CLIMATE CHANGE ADVISORY COMMITTEE
MEETING MINUTES
October 1, 2019
10:00 a.m. – 3:00 p.m.
Conference Room 105
Rachel Carson State Office Building

MEMBERS/ALTERNATES PRESENT:

Vice-Chairperson Steve Krug
Greg Czarnecki (for Cindy Dunn)
Terry Bossert
Rachel Gleason (for Zachery Smith)
Representative Steve McCarter
Timothy Vickey (for Rep. Ryan Bizzarro)
Robert Graff
Gary Merritt
Jaret Gibbons
Joseph Sherrick (for Gladys Brown Dutrieuille)
Paul Opiyo (for Dennis Davin)
Patrick Henderson
Mark Mondor
Leda Lacomba (for Rep. Marty Causer)
Sam Lehr (for Alissa Burger)
Luke Brubaker
Lindsay Baxter

MEMBERS ABSENT:

Chairperson Mark Hammond
James Felmlee
Zakia Elliot

PA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) STAFF:

Kerry Campbell, Lindsay Byron, Heidi Kunka, Amanda Eyer, Dave Althoff, Meredith Dibert, Allen Landis, Robert Young, Jessica Shirley, Neil Shader, Beth Rementer, and Bo Reiley

INVITED GUESTS:

Franz Litz, Luke Wisniewski, Robert McKinstry

MEMBERS OF THE PUBLIC:

Steve Morris, Grant Gulibon, Dave Gelman, Liz Robinson, Kevin Sunday, Andrew Zwally, Roy Gothie, Travis Gery, Evan Endres, Laura Legere, Colton Brown, Brian Megali, Emily Watts, Bob Barkanic, Robert Routh, Haley Book

MEETING:

The October 1, 2019, meeting of the Climate Change Advisory Committee (CCAC) was called to order at 10:01 a.m. by Vice-Chairperson Steve Krug. With 17 of 20 seated members present at the start of the meeting, a quorum was established.

MINUTES:

The minutes of the June 25, 2019, CCAC meeting were presented to the committee to approve. A motion to pass the minutes was made by Robert Graff and seconded by Patrick Henderson. The motion carried by a voice vote and passed. Abstaining from the vote were Lindsay Baxter and Gary Merritt.

MEETING SUMMARY: (This narrative provides a summary of the discussions that took place during the meeting. It is not a transcript of the proceedings.)

Cap and Trade 101 Presentation

Franz Litz, of Litz Energy Strategies presented on Cap and Trade. Mr. Litz is a lawyer, with background in developing cap and trade programs, including the Regional Greenhouse Gas Initiative (RGGI). He is currently providing consulting services for Georgetown Climate Center, and his presentation covered the key elements of cap and trade, and reflected on how states can link up to RGGI.

Mr. Litz outlined the steps involved in designing a carbon cap and trade program. He said that states must first decide what sources will be covered by the program (fossil fuel powered power plants in the case of RGGI), then determine current emissions to set the initial emissions budget (baseline emissions). The next step is to decide how much the emissions cap will decline over time. Mr. Litz noted that business-as-usual (BAU) emissions are already declining in part due to fuel switching from coal to gas. Jurisdictions allocate allowances equaling one allowance per ton of CO_2, and the available allowances decline over time in accordance with the cap. Options for distributing allowances include direct distribution to entities or through auctions. The majority of jurisdictions auction allowances quarterly and use revenues to invest in energy efficiency, renewable energy, and rebates to consumers to offset costs. Mr. Litz informed the audience that Virginia's plan is to consign allowances to auction – a process by which allowances are given to utilities, utilities submit them for auction where they are sold, and proceeds are returned to the utilities.

Mr. Litz stated that emissions sources (power plants, in the case of RGGI) measure, monitor and report emissions. Periodically (every 3 years in RGGI) sources must ensure that they have enough allowances in their account to cover their emissions. Historically, this type of program has resulted in high levels of compliance.

Mr. Litz stated that allowance prices in RGGI are determined in two ways: by the auction clearance price at the time of auction, and on the secondary market where allowances can be traded. A portion of this price flows through to electricity consumers, so cost control mechanisms are also in place. These mechanisms include a Cost Containment Reserve (CCR) – where more allowances are added when a ceiling price is triggered, and an Emissions Containment Reserve (ECR) – where allowances are removed when cost falls below pre-determined price floor. Computer modeling helps set these thresholds by predicting allowance prices with different cap levels. RGGI's price floor is $2, below which allowances will not be sold. Mr. Litz stated that Virginia chose to do consignment auction so they could give the allowances to the regulated entities while still maintaining these market-based pricing mechanisms.

Mr. Litz presented a timeline of RGGI development and implementation. New York's governor initiated planning with other states in 2003. Seven governors initially signed the resulting Memorandum of Understanding (MOU) in 2005, and ten states were on board when the first compliance period started in 2009. Scheduled program reviews in 2012, 2016, and 2021 allow states to evolve program design, as needed. New Jersey had dropped out of the program under Governor Christie, and will be back onboard in Jan. 2020. Virginia will rejoin in 2021 if the legislature permits.

Mr. Litz shared that RGGI has capped in emissions reductions of 47% since 2008, 90% more than non-RGGI states. (Acadia Center Sept 2019 report). He stated that RGGI has been a modest program in terms of price, with the auction clearing price initially at the floor price, and allowance prices mostly staying below $5.

Mr. Litz stated that RGGI is made up of individual state programs that are linked by a mutual acceptance of other states' allowances. A new state would draft their own rule, and link with the existing RGGI states. He said that states collaborated on developing a shared auction platform, tracking system, and market monitor. RGGI Inc. supports these shared efforts. When linking, states need to consider the compatibility of the design of their state's program with existing RGGI states, comparable stringency of the emissions cap, and willingness to participate in program administration.

At the conclusion of Mr. Litz's presentation, he clarified that the RGGI program is exclusive to power plants. Mr. Graff asked how RGGI handles imports of electricity. Mr. Litz answered that in California importers must hold allowances, but they do not in RGGI. Mr. Graff stated that states could then have clean energy generation in state, but import cheaper, dirtier energy. He asked which RGGI states are net importers and exporters. Luke Wisniewski interjected that Maryland does conduct analysis to determine if there is a problem with leakage (the importing of dirtier electricity from non-RGGI states), and that it has not been a problem to date. Mr. Litz clarified that RGGI itself has no mechanism to address imports.

Mr. Graff asked for confirmation of 47% emissions reduction figure, and indicated that reductions are primarily due to fuel switching from coal to natural gas. He also asked if analysis had been done on the source of emissions reductions (efficiency measures vs cleaner fuel). Mr. Litz cited an econometric analysis done by Duke University, which concluded that half of emissions reductions could be attributed to RGGI.

Lindsay Byron asked that the committee hold further discussion until the conclusion of the second presentation.

Gary Merritt asked for data on specific states' generation in 2005 and to date, reductions in generation, and import levels for each state. Mr. Litz responded that having more coal makes success with this kind of program easier. Mr. Litz added that Pennsylvania is a massive exporter, so we would want to ask all of those questions, as well as impacts on exports.

RGGI Overview

Luke Wisniewski of Maryland's Department of the Environment gave a presentation on RGGI. Mr. Wisniewski has been involved in RGGI for at least 12 years. He said that the program covers fossil fuel burning power plants with nameplate capacity of 25 MW or greater. Ten states are currently participating with New Jersey rejoining beginning January 2020. Virginia has promulgated regulation to join, but is blocked by the legislature from joining until at least 2021. Mr. Wisniewski stated that most allowances are sold at auction, and proceeds are used to fund energy programs. RGGI is a cap and invest program, wherein the funds are invested into energy programs, such as renewable energy and energy efficiency. Maryland also uses funds to help low-income households.

Mr. Wisniewski shared that the program started in 2006, and was the first of its kind. The first auction opened in 2009, with emissions well below cap. This was partially due to reduced economic activity, low gas prices (fuel switching), and mild weather. A program review was conducted in 2012 to tighten the cap by about 45%. The cap is designed to decline by 2.5% annually through 2021. Mr. Wisniewski clarified that these changes are implemented by each state individually, and that RGGI Inc. is a non-profit organization formed to provide services to RGGI states. He stated that RGGI states have committed to additional 30% reductions between 2020-2030, and that the next program review will be in 2021. Mr. Wisniewski presented a graph of allowance prices over time. Pre-2013 market prices showed a small spike, then hit the price floor, and began rising in 2013 until reaching a high of nearly $8 in 2016. Mr. Wisniewski stated that it is believed that companies were buying up allowances as obligations to be used against the Federal Clean Power Plan, and when that went away in 2016 prices dropped again.

Mr. Wisniewski stated that allowances are sold at quarterly auctions run by RGGI Inc, and proceeds are allocated to participating states. He said that $3.2 billion have been raised region-wide to date, and that the original agreement stipulated that 25% of proceeds would go toward investments that benefit the environment. In Maryland, over half of proceeds go toward direct bill assistance programs. He shared that RGGI conducts an annual analysis of the impacts of investments and publishes results in a Proceeds Report, available online.

Mr. Wisniewski shared that independent estimates of RGGI's impacts have been conducted, and results of these studies indicate that RGGI has resulted in reduced carbon emissions, boosted economic growth and employment, and improved public health. He said that the effects of RGGI on electricity cost is difficult to determine, but analysis indicates that investments in energy efficiency and renewable energy have more than offset price increases.

Mr. Wisniewski stated that the RGGI model rule was developed through collaboration between the participating states, and each state promulgates regulations that are consistent with the model rule. The regional cap is simply the sum of each participating states' allowance budgets. He shared that states that wish to join RGGI would need to develop programs with comparable stringency, which is determined using modeling, with the goal maintaining steady allowance prices when new states join. New states' programs must also have consistent program elements with existing RGGI programs, and governance that allows their participation. New states would need model their programs out to 2030. Mr. Wisniewski indicates that documentation on RGGI design and program reviews are available on RGGI's website for reference. A pre-existing model is also available for new states to help design their programs. Individual state programs must consider how they will allocate allowances, and how they will implement important elements such as the price floor, CCR, ECR, and bank adjustments in response to program reviews. Consistency between states' programs provides some stability to the RGGI market.

Mr. Wisniewski presented the RGGI development and implementation timeline. Program Reviews were conducted in 2012 and 2016. The next review will be conducted in 2021, where cap reductions will be planned out to 2040. He also shared that the 40th auction in 2018 netted $3 billion in proceeds.

Mr. Wisniewski concluded his presentation by saying that RGGI states are available to assist Pennsylvania if we decide to pursue participation with RGGI.

At the conclusion of Mr. Wisniewski's presentation, both presenters were invited to rejoin the table for a discussion with the committee.

Patrick Henderson asked Mr. Litz for clarification on utility structure in Virginia. Mr. Litz replied that Virginia's utilities are traditionally regulated vertically integrated utilities for the most part (80%), and that Pennsylvania is deregulated state, similar to other RGGI states. Mr. Henderson asked if allowances could be purchased by non-generators and removed from the market. Mr. Litz responded that the auction is open to anybody, so it is possible, but has not yet been an issue. Mr. Wisniewski added that only certain states have designed their programs to allow retirements, some states can hold allowances and not put them back into the market, that that the next program review will consider retiring allowances.

Mr. Henderson asked if new states' utilization of proceeds would be subject to review and approval by existing RGGI states. Mr. Wisniewski answered that states would be encouraged to provide a general layout of planned proceed allocation, but explicit details of the programs is not required.

Mr. Henderson stated that there has been a 17% reduction in emissions from 2009-2016, and requested that Mr. Litz share the data on emissions reduction cited in his presentation. He stresses that emissions reductions should be looked at using 2009 as a baseline in order to draw meaning correlations with the implementation of RGGI.

Mr. Graff discussed that between 2004 and 2016 Massachusetts emissions were reduced by about 50%, in-state electricity generation decreased, and electricity imports increased, while Pennsylvania's emissions were reduced about 9% and exports increased. He voiced concerns that the imported energy could be of less quality than in-state generated electricity. Mr. Litz pointed out that Massachusetts is not a great example due to the difficulty of opening new power plants there. Mr. Graff asked how RGGI compared to other policies, such as Renewable Portfolio Standards (RPS), in terms of GHG reductions and cost effectiveness. Mr. Litz replied that there are many economic studies that compare instruments for GHG reductions, and economists tend to support carbon pricing over other policies. Mr. Litz added that, while all of these policies have helped reduce emissions, RGGI allowance prices have remained very low, and the program has been effective in locking in emissions reductions. Mr. Litz predicts that Pennsylvania will likely remain a net exporter, due to the commonwealth's natural gas advantage, large amount of exports, and the low allowance price. Mr. Wisniewski added that leakage reports indicate that a lot of imports are coming in from hydro generation in Canada, so it is a "clean" source. Mr. Wisniewski added that programs supporting energy efficiency are easiest to implement, RGGI is second, and renewable energy deployment is third due to capital cost, but success depends on all of these approaches.

Gary Merritt stated that Maryland's electricity generation was much lower in 2017 than 2007, while imports where greater in 2017 than 2007. Mr. Wisniewski respond that Maryland's historical imports have fluctuated between 20-40 million MWh, and that 2017 was an anomalous year for energy use due to unseasonably mild weather patterns. Mr. Wisniewski also stated that Maryland has recently added significant capacity with three combined cycle natural gas plants.

Mr. Merritt also stated that Pennsylvania's reference year should be the same as Maryland's, and asked what the anticipated 30% of additional emissions reductions will mean in terms of lost generation. Mr. Wisniewski replied that generation is being replaced with renewables and natural gas, and that legacy coal plants are going offline in Maryland. Mr. Wisniewski added that Maryland could self-generate, but some of the capacity is in coal plants that can't compete economically. Mr. Litz added that the RGGI website has modeling results available that show modeled predictions, and that renewables policies are making big contributions to emissions reductions, while allowing states to generate more internally without relying on imports. Mr. Wisniewski added that information is also available showing where states are importing from and exporting to.

Leda Lacomba inquired about the process for a state to join RGGI, including appropriate contacts and a timeline of the process. Mr. Wisniewski replied that joining RGGI can be done in different ways. He added that Maryland reached out to RGGI Inc. after a law directing the state the join was signed by their governor, and that the process was completed in about a year. Mr. Wisniewski clarified that RGGI Inc coordinates modeling, and approval to join would come from the consensus of participating states. Ms. Lacomba asked if allocating 25% of the proceeds toward environmental programs a hard and fast rule, and asked for clarification on how much can states differ in their programs. Mr. Wisniewski replied that proceeds expenditures can change over time, as programs reach saturation levels, and that other states would need to accept Pennsylvania's rulemaking for linking allowance trading in order for the commonwealth to join.

Ms. Lacomba pointed out that Pennsylvania is similar to Virginia in terms of coal resources, and asked what concerns Pennsylvania would have as a net exporter with a lot of coal. Mr. Litz replied that Virginia is a good example, and in terms of timeline, Virginia took about 18 months to develop a final rule, which was done on administrative authority. He added that many states decided to take a legislative option because the legislature has the authority to decide how revenues are spent, and if states decided to take a non-revenue generating option, they could use existing authority. He added that non-revenue generating options would include a consignment auction, and identified New York's program as an example of a quasi-consignment program. Mr. Wisniewski added that in Maryland, funds go to the Maryland Energy Administration, and the legislature broadly outlines how funds should be spent.

Representative Steve McCarter pointed out that RGGI states have RPS/Alternative Energy Portfolio Standards (AEPS) which exceed those in Pennsylvania, and asked if RGGI get involved in other states' RPS/AEPS programs. Mr. Wisniewski responded that participating states retain their sovereignty. Mr. Litz added that modeling might show that a RGGI program without complementary portfolio standards might be more expensive. Mr. Wisniewski added that RPS would be an important complementary program, because compliance requires either cleaner or less generation.

Rep. McCarter added that reduced generation to achieve RGGI's goals could be problematic for Pennsylvania as an exporter. Mr. Litz added that Virginia doesn't have RPS, but does have solar mandates in statute.

Rep. McCarter asked for clarification on how New York is distributing auction proceeds, specifically with regard to the state's Green Bank. Mr. Litz replied that reports detailing these allocations are available online for the public. Mr. Litz stated that New York was already investing heavily in energy efficiency programs, so they initially put a lot of money toward battery storage and other technologies. Mr. Wisniewski pointed to Connecticut as an example of a state using RGGI proceeds to fund a Green Bank.

Terry Bossert pointed out that the regional cap for 2020 is 75 million tons, and Pennsylvania's emissions would be that much if not more. He asked if other states would be concerned about the great increase in total emissions budget. Mr. Litz replied that, if Pennsylvania were to join RGGI, it would add to the cap by an equal amount, and that Pennsylvania would still shoot for a comparable program stringency. Mr. Bossert asked for clarification that the 2.5% per year reduction applies to each state. Mr. Wisniewski replied yes, and that the model would be built so that each entering state adds as much supply as demand, so the allowance price isn't affected.

Mr. Bossert asked how banked allowances would be treated, since Pennsylvania wouldn't have any upon entering the program. Mr. Litz replied that Virginia built bank adjustment into their program, and factored it into the stringency comparison. He added that modeling would need to be conducted for Pennsylvania to see how it would work out.

Mr. Graff asked if RGGI was only concerned with smokestack emissions of CO_2, or if lifecycle CO_2 equivalencies were also considered. Mr. Wisniewski responded that only smokestack emissions were considered, and that data was taken from EPA's Air Markets Program.

Mr. Graff asked if RGGI also tracks reduction in criteria pollutants. Mr. Wisniewski replied that many of the quantified health benefits come from reduction of criteria pollutants. Mr. Graff asked if RGGI would result in GHG reductions quickly enough compared to other tools, such as RPS. Mr. Litz replied that decarbonization studies suggest that the electricity sector needs to achieve between 80-100% reductions by 2050, and that RGGI states are on or close to the needed trajectory. Mr. Litz cited the September 2019 Acadia report, and the White House 2016 Mid Century Climate Report. Mr. Wisniewski added that Maryland has law requiring 40% reduction by 2030, and the state is on the trajectory to meet those requirements. He added that the energy sector will clean up first, and that the transportation sector will be more difficult. He said that Maryland's emissions reductions can be attributed to all emissions reduction programs, not just RGGI.

Marc Mondor raised concerns that allowances could be purchased by non-emitters, and asked if there had been any incidences of abuse. Mr. Wisniewski replied that an independent market monitor does quarterly and annual reports to look at any market manipulation, and there have been no instances of abuse to date. Mr. Litz added that auction design experts concluded that the open auction design would be most effective to achieve desired results, and that so far RGGI has an 11-year track record of success. Marc also raised concerns about costs being passed on to consumers. Mr. Litz indicated that models take into account energy mix when projecting wholesale power price impacts, and that cleaner energy sources reduce the allowances required, thereby reducing added costs.

Patrick Henderson stated that Pennsylvania's emissions are down 28% from power generation between 2009 and 2016, and that the state has a terrible record when ceding sovereignty to other entities, citing the Delaware Valley River Basin Commission as an example. He asked how Pennsylvania would exit RGGI. Mr. Litz replied that, under the US Constitution, the US Congress is the only entity that can give legal authority to a regional commission, and that states maintain sovereignty in RGGI and can leave at any time. Mr. Litz added that other participating states effectively eject a state from RGGI by declining to accept that state's allowances. Mr. Wisniewski added that New Jersey leaving was fairly smooth.

Rachel Gleason stated that EIA shows that Maryland's imports increased from 2007 to 2017, and that it is arguable that the imported electricity comes from PJM states not participating in RGGI. She added that this program could encourage the purchase of imported electricity. Mr. Litz replied that low allowance prices, combined with cheap natural gas, would limit leakage. He added that historically leakage has not been a significant issue, but it is hard to separate the effects of RGGI from other factors. Ms. Gleason asked if anyone looked at how non-implementing border states would impact generation in RGGI states. Mr. Litz cited PJM white paper that looks at border adjustment to address this issue. Ms. Gleason asked Mr. Wisniewski about the number of coal plants closing in Maryland, and the impact on revenues. Mr. Wisniewski responded that one plant is closing, but it currently producing so little that it will probably not have much of an impact. He also discussed a new 1,000 MW plant that was just added, and implications of that addition. Mr. Litz added that the fact that Pennsylvania is a big exporter of electricity bodes well for the state, and that leakage is typically talked about in terms of imports.

Public Comment(s):

Liz Robinson with the Philadelphia Solar Energy Association provided public comment to the committee. Ms. Robinson stated that it is very important to have this discussion, and that there is a huge need for education of the public. She stated that this is a new topic for Pennsylvania, and commended the committee for having the meeting today. Ms. Robinson said that few people understand the complexities, opportunities, and possibilities. Speaking for PSEA, she stated that a carbon market is the right way to proceed in Pennsylvania, and will keep competitiveness in the state. She cited the recently published Acadia study, which indicates that states with carbon markets do better economically, have lower electricity rates, faster reduction of emissions, and faster economical and job growth. She recommends that these conversations continue, and that Pennsylvania continue to move forward.

Economy-Wide Cap and Trade Petition

Robert McKinstry presented on the Economy-Wide Cap and Trade Petition that was filed with the Environmental Quality Board (EQB). He shared that the petition is for proposed rulemaking, supported by 192 petitioners, including those from environmental groups, businesses, faith-based organizations, educational organizations, community orgs, and individuals. Mr. McKinstry introduced Brian Megali, who has volunteered his energy modeling expertise, and has experience working for Exelon and ICF. Mr. McKinstry said that the petition was filed on November 27, was accepted by the EQB on April 16, and is now being studied by DEP. He said DEP's report is due in February 2020.

Mr. McKinstry spoke about the urgency of action, and said that the proposed rule requires emissions to reduce to zero by 2052. He discussed recent IPCC reports that outlined impacts under 2 degrees and 1.5 degrees of warming. He said that a 45% reduction from 2010 levels by 2030 and achieving carbon neutrality by 2050 is essential for avoiding the worst impacts. Mr. McKinstry cited several sources which outlined the urgency of action.

Mr. McKinstry discussed the social cost of carbon (SCC), which measures the damage caused by one ton of emissions, and cited a 2016 Federal Interagency Task Force report which found that the average SCC is \$42/ton, and the 95^{th} percentile is \$123/ton. He said that this cost increases as action is delayed. He also cited a more recent study that found an SCC of \$48/ton for US damages only.

Mr. McKinstry said that the recent Pennsylvania Supreme Court Decisions regarding the State Constitution Environmental Rights Amendment support that there is a constitutional duty to take action to address climate change so as to preserve the natural attributes of the commonwealth. He stated that the economy-wide cap and trade program would provide a framework for conservation.

He stated that the regulation proposed in the petition is authorized by the Pennsylvania Air Pollution Control Act.

Mr. McKinstry stated that deep decarbonization will depend on electrifying energy use, and decarbonizing the grid. He discussed two examples of coal-fired power plants that were using carbon capture technology to reduce their emissions by 95%, and another technology under development for natural gas plants.

Mr. McKinstry shared that the proposed regulation is based on a successful model already in place in other jurisdictions. He said that 2016 would be used as the baseline for emissions reductions, and that reductions in the cap would begin in 2018. Mr. McKinstry stated that it is very important for industry to have a long-term trajectory. He states that the reporting required under 40 C.F.R. pt. 98 would be the basis for baseline emissions and annual allowance surrender, rather than modeled data.

Mr. McKinstry stated that, under the proposed regulation, most allowances would be auctioned, and all allowances would be auctioned after 20 years. He also stated that unsold allowances would move to the Cost Containment Reserve (CCR) or be retired, and that the program would automatically merge with RGGI.

Mr. McKinstry described how the proposed program addresses leakage, including direct distribution of allowances to industrial sources. He also discussed how the program would link to RGGI and other cap and trade programs, and that the program would allow free trading or banking of allowances. Mr. McKinstry discussed how leakage could be avoided if PJM were to adopt a carbon adder, and Pennsylvania could preserve its export market.

Mr. McKinstry shared that the program is projected to raise approximately $1.5 billion in 2020, and would meet Pennsylvania's structural budget deficit without raiding environmental funds. He also states that the program would save the remaining nuclear plants, benefit the forestry and forest products sector, and that many industries will make money initially because of free allowance distribution. Mr. McKinstry stated that the program would likely increase the demand for natural gas in the short term, and decrease it in the long term. He also said that the program would reduce the demand for coal, but may assist in the development of carbon capture technologies. He calculated that the regulation would add 8 cents per gallon of gasoline, and 5.3 cents per mcf of natural gas.

Mr. McKinstry discussed how an economy-wide cap and trade program is superior to RGGI, including that under an economy-wide program the remaining nuclear plants would be saved, and that Pennsylvania would swamp the RGGI market and crash allowance prices should it join. He also discussed how the proposed program is superior to RGGI plus the Transportation and Climate Initiative (TCI), primarily because an economy-wide program would also cover the building sector.

Mr. McKinstry also described how the proposed program differs from a tax. He stated that it is the sale of a natural resource, and similar programs were upheld in California as not a tax. He stated that the program can be implemented administratively without legislation, but legislation outlining the expenditure of funds would be beneficial to the economy of Pennsylvania.

Mr. McKinstry provided references showing policy and scientific support for an economy-wide cap and trade program, and stressed the urgency of taking action.

Mr. McKinstry concluded his presentation with the upcoming timeline for future action to be taken regarding the petition filed with the EQB.

Patrick Henderson asked Mr. McKinstry if the petitioners will sue the commonwealth if their proposed rulemaking is not passed. Mr. McKinstry replied that they would, but would need to evaluate if the state took a different action than that proposed. Mr. Henderson asked Mr. McKinstry to clarify why the proposed regulation is concerned about saving nuclear plants if the goal of the regulation is to mandate an outcome. Mr. McKinstry responded that the goal is to reduce GHG emissions, and preserving existing nuclear capacity is needed to reach net zero carbon emissions. Mr. Henderson stated his disagreement, and said that the regulation sets a mandate, and that the petition appears to manipulate the pathway to compliance. Mr. McKinstry replied that the regulation is technology neutral and is superior to an RPS for this reason.

Terry Bossert asked if there are constraints on how you use the revenue from allowance sales. Mr. McKinstry said you don't have to dedicate it to environmental protection, but he noted that DCNR and DEP have been underfunded. He said, if the General Assembly wanted to, it would be better for the economy to use the money for sustainable energy utilities. Mr. Bossert asked what is meant by getting to zero or neutrality, and Mr. McKinstry explained that it entails removal of the additional carbon dioxide equal to what we put in the atmosphere. He continued on to explain carbon sequestration. Mr. Bossert asked if more land became forested in Pennsylvania whether the plants are absorbing that carbon dioxide. Mr. McKinstry said when cherry is harvested from the Allegheny Plateau, the carbon is then sequestered in furniture and cabinets.

Luke Brubaker asked about policies and incentives for agriculture. Mr. McKinstry said there are provisions for carbon offsets in his proposed rule, so that if you do something to increase the uptake of carbon dioxide, DEP can develop a protocol to give you offsets. He mentioned some are incorporated by reference in RGGI. Mr. McKinstry suggested feeding cattle diets that are lower in sugar and higher in protein/roughage to reduce methane emissions. Luke said he thought farmers can be a big part of the solution by no till farming, but that they need support.

Mr. Krug asked about offsets from the building sector, and Mr. McKinstry replied that RGGI does offsets for building electrification.

Paul Opiyo asked about the kinds of jobs that will be created. Mr. McKinstry said that RGGI states have seen a net increase in job creation, and you get more if you create a sustainable energy utility. Liz Robinson noted that the greatest number of jobs are from energy efficiency and renewable energy because they are decentralized and the employment is local. Bryan Megali, an assistant of Mr. McKinstry's who formerly worked for Exelon and has done economic analysis of climate policy, said that the proposed rule can be more successful than RPS by providing certainty and a path forward for the development of renewables.

Rob Graff inquired about leakages, border issues and interstate commerce. Mr. McKinstry said this effect will be eliminated, because allowances will be for free if a source can reduce their emissions.

<u>Transportation and Climate Initiative (TCI) Update</u>

Jessica Shirley provided an update on TCI. She explained that the draft regional policy proposal was issued by TCI today. She reminded members that TCI is a cap and invest program for transportation and how this sector is the largest greenhouse gas emission source in the northeast region, but it is third in PA. Ms. Shirley noted that PennDOT is also involved with the TCI initiative, and there are DEP staff participating in multiple work groups. She mentioned that equity principles were incorporated into the draft policy and that TCI is currently seeking input on the draft policy from the public by November 5th. According to Ms. Shirley, more than 1,000 people have participated in the public workshops and webinars, and more than 100 separate entries were submitted through TCI's online portal. All were included in the development of the draft policy. There is a summary of the public comments on the TCI website. Ms. Shirley explained the following timeline for TCI: in December, a regional policy proposal will be issued in the form of an MOU; they are currently modeling for different cap levels, and then they'll model investment strategies and feed that into a public health model to determine the benefits; modeling results should be released by end of year; public input on the draft MOU will be requested in January and February 2020; and the final MOU will be released in the spring. At that time, each jurisdiction will decide if they want to participate.

Robert Graff asked how you account for investment in improving pedestrian and bicycling opportunities. Ms. Shirley explained that both could be an investment strategy and how the fuel terminal would be responsible for purchasing allowances for emission credits from TCI, Inc and that money would be reinvested. She added that gasoline and diesel are the only covered fuels, and it is not a low carbon fuel standard.

Marc Mondor asked about mass transit or autonomous vehicles in the plan. Ms. Shirley explained there is no plan, just modeling going on right now. If Pennsylvania decides to participate, then it will get to decide where to invest that money, which could be in mass transit or autonomous vehicles.

Ms. Shirley said the draft policy will not be released by the time of the next CCAC meeting, but it was suggested she provide another update in February.

Local Government Outreach Update

Heidi Kunka provided an update on DEP's local climate action assistance program. She explained that DEP is using their US Dept. of Energy State Energy Program funding to pay a contractor, ICLEI, to train college students on how to conduct GHG inventories and local climate action plans for 20 local governments in Pennsylvania. The fall cohort focuses on greenhouse gas inventories, and climate action plans will be the focus of the spring semester. The first training webinar was provided in September. There is a community page for all participants to post questions and receive answers. Ms. Kunka explained that this program was created, because one of the 19 strategies identified in the 2018 Pennsylvania Climate Action Plan (CAP) is for local governments to lead by example. She showed slides listing all of the participating local governments, as well as the academic institutions. According to Ms. Kunka, multiple students and eight local governments had to be turned away from participating, as DEP had more interest than they could accommodate.

Paul Opiyo said he thought this was a great program and recommended DEP work with DCED's Center for Local Government Services, since they know who's who in that sector.

Mr. Krug asked what the outcomes will be of the program. Ms. Kunka said we hope to have 20 greenhouse gas inventories and 20 local climate action plans at the end of the program, but with so many participating, there is a chance that there may be some difficulties encountered.

Mr. Graff said to make sure the students are aware of the 2018 Pennsylvania CAP and possibly align it with their local ones. Ms. Kunka explained that ICLEI is creating a local climate action plan template that will be Pennsylvania-specific by incorporating pieces of the state plan.

New Business:

Mr. Graff said he'd like a report back from ICLEI or the participating students/municipalities after June 2020 on the outcomes of the local climate action program.

Steve Krug asked about next steps for the 2021 Pennsylvania CAP development. Kerry Campbell explained that DEP is still doing outreach on the current plan. DEP is shooting for 2021 as the deadline of the next CAP. Mr. Campbell said the Department has been discussing ideas for the next CAP including: should the impacts assessment be completed before the plan, as opposed to after; should there be more public engagement on the next plan; how to engage the CCAC more; should the CAP focus on 3-5 main actions that help Pennsylvania achieve its greenhouse gas reduction goals, instead of wide range; should the plan focus on certain sectors, such as industrial; the role of emerging technologies like energy storage and carbon sequestration in achieving the goals; and how much should the plan focus on adaptation versus mitigation. He mentioned that Mark Hammond has noted that the Act says we must focus on mitigation in the plan.

Mr. Krug asked about strategy and process and whether DEP's budget includes staffing or a consultant. Mr. Campbell stated that, if DEP can find the funds, they will hire someone to help them with the next plan. Mr. Krug said he'd like the CCAC to be able to provide insight into the scope of work for the consultant, so their concerns are addressed. Mr. Campbell explained that RFP's are not public until they are released to everyone.

Representative McCarter said we run the risk of the CCAC being bypassed by the public. The public is moving faster than the committee in regard to their actions on climate change, so we should definitely give the public a chance to react to our plans. He pointed to how 8 million students across the world participated in the climate strike last week, and the CCAC cannot ignore that reality.

Mr. Graff inquired whether receiving advice from the public must be a requirement of legislation. Mr. Campbell explained that the Act says you must include certain things in the CAP, but there is no mention of what is excluded. Jessica Shirley said it is good policy to involve the public, which is why DEP does so.

Mr. Krug asked Mr. Campbell if DEP will have the 2021 CAP milestones for next CCAC meeting. Mr. Campbell said DEP can make that happen.

Gary Merritt said some of the discussion we are having should also be done with the various water advisory committees. Ms. Shirley explained how the Policy Office has asked all DEP programs to put forth statements on how they are addressing climate change. Mr. Merritt clarified that he would like DEP to ask the other advisory committees how they think climate change is impacting water/air. Mr. Campbell mentioned that the climate impacts assessment currently being completed will focus on how stormwater management and erosion/sedimentation practices can be improved.

Terry Bossert said he'd like to have a better feeling that the Commonwealth is doing something about adaptation. Mr. Campbell said we could have adaptation as a topic at a future CCAC meeting. Ms.

Shirley said how PennDOT and DCNR have already presented to the CCAC on their adaptation work. Mr. Campbell suggested possibly having PEMA present on what they are doing in regard to adaptation.

Marc Mondor agreed that adaptation should be a critical part of the Pennsylvania CAP. He mentioned that health should be a focus of the next plan as well. Mr. Krug said a stakeholder also recently raised health impacts as a suggested focus area to him. Mr. Graff suggested having the City of Philadelphia present their work on health impacts. Ms. Shirley noted that Penn State has linked ticks to a changing climate and how Secretary McDonnell cited that study in his recent testimony to a Pennsylvania House Committee. She said DEP would send that testimony to the CCAC members.

Liz Robinson, a public member attending the meeting, said she thought that the 2018 Pennsylvania Climate Action Plan was more so a laundry list of recommendations rather than actionable goals. Mr. Campbell acknowledged her request to make the next plan have more actionable goals.

Adjournment:

A motion to adjourn was made by Terry Bossert and seconded by Lindsay Baxter. The motion carried, and the meeting was adjourned at 2:50 p.m.