

Charleston County
Resilience and Sustainability Advisory Committee (RSAC)
Meeting Minutes
September 19th, 2023

ATTENDEES

RSAC: Joe Boykin, Scott Runyon, Jen Jones, Adrian Cane, Stewart Weinberg, Kyle James, Sally Brooks, Diamond Curry

Absent: Scott Curtis

County Staff: Arielle Gerstein, Walter Smalls
Absent: Karen Burney-Green, Sheetal Verma⁺

Members of the public: Josh Burrill

SSG Staff: Erica Brook, Camilla Melrose, and Yuill Herbert

CALL TO ORDER

Stewart Weinberg called the Charleston County RSAC meeting to order at 9:30 a.m.

ADMINISTRATIVE OFFICERS' REMARKS

- Approved meeting minutes at 9:30 a.m. from June 27, 2023.
 - Motion to approve introduced by Stewart Weinberg. Motion was approved with no opposition.

TOPICS DISCUSSED

- Resilience Ordinance updates to be discussed at December meeting.
- Climate Action Presentation introduced by Arielle at 9:31am
- Climate Action Presentation by Erica Brook, Camilla Melrose, and Yuill Herbert of SSG
- Addressed Items:
 - Results:** Presented by Erica Brook
There was heavy emphasis on the technical process; there was also feedback indicating that the process will become more meaningful for input as a clearer picture of implementation is provided.
 - Low Carbon Assumptions:** Presented by Camilla Melrose
 - At this time, a clear understanding of the county's energy use has been established with a projection as to what emissions would look like in 2050 if nothing changes. Models have been constructed to dramatically reduce GHG emissions to have zero emissions by 2050.
 - Modeling assumptions are being developed specific to the Charleston County based on quantifiable data, time restrictions, and specific elements of interest.

- An explanation of the Anatomy of a Decarbonization Pathway was provided, which considers factors that currently lead to carbon emissions with impacts on the environment and climate.
- The goal is to find the quickest pathway to zero carbon emissions as that would be the ideal with a global perspective.
- *Draft Model Assumptions*: The goal of this discussion was to identify the options that could be acted upon more aggressively to achieve Net Zero and the scale of change it would actually require.
- All of the assumptions are preliminary and intended for editing. The largest category would be the use of electric vehicles and then modifying building efficiency through heat pump conversion.
- There were a few constants considered in every scenario including demographics, development, and climate change.
- *Business as Planned with Low Carbon Scenarios* - it is being seen that newly constructed and ICI buildings are improving in energy efficiency.
- *Base Assumptions -Transportation*: the aim is to reduce the number of trips using personal vehicles and reduce the emissions of those vehicles. Lowcountry Rapid Transit should be available in 2028. The transit buses will be electric by 2040. We should see growing electrification of vehicles to 100% in 2050. Heavier vehicles will operate on electricity and hydrogen. The municipality will lead the way to a 100% electric fleet by 2030 except for heavier vehicles that will operate on electricity and hydrogen. When we reach 2050, there may be residual diesel and gas reliance as some traditional vehicles will still be in use. To be proactive in working towards zero emissions, we should concentrate on replacing the traditional vehicles with electric ones as well as decarbonizing the electric grids.

Target Settings: Presented by Yuill Herbert

- Explanations were provided for the four different approaches to adapting the global goal of reducing emissions and global warming to county and municipal levels.
- A science-based target (general) – global model that is not always applicable from a socioeconomic standpoint – more feasible for wealthier, more developed countries.
- A science-based target using carbon budget and fair share approach – does include an equity perspective.
- A target aligning with the United States’ federal target (political and not scientific) – does not include an equity perspective.
- An evidence-based target – more restrained in terms of what we can envision for the future.
- The targets are ultimately a symbol of the direction that the county wants to move in.
- It will still take lots of effort and discussion as to how an approach can be implemented and how quickly emissions can be reduced as quickly as possible.
- Technologies are becoming more available and affordable, so coupled with economic development in the area, it becomes more about how Charleston County wants to invest in and position itself within this opportunity. This is where SSG will need the County’s input the most.

Questions & Remarks:

- Stewart asked if SSG has had any discussion with Dominion Energy as they are interested in making the transition from coal to natural gas. He feels this would be important to the assumptions developed.
- Camilla explained that the emissions associated with grid electricity is very important to their modeling, and she can provide the reference for the information if it's not included in the workbook.
- Stewart continued that he wants to confirm that communications are being engaged in with Dominion, Berkeley Cooperative, and Santee Cooper.
- Arielle confirmed that it would just be Dominion and Berkeley Cooperative.
- Camilla explained that they have been using the federally available sources, but they are open to incorporating any other pieces.
- Stewart suggested a follow up with Dominion or the Public Service Commission.
- Jen asked if incentive programs would be extended beyond low-income households to rentals, landlords, and apartment complexes.
- Camilla explained that for the current modeling assumption, the inclusion was for low-income households, but once the implementation phase is reached, there will be discussions centered on rentals, landlords, and apartment complexes though they may be tricky.
- Adrian asked for clarification as to specifics of what the modeling means in retrofitting to achieve 50% thermal efficiency.
- Camilla provided that there are more specifics that will be determined but the focus is currently on the type of information that will be collected to identify what the retrofitting will entail and the associated costs.
- Stewart added that there is a program that has been in existence for quite some time in North Charleston that acquires grants to help low-income households retrofit their homes; he will pass the information along to Arielle to share with SSG.
- Stewart continued that it would be a good idea to tap into the existing programs and expand up on them for the future.
- Camilla agreed that if something has been working, it's a good idea to keep them in place and build upon them. She explained that they will build upon those ideas next time in implementation.
- Kyle asked if Camilla could recall the base year for the transportation model assumption, and if it was 2018.
- Camilla and Arielle stated that it may be 2020.
- Kyle stated they he didn't have a 2020 base year, but he does have recent data from a month ago that he could share to level out the data between pre and post COVID.
- Camilla stated that it's possible that they didn't have that information, yet, but would accept any information that they could share on behalf of Amber, the modeler.
- Arielle made a note of this possible exchange of information.
- Kyle stated that the population and household projections should be reconciled as he doesn't believe that household size is expected to grow at the rate presented for demographics. He believes the figures were derived from different sources and may need to be revisited.
- Camilla explained that they're depicting number of households and not household sizes.
- Yuill interjected that those figures haven't been reconciled by the county, as of yet, but they could work on tweaking the numbers; they would have to determine if household

or population would be more appropriate for the modification. He continued that it was a good point because it may mean less houses built.

- Arielle asked if he had any suggestions on whether population or households should be tweaked.
- Kyle stated that he is unfamiliar with the data and would have to research it more.
- Kyle and Jen iterated that they're seeing building growth and development more along the lines of 49,000 for Charleston County alone.
- Arielle sought clarification of their sources.
- Kyle stated BCDCOG as the source.
- Councilman Boykin brought to attention that the vehicles included in the projection are for residents that live in Charleston County but don't include the day commuters from surrounding areas, which would increase the numbers of vehicles operating in the county drastically.
- Stewart offered that the Google EIE data used would account for that fluctuation.
- Arielle stated that the Google EIE data was not used but rather BCDCOG. She stated the Lowcountry Rapid Transit data could be used in future household data considerations.
- Councilman Boykin also stated that the vehicle use of tourists visiting Charleston County may not have been considered either.
- Arielle stated that Amber would know more of the specifics on what type of transportation data was used in the modeling.
- Kyle shared that tourists aren't really taken into account for vehicle use.
- Arielle asked if it was too complicated to do so.
- Kyle clarified that vehicles from external areas are considered just not in a basic 4/7 model.
- Arielle stated that she would follow up with SSG on some of the other data sources that may need to be included in future modeling.
- Arielle asked Camilla to explain what ICI buildings are.
- Camilla responded that they are industrial, commercial, and institutional buildings, and basically, this includes everything typically outside of residential construction.
- Jen asked Camilla to define what Net Zero is.
- Camilla explained that it's a building standard of high efficiency. It's a building that produces all of the energy that it needs over the course of the year. Net Zero Ready is a building that has the capacity or is built to the standards to attain Net Zero but doesn't have the on-site generation, yet.
- Stewart mentioned that Camilla is using the 2009 building codes and that there are discussions in state legislation to introduce new building codes.
- Kyle and Arielle clarified that it may just be to separate residential and commercial.
- Stewart was in agreement to proceed with 2009 as the reference.
- Camilla elaborated that the 2009 information is just for reference for the current date to build off of into the future.
- Kyle asked if density of development is a lever that could be incorporated into the model.
- Camilla answered that it could, but it's more relevant to transportation in terms of CO2 emissions than in building efficiency. When discussing residential buildings, densification can be included in terms of efficiency per capita.
- Kyle asked if densification was incorporated, it would be more appropriate in transportation considerations.

- Camilla responded that densification effects would be seen more clearly in transportation.
- Yuill explained densification can have a compounding effect on decarbonization when considering apartments, condominiums, and duplexes as these residential buildings are more efficient in energy usage and potentially using less renewables, which can help lower costs, and lower the burden on electricity.
- Kyle felt the argument to include density in building efficiency could be upheld to maintain mindfulness as the project moves forward.
- Councilman Boykin mentioned that the projected plan seems to have Charleston County completely dependent upon an electric grid. He added that there is a large natural gas network in the area, and it becomes important, at least as a backup, when storms and hurricanes hit. Many homes could be without power for extended periods of time and rely on natural gas in these situations as solar may not be an option in tree covered areas. He doesn't see natural gas included at all and sought further explanations of the plan to account for storm situations.
- Yuill shared that he has experienced two hurricanes, and as one of the few people with solar power and an electrical back up system, he was one of the only residents that continued to have power while it had been disrupted for others. He added that gas and diesel have emissions, and if the goal is to phase out emissions, then there aren't many options. There are efforts to introduce hydrogen in Natural Gas Distribution Systems as an alternative pathway, but it's more on the commercial side and doesn't address cooling. Heat pumps would be the real pathway on the residential end. Everyone is coalescing around electrification for heating and cooling for residential and commercial sectors. As for transportation or personal transportation, there are other avenues being explored for the natural gas system, but it's not clear what will actually be viable.
- Council Boykin reiterated that it will be challenging to sell residents who have experienced multiple storms that they will have to rely on one source of energy. Taking into account that they rely on natural gas for their generators to continue to provide cooling/heating and hot water. He also mentioned again that some homes don't have the option to utilize solar power due to grand live oaks that surround their home. He wants to make sure that options remain while trying to reduce emissions as much as possible.
- Yuill explained that electricity isn't a source of energy but instead an energy carrier, so it could have multiple inputs to make it more resilient. The trouble with the current electric grids in the country at the moment is that they're vulnerable to disruptions. Part of the plan is to increase resilience in the electric and energy systems, which are included in the retrofits of the current plan in the form of passive survivability. If a weatherization agenda on homes is implemented, then reduced energy consumptions and maintenance of comfort over a prolonged period of time with less energy input is possible. It could remain at a comfortable temperature for eight days without energy input, which would increase resilience in extreme weather events. In terms of backup generators, they are a critical part of resilience, so we can try to transition to battery powered systems. Also, trees are critical to cooling, so we don't want to do anything to the trees. Instead, there could be solar gardens off site or other electricity generation systems like geothermal or other electricity generation systems. Making sure people are safe when the main grid is not functioning, whatever the reason might be, is being addressed in every level of their work on this plan.

- Stewart suggested a discussion at the December 12th meeting to provide further direction as not everyone is in agreement on certain topics.
- Arielle agreed and made note of this discussion proposal. She added that the goal is to gain public support and bring it to council for approval.
- Adrian circled back to the topic of Net Zero and Net Zero Ready. From a home building and policy perspective, he believes that it would be a very bold policy to think that all new residential buildings would be Net Zero Ready by 2030 when we are already in 2023.
- Arielle took note of this concern.
- Erica asserted that the discussion has been excellent, but there were other topics that needed to be addressed as well, including transportation.
- Arielle shared that she has noted all the important topics to be revisited.
- Stewart added that the discussion was important and the input was essential to aligning expectations between the committee and SSG.
- Kyle mentioned within Base Assumptions that CARTA is working on route frequency with 110 fixed busses; there are, however, alternate buses/vehicles that they have that aren't currently electrified. He also suggested that some levers that could be added were micro mobility and parking.
- Arielle added that it may be better to modify some of the projected dates from 2030 to 2035 being that the longer window of time may be needed for a more substantial conversion to electric vehicles.
- Kyle introduced a point that 6% of the population may be using electric right now, so market supply for the growth to 60% has to be considered.
- Stewart mentioned that now that a certain threshold has been met in the United States with switching to electric vehicles, it's expected that this will accelerate progress and complete the transition much faster.
- Kyle countered that the modeling is somewhat based on what's happened in other countries, like Norway, but the difference is the government in those countries have funded a significant portion of the transition. So, the federal models may be correct if we're assuming that there will be federal financial support.
- Jen asked if the modeling should be broken down into status/class as not everyone will be able to afford electric vehicles right away.
- Kyle agreed with this concept but asked for input from Camilla and Yuill as this type of detail may be too complicated for modeling at this stage.
- Camilla explained that the time frames take this into account as the transition to electric vehicles also depends on the market, but she mentioned that there are some dealerships already specializing in the sale of used electric vehicles, which would make them more affordable or at least competitively priced with the gas reliant vehicles.
- Councilman Boykin questioned how the electric vehicle transition will be achievable in light of the charging process, which is more lengthy than fueling, and how will charging be accessible for a country on the move.
- Jen added that we have to shift from our conventional way of thinking and note that the shift will require behavioral changes, and a lot of charging will have to be completed at home.
- Arielle added that this was a good point brought up by Councilman Boykin and that it was discussed at a recent conference. There are options being explored as to how to recharge a vehicle quickly and efficiently, which may entail replacement batteries at what we know as gas stations.

- Kyle mentioned that Charleston County would have to help in developing the backbone of a charging plan for the electric vehicle community.
- Arielle added that there is an EV working group that Kyle is currently leading.
- Jen added that we must envision the future we want and the barriers to getting there.
- Stewart commented that this is the plan for now, but we have to revisit it every few years to modify it. There will have to be iterations along the way.
- Jen agreed that the reviews will help identify where we must apply efforts to achieve the changes.
- Kyle stated that it seems we are in a more evidence-based approach, and he wanted to know if when we focus on electric vehicle funding if the approach will shift to the federal target.
- Jen asked if the city's plan takes a certain approach.
- Stewart answered that the city is using the IPCC to reach a certain level of reduction by 2030, and the approach is more science based.
- Yuill added that the targets are useful in modeling as it allows us to analyze the actions we've taken and determine if anything needs to be tweaked to achieve the desired outcome.
- Stewart asked if everyone could agree that the science-based target would be the most fitting approach in addressing the concerns discussed so far in the meeting.
- Council Boykin expressed that he's comfortable with a dual approach of science-based and evidence-based.
- Jen asked if combo targets are an option.
- Yuill responded that it's completely fine to have a combo approach and that often you could have an evidence-based scenario with a gap on the pathway you've chosen to follow. This is completely fine because the model will be modified as you identify the different levers for addressing the scenario.
- Kyle added that in situations involving natural gas and residential construction matters, you can see where the science and evidence-based approaches would be fitting.
- Jen asked if we could learn more about the fair share approach and its impact.
- Yuill explained that his approach is tough because it's based on responsibilities proportionate to economic ability. So, where it may be possible to achieve 80% reduction by 2030 through quickly decarbonizing and electrifying everything, it will be more difficult when it comes to turning over the fleets based on previous modeling exercises.
- Jen asked if it wasn't an option or if it was more so infeasible.
- Yuill explained that feasible can be an interesting concept because it's often defined within specific contexts. However, the deeper emission reduction plans have become more compelling financially than the slower, less ambitious pathways.
- Arielle suggested that another meeting prior to the December implementation meeting might be beneficial to further discuss important topics to gain more clarity.
- Kyle asked if there was a timeframe for providing input on the target approach.
- Camilla stated that as soon as possible would be great but that in the coming weeks as they're working on the modeling, they could always incorporate modifications.
- Erica added that it's not mandatory for everyone to come to a consensus as they will be drawing input from the committee, another advisory panel, and Arielle as well. She has noticed that they are leaning towards a science-based approach coupled with evidence-based.

- Arielle added that the intermediate meeting would be more focused on the low carbon modeling assumption as that incited the most discussion. She asked if there was a certain date by which they had to determine what would be going into the low carbon modeling assumption.
- Camilla shared that it will take her and Amber approximately 2-3 weeks to develop a revamped low carbon scenario from which they can share the results along with different levers that could be pursued to reach the set goal.
- Arielle asked everyone if October 25, 2023, at 9:30am would work for most as it would have to be an in-person meeting.

RECOMMENDATIONS MADE

Arielle recommended an intermediate meeting to further discuss the components of the low carbon modeling assumption to provide further clarity before implementation at the scheduled December 2023 meeting.

Next Meeting

The next meeting will supplement the low carbon modeling assumption in preparation for the implementation phase.

CHAIR'S REMARKS

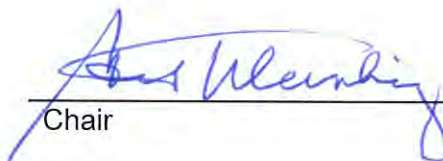
The Chair brought the intermediate meeting set for October 25, 2023, at 9:30am to a vote. Full approval was met.

ADJOURNMENT

The Chair, Stewart Weinberg, adjourned the meeting at 10:41 a.m.

Sheetal Verma⁺

Ratified by the Charleston County
Resilience and Sustainability Advisory Committee
this 25th day of October, 2023.


Chair

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Attest:


Administrative Officer - Resilience


Administrative Officer - Sustainability

