waste was energy waste. David Althoff responded that the waste category refers to the waste management sector not energy waste. Ms. Graham made a comment that most of the time staff working on mitigation strategies are different than the staff working on adaptation and both have

a different skill set. Therefore, the two different groups should have the appropriate expertise to help work on the problem.

John Shimshock suggested that in order to meet the goal of GHG emissions reduction by 2050, more individuals need to be engaged but there may be cost and investment concerns for implementing the available options such as photochromatic windows, insulation in the house, solar panels etc. and asked if PA DEP considered these challenges. David Althoff responded that when it comes to the innovative energy products, individuals need to see the personal value in them whatever that might be to them and agreed that people need to see the need for these options so that innovation can occur, and more climate friendly products are available for use.

Kevin Stewart indicated that he wanted to respond to Mr. Duckett's comments. Mr. Stewart first clarified that there are criteria established by certain groups for passive house certification. Additionally, Mr. Stewart stated that, if PA suddenly went immediately to zero emissions, the effect of that change on planetary climate status would be hard to discern from the current status. Given that, Mr. Stewart stated how important it was to recognize and to make the case for why PA is still doing this (addressing climate change). Mr. Stewart indicated another aspect of the issue is the leadership benefit, meaning that more leadership leads to more innovation to develop better products and implementation plans that people can replicate; it will also lead to a planet that we want for everyone in the future. Mr. Stewart stated that an important aspect that should get more attention and development, is how those emulations and replications are going to be encouraged far beyond the bounds of Pennsylvania. Mr. Stewart asked about the communication strategies put in place to share this information with other groups doing similar things. Mr. Stewart indicated that, if DEP has that vision of meeting the goal of 80% emission reductions by 2050 as indicated in the report, and that goal can only be met if all states and nations meet comparable goals, the document must clearly communicate that DEP is using a planetary perspective for the work DEP is doing by looking at the long range process in how DEP achieves these goals. Mr. Stewart also stated that clearly addressing this planetary perspective in the report will confront the 'defeatist' thinking from people who ask why Pennsylvania should do something about climate change if no one else is doing anything.

Robert Altenburg commented on some of issues today regarding GHG emissions including emissions from natural gas, shutdown of coal power plants, and jobs etc. Mr. Altenburg indicated most of the people think that GHG emissions are not coming from natural gas, but even with the elimination of coal use, GHG emissions are increasing. Mr. Altenburg advised DEP to continue to seek other options beyond natural gas going forward. David Althoff responded that the model shows an increase in GHG emissions going forward in the 2018 plan. DEP has already taken this into consideration.

Michelle Homan commented that on slide 12 the "energy conservation & efficiency" is more of a behavioral change such as: drive less and walking, implementing technology modifications which includes buying an electric or a hybrid car. Ms. Homan asked that if there will be enough revenues from joining the Regional Greenhouse Gas Initiative (RGGI) so that those revenues could be used

to provide incentives to help individuals or the businesses with behavioral change or increased use of energy efficient technology. Dave Althoff responded that generally that's how Investment programs are implemented in RGGI states and at-least 25% of revenues are used for environmental benefit programs to reduce the consumption of energy or implementing clean air technologies.

Joseph Duckett discussed nuclear power using an example of an Ontario nuclear plant which generates 60% of the power. Mr. Duckett asked if the Energy Office is suggesting replacing nuclear power plants. Dave Althoff responded that the Pennsylvania's Nuclear fleet assets are modelled within the plan. While there are retirement dates for these facilities, some of those retirement dates have been extended already. Mr. Althoff indicated that going forward into 2050 it is difficult to predict the availability of the Nuclear assets at that time, but the short-term focus is to maintain the online status relative to the nuclear generation fleet, and hopefully, there will be further solutions going forward with regard to GHG reductions should they exit the marketplace due to retirement.

Michael Fiorentino discussed residential solar energy, cost, incentives and benefits including a statewide policy of encouraging individuals to install solar by providing tax credits, grants, implementation of energy efficiency, and banking on the future of solar energy for residential customers etc.

Patrick O'Neill commented that there is massive development in solar including potential community solar projects. He commented that not all the residences have the option of deploying solar energy as some rooftops may not be able to support the solar array but there are several areas of the state where deployment of solar by individuals can significantly reduce the need of energy from the grid.

David Althoff discussed reviewing the "Finding PA Solar Future" Project. This project was a 30-month program, in which PA DEP determined the pathway on how Pennsylvania could to attain 10% solar generation by 2030. Specifically, 10% of the electricity consumed in the state, not 10% of generation. This project was a stakeholder driven process that involved energy experts in Pennsylvania, at US DOE, many stakeholders and the Vermont Energy Investment Corporation, who did the modeling for the project. The model demonstrated that we can get to 10% solar by 2030. Mr. Althoff indicated that Pennsylvania would need to build approximately 11 GW of solar by 2030. The Project identified 15 strategies or policies some of which have recently occurred or are in the process of occurring. Mr. Althoff also indicated that there enough rooftops to support solar in Pennsylvania and there are numerous jobs created with residential and commercial rooftop solar. Mr. Althoff stated that rooftop solar panels in Pennsylvania are often not as cost effective as installing grid-scale. The plan shows that Pennsylvania needs to evaluate on how to get to 10% by building large energy solar generation facilities in the future.

Mr. Fiorentino asked if PA DEP determined what the percentage of the 11 GW by 2030 will be residential. David Althoff responded that PA modeled two scenarios; one was 10% of 11 GW

being solar residential and another was 35% of 11 GW solar residential. Mr. Althoff indicated that it was a conservative way to do the scenarios and evaluate the appropriate approach. Mr. Fiorentino further asked if PA DEP found out the number of rooftops. Mr. Althoff stated that he was not sure of the exact number, but the report is on Department's webpage under "PA Solar Future Project".

Report on Rulemakings/State Implementation Plan Revisions

Kirit Dalal provided report on Rulemakings/State Implementation Plan Revisions

John Tissue commented that Mr. Ramamurthy mentioned during his presentation about HEDD (high electric demand days) and asked if PA DEP is doing something about it. Kirit Dalal responded that if necessary, PA DEP may consider exploring available options in case Philadelphia area gets bumped from marginal to moderate designation for non-attainment area.

OTHER AQTAC BUSINESS / OPEN DISCUSSION

Patrick O' Neill summarized the to-do list which included the following: AQTAC dates for year 2020 will be e-mailed to AQTAC members; Request Department of Health to circulate the literature review to the AQTAC members.

Next Meeting: The next AQTAC meeting is scheduled for 9:15 a.m. on Thursday, December 12, 2019, in Room 105 of the Rachel Carson State Office Building, 400 Market Street, Harrisburg, PA.

Adjournment: Kevin Stewart made a motion to adjourn, and it was seconded by Josie Gaskey. With no further business before AQTAC, Patrick O'Neill adjourned the meeting at 2:15 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-AdvisoryCommittee/Pages/default.aspx>