

**NORTH CAROLINA ENERGY POLICY COUNCIL
MEETING MINUTES
10:00 a.m., Wednesday, February 21, 2024
DEQ, Green Square Training Room
217 West Jones St, Raleigh, NC**

ENERGY POLICY COUNCIL MEMBERS PRESENT

Brian LiVecchi	Paul Worley
Chris Millis	Scott Tew (<i>virtual</i>)
John Hardin (<i>designee attended</i>)	Susan Munroe
John Szoka	Sushma Masemore
John White	Venu Ghanta

ENERGY POLICY COUNCIL MEMBERS NOT PRESENT

Paolo Carollo	Gus Simmons
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CALL TO ORDER

Lt. Governor Designee Mr. Brian LiVecchi called the Energy Policy Council (*EPC*) meeting to order at 10:00 a.m. on Wednesday, February 21, 2024. He opened the meeting and welcomed the members and participants. Prior to approval of the EPC November 15, 2023, meeting minutes, Mr. LiVecchi requested that the State Energy Office (*SEO*) staff submit a draft of the meeting minutes at least a week prior to the full meeting to give the EPC time to review and suggest any edits/comments as needed. With that, Mr. LiVecchi asked for a motion to approve the EPC's November 15, 2023, meeting minutes. The motion was unanimously approved. He then provided an overview of today's topics concerning the nuclear and the Mountain Valley Pipeline (*MVP*) Southgate Project presentations. With the presentations beginning, all council will hold their questions until the end of each presentation.

NUCLEAR

INTRODUCTION: STEVE REA

Before beginning his introduction, Mr. Steve Rea thanked the Lieutenant Governor and his staff, the council, and other participants in attendance for the opportunity to inform the public about North Carolina's nuclear energy industry. Although retired from the North Carolina nuclear energy industry, Mr. Rea has volunteered with advocating for the industry around North Carolina through an ad hoc council consisting of members from the industry, power company, manufacturers, nuclear reactor, service providers, and numerous other sectors around the state. To begin his introduction of the speakers presenting on nuclear, Mr. Rea makes it clear that it is their mission to inform the public more about the nuclear energy industry and understand that Duke Energy is just one of many in the industry. He first introduced Mr. Lukas Brun who works with the economic development organization, E4 Carolinas, and provided insight into the work the organization has done for the solar, hydrogen, nuclear and various other industries.

RECENT ECONOMIC IMPACT OF THE NUCLEAR INDUSTRY IN NC: LUKAS BRUN

After being introduced by Mr. Rea, Global Value Chain Specialist and current Director of Research for E4 Carolinas Mr. Lukas Brun, began his presentation on the Economic Impact of the Nuclear Industry in the Southeast United States. Mr. Brun presented the three-year grant that was received by the organization to understand opportunities for deploying nuclear reactors in the Southeast (*SE*). During his discussion concerning the market/industry overview, Mr. Brun provided a highlighted overview of graphs that detailed the nuclear power of electric generation and average age of SE nuclear power reactors (*TVA Watts Bar -2 & Southern Vogtle -3*). From there he discussed how the assessment of understanding the entire industry was conducted. From understanding their purpose and keys goals of their assessment, upon study they were able to identify 494 firms active in the nuclear industry with 1,632 unique locations in SE United States (*NC: 179 companies with 384 unique location*).

After continuation of the findings and results developed from the assessment including a map representation, Mr. Brun began the second half of the presentation where he talked about the economic impact. He first discussed the modeling process of the assessment which was broken down into a three-activity process for the impact of all current operations of nuclear power plants (*within SE*), to impact of all firms serving the nuclear industry as suppliers for nuclear power plants, and finally to the impact of non-DOD federal facilities engaged in nuclear-related and other factorial related activities. Mr. Brun's presentation illustrated his findings during the assessment for each activity through the utilization of direct, indirect, and induced effects for considered economic impacts. After providing council and participants with hypothetical investment scenarios, he closed with stating that as we continue to look forward to deploying advanced reactors and small and modular reactors, some of the effects previously discussed will be realized in the economy.

In conclusion of his presentation the floor was open to the council for questions. After thanking Mr. Brun for his presentation, Mr. John Szoka asked for clarification on licensing for nuclear plants and how long the plants can go. Mr. Brun stated that it is licensed for forty years and that nuclear plants could be an eighty-year asset. Mr. Steve Nesbit added stating that there is no technical reason why most nuclear plants couldn't go to over a hundred years if it was economically justified. When asked by Mr. Paul Worley about positioning with other groups like engineers, construction companies, and potentially personnel, Mr. Brun stated that while they are confident about the technology side, the workforce development side is a concern for the industry and utilities. Mr. Rea spoke on awareness of opportunity concerning nuclear and mentioned that with the market for nuclear energy being slightly different than what is accustomed to as it is growing, it is essential that young learners are introduced to the nuclear science topic at the K-12 level. As the Lt. Governor also sits on the state school board, Mr. LiVecchi agreed that it should be discussed and is having those discussions about getting nuclear education in the school system with some standards.

Throughout continued open discussion, Ms. Susan Munroe asked that with the \$75 Million that has been attributed to support development and permitting in North Carolina, what was the scope in terms of supporting educational endeavors in the state. Mr. Brun answered that the report does not address it, and to add on, Mr. Nesbit mentioned that a workforce report that Mr. Rea mentioned earlier in their open discussion may be coming out soon. In closing to questions and comments from the council for the first presentation, Ms. Sushma Masemore stated that she noticed the economic analysis was output based and wanted to know if an input and output based

economic analysis has been considered. In concurrence with Mr. LiVecchi, Ms. Masemore believes that both would be needed to evaluate the benefits. While the economic impact analysis does use an input and output matrix to understand the impacts, he understands that net benefits should be considered.

SMALL MODULAR REACTORS – THE NEXT BIG THING: STEVE NESBIT

Following Mr. Brun presentation, Mr. Rea then introduced the next speaker, Mr. Steve Nesbit who presented on Small Modular Reactors (*SMR*). Mr. Nesbit first gave a brief overview and background of SMR, and its meaning based on the International Atomic Energy Agency (*IAEA*) definitions. When speaking on the historical background of SMR he noted that the U.S. Navy operates reactors on ships that can be considered SMRs and that the first commercial U.S. reactor, has a power level of 60 megawatt electric (Mwe). Some of his other topics during his presentation consisted of the type of coolants SMRs are generally grouped by (*i.e., gas, molten salt, and liquid metal*), microreactors such as Oklo Aurora and NuGen Engine and its concept, and a few other topics. When discussing the interest in SMRs, Mr. Nesbit provided numerous reasonings that included but not limited to; small sizing enabling passive safety features, enables matching generation with grid needs, avoids the “*bet the company*” scenario, expected to be an easier build, operating, and maintaining process. After discussing the deployment (*where & when*) and development process (*who*), along with the prominent U.S. SMR examples, Mr. Nesbit displayed an exhibit of where other countries such as Russia, China, and Argentina are in comparison to the U.S. concerning SMRs. Although our country is behind, Mr. Nesbit affirmed that there is no reason why we can’t catch up. With that, he spoke on some potential challenges that could be factored in, which, he stated that they are currently working on to ensure success. In conclusion of his presentation concerning SMRs, Mr. Nesbit focused on key points concerning SMRs and the idea that nuclear power is a proven clean energy solution.

As chair of the council, Mr. LiVecchi started the open discussion by asking for clarification concerning one of the major advantages of the advanced reactors being their safety, to which Mr. Nesbit stated that the current fleet of nuclear reactors is very safe (*current light water reactors are very safe*), and the small size advantage provides in terms of enabling passive safety features. He further explains that this would mean that one would not need electrical power to make them work. After providing additional follow-up questions, Mr. Worley then asked for further insight concerning the dry cooling tower in which Mr. Nesbit stated that one would take the hot water, waste heat, and in a wet cooling tower cascade it down. From there, evaporative cooling is present as the water comes up and turns to steam (*very effective heat transfer mechanism*). He stated that one could also have a gazillion tubes and have air circulate around the tubes and remove the energy directly without the evaporative cooling phase chain, so that all of the energy goes into the air (*less efficient*). In simpler terms Mr. LiVecchi stated that it is like a giant radiator to which Mr. Rea concurred stating that is like a giant car radiator. During the open discussion, Mr. LiVecchi asked if it were safe to say that there may come a time where there is enough power economically and reliably generated from the items previously discussed and where the challenge wouldn’t be whether or not, we could cycle up and down in order to meet the demands of an intermittent grid, but that it potentially be that there is too much power on the lines and have to send it to ground. Mr. Nesbit stated that they are hopeful to never do that to ensure power is not being wasted in that manner.

After following up on Ms. Masemore question concerning the water intake output and Mr. Szoka’s concerning the outtake cost calculation concerning nuclear plant life expectancy, and the permitting and licensing process in Canada versus the U.S., Mr. LiVecchi thanked the presenters

for their presentations and is fascinated and excited about the prospects of how the council can assist with educating the General Assembly on ways that help make North Carolina a leader in the field.

MVP (SOUTHGATE PROJECT): SHAWN DAY

Mr. Shawn Day thanked the council for allowing time for him to present and began his presentation on the Mountain Valley Pipeline (MVP) Southgate. MVP is a joint venture comprised of five companies or their affiliates. Mr. Day stated that due to the growing realization that demand for natural gas in the Southeast and in the Mid Atlantic was outpacing the existing capacity on the existing pipeline network, the MVP project was developed. In the overview of the MVP, Mr. Day provided further knowledge on the details (*i.e., length, location, compressor stations, etc.*), current capacity, cost, and the completed goal date. As the anticipated completion date is set for “2Q 2024”, Mr. Day mentioned that the crew is working on finalizing final works concerning hydro-testing, commissioning activities, and a few other key items. He presented a few graphics to illustrate the current work that has been achieved this far. Mr. Day mentioned that there are currently two projects under the Mountain Valley (*MVP Mainline & MVP Southgate*). Discussion included explaining the difference between the two MVP projects and additional graphics detailing the natural gas transmission pipelines in North Carolina, natural gas customer count (*based on residential, industrial, electric, transportation, commercial, and others*), steady reduction in GHG emissions, and a few other knowledgeable topics. In the closing of his presentation, Mr. Day provided several reasons for the impact and significance these will have over North Carolina. The five reasons he mentioned were: (1) Reliability (2) Consumer Savings, (3) Maintain No.1 ranking for business (4) Competition and security, and (5) fulfill the objectives of HB951. Mr. Day concluded by stating that they are committed to completing these MVP projects the right way and to being good partners through a collaborative work environment. By doing this, he looks forward to developing an important infrastructure such as the one mentioned in his presentation to help support North Carolina’s continued success.

Following the presentation, Mr. LiVecchi mentioned the long-term contracts that were discussed during the MVP presentation and wanted to know the length of the contract, to which Mr. Day stated that they were typically 20-year contracts. Mr. LiVecchi stated that some of the argument surrounding the project with such a long contract is that it would be a stranded asset and that we would never get money out of it because natural gas would not be needed in the distant future. With that, he asked the presenter if he could provide insight on the life cycle of the project in which Mr. Day stated that the life cycle could be generations and that since for at least the next twenty years, because it is already subscribed under the contract, there’s no chance of them becoming stranded assets. Mr. Chris Millis mentioned that it was discussed that a follow-up would be provided in terms of the Southgate timeframes and recommended to also be informed on the regulatory per minute timeframes for North Carolina (*submittals*) to which Mr. Day agreed could be done.

Ms. Masemore then asked with the expansion, how many dekatherms (Dth) is the project at compared to previous years. Mr. Day responded that it is about 550,000 Dths (*550 million cubic feet per day*). As a follow-up, Ms. Masemore asked if a fraction of the amount was anticipated to go towards the residential sector. With a portion of the gas supply going into electricity generation and with some already going into residential heating, getting a broader understanding of how much is potentially double counted on the energy needs of a residential growth, she believes it would be good to know who does the analysis of whether or not energy demand is

actually double counted for that same sector. Mr. Day stated that he would refer the question to PSNC, the local distribution company, but is not sure if it is necessarily double counted because there are residential customers who would use natural gas for home heating and then also would need power to turn on their lights, so they would still be using those sources. Ms. Masemore commented that as a broad mentioning and being part of the EPC, one of things that should be done is ask those questions. With no further questions, Mr. LiVecchi thanked Mr. Brun for his presentation and moved to the next topic of today's meeting discussion.

SUB-COMMITTEE REPORTS

Energy Assurance Committee

Sub-Committee Chair Mr. Paul Worley mentioned that the Energy Assurance (EA) Committee met to discuss their focus for the 2024 Biennial Report. Mr. Worley mentioned that currently EA has three recommendations concerning fossil fuel, tabletop exercises, the reliability and resiliency electric grids have on the economy, and the development of the North Carolina energy security plan. From discussion with the EA Committee, Mr. Worley suggested that it would be beneficial to receive an update on the 2022 attack in Moore County. Following, Mr. LiVecchi stated that based on a previous meeting concerning tabletop exercises, it would be helpful to continue to study that for the future.

Energy Efficiency Committee

Sub-Committee Chair Mr. Scott Tew had to leave early, so updates were provided by Mr. John Szoka for the Energy Efficiency (EE) Committee. He mentioned how the committee is currently working on recommendation revisions and new entries for the upcoming Biennial Report. To ensure the best recommendations are provided, Mr. Szoka stated that SEO staff are currently assisting with ensuring detailed recommendations are constructed from what is presently listed.

Energy Infrastructure and Energy Innovation Committees

As the committee had joint meetings and the Sub-Committee chairs were not available to provide an update, Ms. Susan Munroe informed the council of the updates for the Energy Innovation (EIN) and Energy Infrastructure (EI) Committees. From an overview of the committee meetings, Ms. Munroe mentioned their discussion on biogas and the potential for the EIN committee to absorb some of EI's recommendations from the Biennial Report as EIN is the newest committee of the EPC. In closing she reminded the council and other participants of the adopted mission statement for EIN.

PUBLIC COMMENTS

Upon opening the floor for public comment, Executive Director of Carolina Utility Customers Association, Mr. Kevin Martin first thanked the EPC for the work they do along with the presentations provided in today's meeting. As he stated that he is a base load consumer which supports him on the electric and gas side, he is in support of nuclear. With that, Mr. Martin mentioned that his group currently has manufacturers that are looking to expand that can't expand because they can't get the molecules on the existing pipeline to expand and that their processes cannot be electrified. With their relied pipeline being in zone five, Mr. Martin would

like to know if the MVP Southgate is enough since they would like to see more natural gas and can't electrify their processes that build their needed everyday products. Mr. LiVecchi stated that as discussed in the presentations, every molecule of gas will eventually come into North Carolina through the extension with utilities either for power generation or with a percentage going to lines that are residential and industry. Mr. LiVecchi asked if there is a breakdown percentage of what's going to Duke and PSNC. While that information is not known at this time Mr. LiVecchi wanted to know if there was going to be enough left over so electricity and natural gas are provided to those who need it. Mr. Day additionally stated that the projects are open access lines, a regulated interstate transmission pipeline and that there is opportunity in the future to explore direct tap than pulling natural gas directly from the line. After further discussion of Mr. Martin's comment, Mr. LiVecchi opened the floor for any other public comments. With nothing further, the public comment period was closed.

CLOSING COMMENTS

With no closing remarks, Mr. LiVecchi thanked the presenters and council for their discussion today. He reminded everyone that the next EPC meeting would be May 15, 2024, and looked forward to seeing everyone again. He encouraged the council to provide any suggested topics that they would like to discuss in future meetings to the chair and SEO staff. With no further comments, a motion to adjourn was made by Mr. Szoka and seconded by Mr. Worley. The meeting was adjourned at 11:58 a.m.

Meeting Minutes Approved on **05-15-2024.**