

MINUTES OF THE CLIMATE ACTION COUNCIL MEETING
HELD ON DECEMBER 20, 2021

Pursuant to Notice and Agenda, a copy of which is annexed hereto, a meeting of the Climate Action Council (“Council”) was convened at 2:00 p.m. on Monday, December 20, 2021. The following Members attended, and a quorum was present throughout the meeting:

Council Co-Chairs

- Doreen Harris, President and CEO, New York State Energy Research and Development Authority
- Basil Seggos, Commissioner, New York State Department of Environmental Conservation

Council Members

- Richard Ball, Commissioner, New York State Department of Agriculture and Markets
- Mary T. Bassett, Commissioner, New York State Department of Health (Henry Spliethoff, Designee)
- Rory Christian, Chair and CEO, New York State Public Service Commission
- Donna L. DeCarolis, President, National Fuel Gas Distribution Corporation
- Marie Therese Dominguez, Commissioner, New York State Department of Transportation (Ron Epstein, Designee)
- Gavin Donohue, President and CEO, Independent Power Producers of New York
- Justin Driscoll, Interim President and Chief Executive Officer, New York Power Authority
- Dennis Elsenbeck, President, Viridi Parente, Inc.
- Thomas Falcone, CEO, Long Island Power Authority
- Rose Harvey, Senior Fellow for Parks and Open Space, Regional Plan Association
- Dr. Bob Howarth, Professor, Ecology and Environmental Biology at Cornell University
- Peter Iwanowicz, Executive Director, Environmental Advocates of NY
- Hope Knight, President and CEO-designate and Acting Commissioner, Empire State Development (Vincent Ravaschiere, Designee)
- Roberta Reardon, Commissioner, New York State Department of Labor
- Anne Reynolds, Executive Director, Alliance for Clean Energy New York
- Robert Rodriguez, Acting Secretary of State, New York State Department of State (Kisha Santiago-Martinez, Designee)
- Raya Salter
- Dr. Paul Shepson, Dean, School of Marine and Atmospheric Sciences at Stony Brook University
- RuthAnne Visnauskas, Commissioner and CEO, New York State Homes and Community Renewal (Rebecca Koepnick, Designee)

Also present were Climate Action Council Executive Director Sarah Osgood, various State agency staff and members of the public. Mr. Seggos and Ms. Harris, Co-Chairs of the Council, welcomed all in attendance.

Consideration of November 30, 2021 and December 6, 2021 Meeting Minutes

The next item on the Agenda was to advance the minutes from the November 30, 2021 Meeting and continuation held on December 6, 2021. With no changes or objections, and upon a motion duly made and seconded, the Minutes were adopted.

Presentation and Discussion: Jobs Study and Integration Analysis Updates

Carl Mas, Director, Energy and Environmental Analysis, NYSERDA, presented an update on the integration analysis and the Just Transition Working Group Job Study results. He was joined by Phillip Jordan, Vice President and Principal Researcher, BW Research.

Jobs Study

Mr. Jordan presented the Jobs Study update by recapping the Initial Employment Outputs initially presented at the November 30, 2021 meeting, which are: investment stream by sub-sector; overall annual employment by sub-sector; and for electricity, the energy that will be generated within each sub sector. The key findings include:

- The range of jobs added by 2030 for Scenario 2 is 211,000; and for Scenario 3 is 220,000, with the bulk of the jobs added in the areas of building shell and heating ventilation and air conditioning, but with strong growth in both solar and wind resources as well; and
- Both scenarios depict approximately 22,000 jobs by 2030, with about half in gas station employment.

Mr. Jordan presented the Initial Employment Outputs to the Secondary Employment Outputs and Wage Analysis. Four areas were studied: (1) employment by industry; (2) employment by occupational category; (3) employment by geographic region within New York for 5 regions; and (4) employment by sustaining wage tier. He also explained the methodology used for the analysis, explaining that two model sensitivities were used to understand how changes and assumptions from the baseline would impact the number of jobs created. The two model sensitivities were to:

- develop an analysis that examines whether in-state manufacturing increased in the Buildings Sector and how it would impact employment and the economy; and
- describe the key assumptions for gas station closings, and how changes to those assumptions would impact the model outcomes.

Mr. Jordan explained that Initial Employment Outputs are an estimate of how the quantity of jobs will change over time from 2019 to 2050 under the two investment scenarios and the four primary sectors (buildings, electricity, fuels and transportation) and they include induced employment. Alternatively, Secondary Employment Outputs are an assessment of how the type, location, and quality of jobs will change from 2019 to 2030 under the two investment scenarios and four primary sectors, and they do not include induced employment.

The key **employment** findings from the Secondary Employment Output analysis are:

Industry findings:

- All of the major industry categories experience a net increase of employment in the four sectors combined from 2019 to 2030, with the largest increase in construction and manufacturing;
- Just over three-quarters of total industry jobs added (2019 to 2030) in the growth sub-sectors are in the construction industry; and
- Over 80 percent of total industry jobs lost in the displaced sub-sectors are found in the other supply chain industries, including utilities, transportation and warehousing, wholesale, and retail industries.

Occupational findings are that just under two-thirds of jobs added from 2019 to 2030 in the growth sub-sectors are in installation and repair positions.

Wage findings:

- Seventy percent of jobs added in the growth sub-sectors, from 2019 to 2030 will be in the middle (\$28 to \$37 an hour) or higher (greater than \$37 an hour) wage paying category.
- 60 percent of jobs lost in the displaced sub-sectors from 2019 to 2030 will be from the lower (less than \$28 an hour) wage paying category.

Geographic findings are that net job growth was found across the State, with each of the five regions experiencing over 10,000 added jobs from 2019 to 2030.

The key **electricity sector** findings from the Secondary Employment Output analysis are:

Industry profile is an approximately 40% increase in total sector employment by 2030, and the sector is projected to experience almost a doubling of construction industry employment in 2030.

Occupational profile:

- Growth sub-sectors show employment increases across all occupational categories with the most substantial increases (nearly two-thirds) projected for installation and repair professions; and
- Displaced sub-sectors show employment decreases across all occupational categories with the most substantial decreases (approximately one quarter) projected for production and manufacturing, as well as administrative positions.

Wage Profile results are that approximately half of all employment in this sector is found at the highest wage category (greater than \$37 an hour). From 2019 to 2030 the most growth will be found in the middle wage category (\$28 to \$37 an hour).

The key **fuels sector** findings from the Secondary Employment Output analysis are:

Industry Profile:

- There is a 3% increase in employment in Scenario 2, and a 10% decrease in Scenario 3 by 2030 and this is the only sector with considerable employment differences between scenarios; and
- The sector is projected to increase employment in the construction industry but decrease in all other industries.

Occupational Profile:

- Growth sub-sectors show employment growth in all occupational categories, with larger increases in Scenario 2; and
- Decreases in employment in displaced sub-sectors mostly offset growth in other sub-sectors, largely due to jobs lost in administrative occupations.

Wage Profile results are that there is a 6% increase in workers in the higher wage category (greater than \$37 an hour) in Scenario 2 by 2030 and about two-thirds of jobs lost under Scenario 3 are in the lower wage category (less than \$28 an hour).

The key **buildings sector** findings from the Secondary Employment Output analysis are:

Industry Profile results are that there is a more than 80 percent total increase in employment by 2030 and four out of five jobs added are in the construction industry.

Occupational Profile results are that employment increases across all occupational categories including production and manufacturing, administrative, sales, management and professional, with the most significant increase (over 80%) projected for installation and repair occupations.

Wage Profile results are that about one-third of workers are projected to be in the highest wage category (greater than \$37) by 2030; and the \$28 to \$37 per hour wage category sees the largest increase in the workforce, more than doubling by 2030.

The key **transportation sector** findings from the Secondary Employment Output analysis are:

Industry Profile results show relatively flat total employment from 2019 to 2030, with declines in other supply chain industries largely offset by major growth in construction.

Occupational Profile results are that:

- Growth sub-sectors see employment increases across all occupational categories with the most substantial increases (over one-half) projected for installation and repair occupations; and
- Displaced sub-sectors see employment decreases across all occupational categories with the most substantial decreases (nearly one-third) projected for administrative and other (gas station) positions.

Wage Profile results are that approximately 63% of all employment in this sector is in the lower wage category (less than \$28 an hour) in 2019. From 2019 to 2030 the transportation sector experiences a decline in the lower wage category and increases in the middle and higher wage categories.

Mr. Jordan presented highlights from the Wage Analysis. Wage categories were based on data from the 2019 Living Wage calculation for New York State (Living Wage Calculator MIT). Highlights included that:

- middle wage positions (\$28 - \$37) represent the largest increase in jobs from 2019 to 2030, with the largest decline in lower wage positions (less than \$28);
- the electricity sector has the highest proportion of higher wage positions (greater than \$37) with approximately half the employment falling into this category; and
- the transportation sector has the highest proportion of lower wage positions (less than \$28 with approximately 60 percent of employment falling in this category.

In response to concerns expressed by Dennis Elsenbeck regarding the lack of a purposeful examination of manufacturing jobs and the lack of focus on how many jobs were either lost or created in disadvantaged communities, Mr. Mas responded that the legislative mandate of the Jobs Study did not focus specifically on manufacturing jobs, but that it is important to focus on manufacturing jobs and New York's ability to become a global exporter of renewables. This will be a focus for 2022 and he stated that the Study is constantly evolving and that new demographics are regularly added. Mr. Elsenbeck stated his strong support for a more inclusive look at growth that incorporates manufacturing.

In response to an inquiry from Anne Reynolds as to what the current percentage of Scenario 2 and 3 achievement is for the building sector sensitivity analysis, Mr. Jordan responded the State is at approximately 14 percent. Mr. Mas stated that New York is working toward being an exporter in conjunction with shifting its own energy consumption to renewable energy. Ms. Reynolds stated a desire for further study to demonstrate what is needed to get from 14 percent to 50 percent, or higher. Mr. Jordan stated that inquiries of manufacturers who participate in the Clean Energy Industry Report (CEIR) found a high level of interest and a list of needs in order to make a transition. This effort focused on electric transportation and other areas, such as wind, solar, and storage are being explored, as suggested by Ms. Reynolds.

Integration Analysis Update

Mr. Mas began discussion of the Integration Analysis by acknowledging the extensive expertise of the Integration Analysis Technical Advisory Group. The key Benefit-Cost Analysis updates include the Scenario 4: Beyond 85% Reduction, final review and updates of cost inputs, and the incorporation of the treatment of hydrofluorocarbons within the social cost of carbon. A key finding is that the cost of inaction exceeds the cost of action by more than \$90 billion in each Scenario, with the net benefits of action range from \$90 - \$120 billion.

Mr. Mas presented the key findings of the Scenario Cost Assessment as:

- net direct costs in all scenarios are in the same range given uncertainty, and are primarily driven by investments in buildings and the electricity system;
- all scenarios show avoided fossil fuel expenditures due to efficiency and fuel-switching relative to the Reference Case;
- Scenario 2: Strategic use of low-carbon fuels includes significant investment in renewable diesel, renewable jet kerosene, and renewable natural gas;
- Scenario 3: Accelerated transition away from combustion meets emissions limits with greater levels of electrification, which results in greater investments in building electrification, zero-emission vehicles, and the electricity system; and
- Scenario 4: Beyond 85% reduction meets emissions limits with further investment in transportation (intrastate rail, electric and hydrogen aviation, smart growth with reductions vehicle miles traveled), and innovation in non-energy sectors, like agriculture and waste, to avoid the need for negative emissions technologies.

The net present value of the Reference Case system expenditure is \$2.7 trillion. When calculated on a net present value basis, the net direct costs are moderate – about 11-12 percent higher than the Reference Case. Given that, across all scenarios, it is a matter of reinvesting existing dollars previously allocated for spending, rather than finding additional funding to fill the void.

Mr. Mas addressed the uncertainty analysis, which explored technology costs (developed high innovation/low technology cost sensitivity assumptions for key demand-side and supply-side technologies) and fuel costs (incorporated a range of fossil fuel costs from Energy Information Administration's Annual Energy Outlook and development central and low-cost biofuel cost projections). From this examination of a wide range of assumptions, net direct costs in all scenarios are in the same range, and all scenarios realize a net societal benefit. Net direct costs are in the same range given uncertainty bounds.

In the context of sensitivity analysis, Mr. Mas focused on the analysis for ground source/district loop heat pump sensitivity, systems which can provide overall system benefits due to increased annual and peak performance efficiency. Although uncertainty remains on the full potential and site suitability for such systems, this sensitivity explored a future where, after an initial period for expansion of the industry, these systems predominate, ultimately ramping up to 80 percent of new sales. The analysis shows that higher adoption can reduce system load and peak needs, yielding a \$9 billion reduction composed of a \$7 billion reduction in bulk grid costs and \$2 billion reduction in distribution system costs (excluding heat pump costs). Higher adoption will result in reduced electric sector costs of approximately \$9 billion, but increased demand side technology costs by \$19 billion, for an overall increase in net increase in costs of about \$10 billion. However, Mr. Mas cautioned that given the significant uncertainty of certain aspects for these technologies, further investigation is warranted to assess the actual potential for realizing benefits.

In response to an inquiry from Raya Salter for information regarding Scenario 4 and the expected demand side costs for ground source/district loop technologies, Mr. Mas confirmed that investment will be needed in new appliances for both air source and ground source heat pumps, and the incremental costs of those technologies was estimated as best they could. However, while there is significant uncertainty in the cost projections, there is optimism that costs could be lower, as was the case with many projections for other innovative technologies (such as solar) that few believed could be achieved to the extent they have been in much shorter than projected periods of time. As for Ms. Salter's inquiry regarding Scenario 4, each Scenario will be presented in equal detail so the benefits and challenges of each can be fairly weighed. Ms. Salter expressed her desire to examine the Scenario comparison before the final Scoping Plan is released and her concern that the Scenarios include technologies which some Council members find problematic.

Dr. Bob Howarth expressed his agreement with Ms. Salter regarding the need for more information so that Council Members are equipped with the most current information as the final Scoping Plan is debated during 2022. Dr. Howarth also inquired as to whether there are additional benefits to ground source heat pumps versus air source heat pumps, particularly during peak winter needs, stressing the importance of addressing ambiguity in technology definitions (such as for district heating) and encouraged further exploration of this technology. Dr. Howarth expressed his understanding and belief that the steam heat system is inefficient, noting that many universities and cities are switching from steam to hot water heat and that perhaps this is an opportunity for New York City.

Mr. Elsenbeck expressed his concern regarding the acceleration of electrification and whether it would align with the timing of the integration analysis timeline and whether more creative location-based distributed energy resource opportunities or potential solutions could lower the overall cost of implementation. Mr. Mas responded that a flexibility analysis was performed to pressure test market and innovation uncertainty with an additional sensitivity to reduce peak demand with distributed energy resources, load shifting, and storage using vehicles shifting towards co-optimization. Mr. Elsenbeck suggested the Council Members meet with the Utility

Consultation Group to ensure that the final Scoping Plan does not result in unintended issues on the distribution side.

Presentation and Discussion: Disadvantaged Communities Update

Co-Chair Seggos thanked the Climate Justice Working Group for their efforts and announced their unanimous vote on putting forth a draft definition of “disadvantaged communities” for public comment.

Alanah Keddell-Tuckey, Director Office of Environmental Justice, NYS Department of Environmental Conservation, presented information on how the “disadvantaged communities” definition moved from conception to public comment. The geographic scoring approach used data from national and state sources to create 45 indicators across multiple categories. For each indicator, the percentile-rank of each census tract is used in the scoring, including those for certain tribal and indigenous lands. Categories of indicators included environmental burdens and climate change risks (20 indicators) and population characteristics and health vulnerabilities (25 indicators). Proportionally, more urban census tracts (47 percent) were designated as disadvantaged than rural areas (15 percent) and specifics on the regional results were presented. Using 200 percent of the Federal Poverty Line as a proxy for 60 percent State Median Income definition, the individual income criteria added proportionally more households in rural regions. New York City would still have the largest proportional share of households included. Overall, the 60 percent State Median Income criteria added approximately 14 percent of households outside of the geographic definition of disadvantaged communities. Under the geographic definition and individual criteria, approximately 49 percent of households are included in the draft scenario. The Federal Poverty Line added the largest percentage of households in the Southern Tier, Mohawk Valley, and North Country.

Ms. Keddell-Tuckey provided a detailed list of items voted on by the Climate Justice Working Group:

- Include 45 indicators of (a) environmental exposures, burdens and climate change risks, and (b) sociodemographic and characteristics and health outcomes in the definition. The documentation will list other indicators the Working Group considered or wanted to include and data limitations;
- Score census tracts on relative basis using (a) percentile ranks of all indicators, (b) hierarchical scoring approach (indicators within factors; factors within component), and (c) multiplying environmental/climate component by population/ health component to obtain overall score;
- Include 35 percent of State census tracts as geographic disadvantaged communities, considering each tracts’ relative rank (a) statewide or (b) regionally (in New York City or rest-of-state). Automatically include tracts where at least 5 percent of land is federally-recognized reservation or owned by an Indian Nation;
- Include low-income households located anywhere in the State in the disadvantaged community criteria for the purpose of investing or directing clean energy programs, projects, or investments (i.e. only for purposes of Environmental Conservation Law Section 75-0117);

- Define low-income households as households reporting annual total income at or below 60 percent of State Median Income, or otherwise categorically eligible for low-income programs; and
- Pursuant to the Climate Act, the Working Group will review the disadvantaged community criteria and methods at least annually.

Ms. Keddell-Tuckey described the public input process, including that:

- NYS Department of Environmental Conservation will collaborate with NYSERDA to release information, including a summary, PowerPoint Presentation, the meeting recording, and the meeting notes on climate.ny.gov;
- A high-level memo will be provided with the sources and indicators along with the draft list of census tracts and context will be posted to climate.ny.gov;
- The Tableau map will be released with a user interface, context, complete documentation, and discussion of limitations and areas for improvement;
- Public educational session(s) will be hosted to describe disadvantaged community criteria and the public comment process (live and recorded); and
- Comments will be collected on the draft criteria and disadvantaged communities for at least 120 days and a minimum of 6 public hearings will be held.

In response to an inquiry from Anne Reynolds regarding whether the census tract of disadvantaged communities would be 35 percent of the geographic land of New York State or the population of New York, Ms. Keddell-Tuckey responded that it is actually a combination of the two. Ms. Reynolds rephrased her question and asked what proportion of the population was covered by the 35 percent geographic disadvantaged community census tract. Chris Coll, Director Energy and Climate Equity, NYSERDA responded that it covers roughly 50 percent of the population, as the Working Group wanted to ensure that the appropriate proportions of the population were covered in both urban and rural populations by including individual household criteria.

Raya Salter congratulated the team on their efforts, noted the concentration of disadvantaged communities in the Mid-Hudson region, and inquired which areas of the State would host public hearings, Ms. Keddell-Tuckey responded that the statute requires three hearings Upstate and three hearings Downstate. However, additional hearings could be added to ensure that more of the population is reached, as well as considerations for virtual, in-person, and recordings, if possible, to ensure the greatest participation.

Chris Coll presented information on the measuring and tracking of progress toward meeting the Climate Act goal of 40 percent of benefits accruing to disadvantaged communities. He discussed New York's clean energy and efficiency portfolio, which includes economy-wide investments in the areas of building, transportation, distributed energy resources, infrastructure, workforce development, market development, and outreach and education. Clean energy and energy efficiency investments can: improve health outcomes associated with reducing combustion of fossil fuels and reducing exposure of residents to thermal extremes; create economic development and wealth creation through jobs, reduction of energy burden, and improvements to homes and assets; and enhance community self-determination through capacity building and

technical assistance. He stated that considerations for identifying, measuring, tracking, and reporting benefits include:

- benefits that are tangible and meaningful to communities should be prioritized to reduce potential for greenwashing;
- complexity and cost of measurement, tracking, and reporting with desire to account for and localize benefits;
- metrics should be used to manage the benefits requirement, allowing for calibration of investment strategies; and
- investments and resulting benefits, as well as capacity for tracking and reporting benefits will vary by agency.

Mr. Coll also stated that the benefits framework will include three components:

- *Place-based investments* as a compliance metric to measure State progress toward investment mandate and goal. Place-based investments represent funding directed to projects located within communities or going to support community-related projects, where the funding and impact can be tied back to the locality.
- *Investment guidance* where agencies will be expected to incorporate considerations for disadvantaged community impacts into program design and in procurements to drive investments and benefits to and for disadvantaged communities.
- *Reporting of co-benefits* and other impacts and outcomes associated with clean energy investments in disadvantaged communities, in addition to the 35-40 percent investments compliance metric.

Mr. Coll presented a preliminary inventory of annual State clean energy and energy efficiency investments by funding source and category. The estimated investments were presented for illustrative purposes and were based on an initial inventory by agency staff in 2021 for which a refinement of the inventory is underway. Overall, estimated annual place-based clean energy and energy efficiency investments may total \$3.2 billion. The annual investment needed to meet the 35 percent disadvantaged communities requirement is \$1.15 billion, the investment to reach the 40 percent goal is \$1.3 billion. The identification of co-benefits, attribution and localization rules, and considerations for qualitative outcomes is estimated April 2022. Tracking and reporting structure and process is estimated in September 2022, with reporting commencing in the fourth quarter of 2022. Guidance to agencies and regular engagement with agency staff will commence, thereafter.

Raya Salter requested clarification as to whether the investment estimates were based on current spending and whether there has been discussion of how the metric of investments relates to the Climate Act mandate to reduce emissions in disadvantaged communities through work either at the NYS Department of Environmental Conservation or the NYS Public Service Commission. Mr. Coll clarified that the investment slide does not reflect where the funding or investments are occurring within disadvantaged communities and a next step will be to further refine the investment analysis across the different State agencies.

In response to an inquiry by Ms. Salter regarding the ongoing role of the Climate Justice Working Group through 2022, Mr. Coll stated that he expects the Working Group to have ongoing discussions not only on the disadvantaged communities criteria and how investments are impacting communities but also follow up engagement on the draft Scoping Plan.

In response to an inquiry by Ms. Salter as to whether the prioritization of emissions and co-pollutant reductions in disadvantaged communities has been contemplated in the context of the renewable energy program, Mr. Coll responded greenhouse gas reductions as it relates to renewable energy investments will be tracked.

In response to an inquiry from Dennis Elsenbeck as to whether a document has been produced showing what disadvantaged communities prioritize as real benefits rather than tracking spending, Mr. Coll responded that the investment framework is intended to begin tracking investment towards the benefit goal. The framework will be implemented in conjunction with programs and initiatives to ensure that the work as a whole is aligned with the objectives of the Climate Act and the Scoping Plan and is not simply money being spent. Investments can take the form of economy wide investments such as workforce development activities, transportation, or building infrastructure. Mr. Elsenbeck is concerned that the communities were not consulted in developing the framework. Co-Chair Seggos stated that the Council Members will have an opportunity to continue this discussion and progress the framework in the coming months.

Discussion and Vote: Development of Draft Scoping Plan

Sarah Osgood, Executive Director, Climate Action Council, provided the overview of the revised draft Scoping Plan and the process used. The revised draft Scoping Plan was discussed by topic with Council Member input incorporated from the November 30, 2021 and December 6, 2021 Council meetings. Additional edits suggested at the meeting would be discussed and subject to a simple majority vote for approval for that edit. A vote to release the draft Scoping Plan for public comment would also require a simple majority approval, subject to any edits approved at this meeting, and Council Members were permitted to make a brief statement upon casting their votes.

Gas Systems Transition

The first topic discussed was the Gas Systems Transition chapter. Dr. Bob Howarth expressed his concern that Chapter 18 (Gas Systems Transition) is ambiguous, implies some role for gas distribution indefinitely into the future, and as the chapter explicitly addresses the use of renewable natural gas or hydrogen, which would amount to less than 3% of current use of fossil gas, it is his belief that use of existing gas pipelines for renewable natural gas would be challenging and should not be used this way. In addition, Dr. Howarth stated that, currently, hydrogen alone cannot be safely transported through the existing gas infrastructure, and the use of hydrogen for heating homes and commercial buildings is hugely inefficient. In sum, Dr. Howarth suggested removing the provision which includes a future role for gas distribution or its infrastructure and replacing the words “natural gas” with “fossil gas” throughout the chapter. He believes that his suggested changes would make the chapter more consistent with the recommendations from several Advisory Panels.

Dr. Paul Shepson stated that Dr. Howarth articulated a compelling case for the suggested changes and voiced his support.

Gavin Donohue stated his concern about the process and what he believes to be very substantive changes at too late a date. He does not believe the Council could definitively state that at this time that there is no use for gas transportation systems in the future and he intends to put a statement into the record voicing his support and concerns with certain portions of the draft Scoping Plan. Mr. Donohue stated that he believes Dr. Howarth should be doing the same as opposed to suggesting a substantive change to the draft Scoping Plan.

Raya Salter stated that she believes the suggested changes are non-substantive and clarifying and are consistent with the Climate Act to eliminate the use of fossil fuels, and part of that is to eliminate the use of natural gas and its transportation systems. Ms. Salter expressed her full support for the proposed changes.

CEO Falcone voiced his support for the thrust of the chapter, and it is his understanding that the NYS Public Service Commission has a study underway to plan for the use of the gas system in the future. He believes that there are studies underway regarding the potential for using the existing gas system for hydrogen, but with no conclusive results as yet. He stated that he was not definitively stating that continuing to use the gas systems makes sense (or not), rather the importance of following science to reach conclusions and he does not believe conclusions have yet been reached.

Dennis Elsenbeck stated his belief that the Council should be bringing in subject matter experts during the public comment period to further understand the implications of hydrogen and how it can be used or disbursed. Mr. Elsenbeck referenced private industry and the State University of New York research centers as a means through which information can be gathered during 2022.

Peter Iwanowicz stated his support for the proposed changes by Dr. Howarth, agreeing with Dr. Shepson's statement that a great case had been made. He added granularity to Ms. Salter's comment, agreeing with her position and stating that there are inconsistencies in the draft Scoping Plan, particularly as to renewable natural gas, and his belief that the proposed changes clarify some inconsistencies between chapters to the benefit of the public comment process.

Donna DeCarolis stated her belief that the draft Scoping Plan has been transparent and collaborative and believes that Dr. Howarth's proposal at this late stage is contrary to that process. She also stated her belief that the comments are substantive changes and that these changes are the type she believed would be discussed with the public input during 2022. She also stated that no option should be taken off the table until there is confidence in replacement systems.

Rose Harvey inquired as to whether there is a middle ground to make the chapter more consistent with the rest of the draft Scoping Plan without stating the gas transmission system will be dismantled altogether. If so, Ms. Harvey would prefer to take that path and further discuss the possibilities during 2022.

Co-Chair Harris inquired of Dr. Howarth if he could see a future of compromise and include language in the draft Scoping Plan that could present the disparate points of view voiced during the meeting as an alternative.

Dr. Howarth disagreed that his suggestions are coming at the eleventh hour, and stated he initially expressed his concern at the November 2021 meeting, not having heard mention of the issue at previous Advisory Panel or Council meetings. Dr. Howarth also stated that he believes his modifications are modest. The original line in the draft Scoping Plan Dr. Howarth suggests modifying states "All of the information before the Council indicates the achievement of the emission limits will entail a restructuring of the natural gas system." [emphasis added]. Dr. Howarth believes the word "restructuring" is inconsistent with the remainder of the draft Scoping Plan, which states that natural gas will no longer be used in the future of New York State. Dr. Howarth feels that use of the word "restructuring" is too ambiguous when the gas transmission system may be dismantled, downsized, or something else entirely and therefore suggested replacing "restructuring" with "downsizing, and perhaps eventual complete dismantling".

Anne Reynolds stated that her instinct was similar as to Ms. Harvey and ultimately believes that Dr. Howarth's proposed language is clearer and reasonable. She expressed her support for the proposed sentence ". . . explore the safest, most reliable, and least expensive approaches for an orderly transition away from fossil gas . . ." while leaving the language "some investments in traditional infrastructure may still be necessary", illustrating a balanced approach and that there are safety, reliability, and cost issues, and that the Council should continue to explore the best way to transition to ensure not being caught short in the future.

Dr. Shepson stated his belief that to maintain the natural gas transmission system through 2050 would require substantial investment and maintenance into a system that is known to be leaking and would require a cost benefit analysis to determine whether maintaining the system for use with hydrogen is appropriate. Dr. Shepson also inquired as to the role the Council will play in the future drafting of the Scoping Plan, and the extent to which additional testimony and information may be brought forward to the Council for consideration and possible inclusion in the final Scoping Plan.

Raya Salter expressed her dismay that the suggested changes are characterized as substantive and does not believe a vote on the draft Scoping Plan is appropriate if an agreement cannot be made on the proposed changes.

Ms. Osgood clarified that next steps will be presented at this meeting but does see a role for the Council to continue discussions into 2022 and to review feedback from the public. In response to an inquiry by Dr. Shepson as to whether it would be clear what the "drop dead date" would be for including additional changes into the final Scoping Plan, Ms. Osgood stated that a specific date has not yet been decided upon but would be clearly communicated.

Raya Salter expressed that she believes if more time is needed to get this portion of the draft Scoping Plan correct, the Council should take it.

In response to an inquiry by Co-Chair Harris as to whether there were additional edits proposed for this chapter that should be discussed by the Council Members, Ms. Osgood responded that the discussion of Dr. Howarth's proposed edits were intended to capture all concerns. Co-Chair Harris stated her belief that Dr. Howarth's edits leave open the question of renewable natural gas and hydrogen for further discussion during 2022 by the public and Members. Dr. Howarth stated that it was his intention to leave the issue open for future discussion and that his proposal is merely to make the draft Scoping Plan chapters consistent. Co-Chair Harris stated her belief that Council Members would prefer, based on the discussion during this meeting, to vote on whether to include Dr. Howarth's edits in full in the draft Scoping Plan.

Co-Chair Seggos posed the question as to whether there is a more surgical way to include dissenting or minority opinions in the record.

Rose Harvey stated her belief that the edits, after having heard them read, leave room for all possibilities in the future.

Raya Salter stated her belief that there is no contrary position articulated to the non-substantive edit.

Donna DeCarolis stated her preference for both positions to be included in the draft Scoping Plan, as she had not been able to thoroughly read the proposed edits prior to the meeting.

Co-Chair Seggos suggested that as the proposed edits are really on only one sentence, that they be viewed next to the original content for ease of comparison.

Anne Reynolds stated that Chapter 24, Future Work, does not state the role of the Council during 2022, and suggested adding a sentence that acknowledges the intention for continued debate on certain issues.

Gavin Donohue suggested that including the word “dismantling” is problematic and substantive in absence of addressing the alternatives and further suggested modifying Dr. Howarth’s language to state that the system must be studied during 2022, owing to the lack of knowledge about the implications of dismantling. A discussion ensued regarding the accuracy of the descriptors “downsizing”, “restructuring”, and “dismantling”, to which Mr. Donohue responded that he believed it would be irresponsible to include the language until the implications have been studied.

Donna DeCarolis voiced her support for a full study with energy providers and the New York State Public Service Commission, stating that there is a great body of research about the best ways for the gas system to be resilient and reliable while still decarbonizing New York. She added that it is still unknown what the role and benefit of leaving the gas system intact could be. She also noted that this topic did not have the benefit of a specific Advisory Panel assigned to its discussion during the development of the draft Scoping Plan.

Co-Chair Seggos believes that there is enough room in the proposed edits for each Council Member to be comfortable, as it includes the understanding that the achievement of Climate Act goals will entail a downsizing, and perhaps dismantling, of the system. The changes recognize the current state of knowledge known by and provided to the Council during the drafting but includes room to forgo full dismantling if it is unnecessary or impossible.

Dr. Shepson does not believe the most important word is “dismantling,” but rather the need to ensure that tax-payer funds are not spent on maintaining a gas system which he believes is leaking and in need of vast support and repair. He suggested that the draft Scoping Plan, as a whole, is an enormous achievement, and does not want a missed opportunity on a solid vote over a single sentence in a single chapter. Rather, he suggested some wordsmithing with dissenting members filing any statements with their vote, and continued discussion on the issues during 2022.

In moving the discussion forward, Co-Chair Harris suggested, based on the presented integration analysis, that downsizing will be part of future discussions. She suggested that, while the Members may not agree on the entirety of the suggested edits, Members agree to remove the “eventual complete dismantling” portion of the edit. When asked for his opinion on whether the sentence which includes “the virtually complete lack of gas by 2050” should be left intact, as consistent with the integration analysis, Mr. Mas responded that he feels the sentence is a bit ambiguous but believes it refers to fossil gas, stating that the scenarios reviewed did not show that in all cases in 2050 there was a complete lack of gas and that this is an area for further discourse. In response, Dr. Howarth stated that he believed his edits were consistent with the presentations thus far and is happy to defer to the suggestions by deleting any references to “eventual complete dismantling” to remove any ambiguity.

Gavin Donohue inquired as to whether the Council intends to remove references to the elimination of renewable natural gas throughout the chapter as well. Dr. Howarth stated that nothing in his proposed changes suggest eliminating it entirely, merely the transportation of renewable natural gas through the existing gas transportation system. Peter Iwanowicz believes that the edits merely recommend not building new infrastructure in places where it does not currently

exist. Rather, as explained in the Waste Chapter, that methane should be captured because of its global warming potential. Mr. Donohue believes the consensus was an “all technology” approach, that technologies would not be precluded, and that the Council’s approach would be innovative. Raya Salter suggested that some studies may indicate that there may be technological limitations regarding certain fuel technologies.

Donna DeCarolis suggested that studies are being conducted, including nationally-based research where renewable natural gas is used, and that these studies should be part of the discussions in 2022. As a result of a discussion as to whether references to potential uses of renewable natural gas should remain, Mr. Donohue stated he did not support removing them from the draft Scoping Plan. Anne Reynolds stated her understanding that the inclusion, as well as that of green hydrogen, in Scenario 2 was as a strategic use in areas that will be hard to electrify, and that it would be used on-site, rather than through the existing natural gas system. Mr. Donohue believes the NYS Public Service Commission would have an opinion on the issue. CEO Falcone stated that he does not see a future where the gas system is not down-sized and the implications of it should be the subject of future study. He suggested that no document will ever meet the needs of everyone, so he suggested moving forward, with which Co-Chair Harris agreed.

After a subsequent edit regarding reference to a greatly diminished use of fossil gas, the Council moved to vote on the amendments to the Draft Scoping Plan to include the edits provided by Dr. Howarth circulated on December 20, 2021, as amended and discussed during this meeting. Upon a Motion duly seconded, the vote to move forward with the edits was approved with a majority vote of 17 yea votes and 3 nay votes.¹

Economy Wide Strategies

The next topic for discussion were edits proposed by Peter Iwanowicz to the Economy Wide Strategies Chapter regarding the overall tone and his perception of the lack of discussion regarding carbon pricing. He believes that carbon pricing should be viewed in conjunction with emissions reductions as a way to fund changes necessary to meet Climate Act goals, that could be used in support of the multitude of needs identified in the draft Scoping Plan and would work in concert with the statutory emissions reduction requirements of the Climate Act. The level at which the carbon price is set could impact the rate at which the emissions reductions goals of the law are achieved. Tangentially, Mr. Iwanowicz suggested an edit in Chapter 11, Transportation, to rectify a disjointed recommendation with Chapter 17 regarding a recommendation to enact enabling legislation authorizing the NYS Department of Environmental Conservation to adopt a clean fuel standard.

Gavin Donohue and Anne Reynolds expressed agreement with the carbon pricing edits. Raya Salter also voiced her agreement with Mr. Iwanowicz’s carbon pricing edit, as well as the change to Chapter 11, stressing that there are limitations to what the Council can do with market-based mechanism strategies. Ms. Salter believes the clean fuel standard recommendation should be struck from Chapter 11 so the Council can discuss options in conjunction with public feedback. Mr.

¹ Yea votes were received from: Co-Chair Harris, Co-Chair Seggos, Commissioner Ball, Chair Christian, CEO Falcone, Mr. Ravaschiere, Ms. Harvey, Dr. Howarth, Mr. Iwanowicz, CEO Driscoll, Commissioner Reardon, Ms. Reynolds, Ms. Santiago-Martinez, Ms. Salter, Dr. Shepson, Commissioner Visnauskas, and Mr. Spliethoff. Nay votes were received from Ms. DeCarolis, Mr. Donohue, and Mr. Elsenbeck.

Iwanowicz agreed and recommended softening the language in Chapter 11 to “a clean fuel standard could facilitate and allow for further discussion under Chapter 17.”

Anne Reynolds stated that the Council had already accepted the recommendations of the Transportation Advisory Panel for Chapter 11 and it would be inappropriate to change them now. Ms. Salter stated the Council had not accepted all recommendations from the Advisory Panels and emphasized the importance of considering the recommendations of the Climate Justice Working Group given the tension that exists in the draft Scoping Plan, as discussed during this meeting.

Co-Chair Harris recommended voting on the two sets of edits separately. Gavin Donohue stated that he was not comfortable with the Transportation edits. Mr. Iwanowicz added that he, like Ms. Salter, did not believe the Council had accepted the recommendations of all of the Advisory Panels. Anne Reynolds stated that her reading of the chapter indicated that the Council had accepted the Transportation Advisory Panel recommendation. Ms. Salter replied that this is the type of inconsistency of which she was referring regarding acceptance of versus further study of various recommendations.

Co-Chair Harris requested that Jared Snyder, Deputy Commissioner for Air Resources, Climate Change and Energy, NYS Department of Environmental Conservation, speak to his knowledge as to the determination of the Transportation Advisory Panel to include this particular language. He offered that Scenarios 2 and 4 have a place for low carbon fuels, whereas Scenario 3 does not. Therefore, Chapter 11 included the directive to adopt a clean fuel standard in reflection of the space left for low carbon fuels in Scenarios 2 and 4. Given that, Mr. Snyder stated that a revision of the language in Chapter 11 could be made to reflect that analysis. Mr. Iwanowicz stated that was the intent of his edit and suggested a modification of the language to “a clean fuel standard could facilitate decarbonization of transportation fuels”. Ms. Salter agreed.

Commissioner Dominquez and Ron Epstein, Executive Deputy Commissioner, New York State Department of Transportation, conveyed the importance of considering low carbon fuels for hard to electrify fleets, such as snowplows and emergency vehicles.

Anne Reynolds expressed her desire to maintain the existing language as is because, regardless of economy wide strategy (cap and invest, clean energy supply standard, or carbon pricing), more study is needed and removing options from the table recommended by the Transportation Advisory Panel does not seem wise. Ms. Salter disagreed.

Co-Chair Harris suggested that the Council vote on the two sets of suggested edits separately, with one vote on the Chapter 17 change and one on the Chapter 11 change. A Motion was made to vote on the proposed Chapter 17 edits, regarding carbon pricing and as discussed at the meeting, and duly seconded. By unanimous vote of 20 yea votes and no nay votes, the edits were approved will be incorporated into the draft Scoping Plan.

Co-Chair Harris restated the proposed edits to Chapter 11, Transportation, regarding a clean fuel standard and as discussed at the meeting, and upon a Motion and duly seconded, a vote to include the proposed edits in the draft Scoping Plan was approved with a majority vote of 14 yea votes and 3 nay votes.²

² Yea votes were received from Co-Chair Harris, Co-Chair Seggos, Mr. Donohue, Mr. Elsenbeck, CEO Falcone, Chair Christian, Dr. Howarth, Mr. Iwanowicz, CEO Driscoll, Commissioner Reardon, Ms. Salter, Dr. Shepson, Ms. Koepnick and Mr. Spliethoff. Nay votes were received from Commissioner Ball, Ms. DeCarolis, and Ms. Reynolds.

Electricity

Gavin Donohue proposed edits to Chapter 13: Electricity, believing the first would be important to differentiate between locally-generated electricity and electricity generated elsewhere, such as off-shore wind. The second edit is regarding the discussion on Resource Adequacy with a suggestion to include reference to the New York Independent System Operator, as well as the State.

Mr. Donohue clarified that the intention of the first edit is to ensure the benefits of the system accrue to the frontline communities and Chair Christian provided an illustrative example of the concept using a substation analogy. In the interest of clarity, Dr. Howarth suggested “funding to be prioritized to projects that benefit frontline communities.” Co-Chair Harris proposed adopting Dr. Howarth’s proposed language as a better alignment with terminology used in the draft Scoping Plan.

Mr. Donohue’s addition of a reference to the New York Independent System Operator within the Resource Adequacy section was also supported by the Council. Upon a motion duly seconded to move for a vote on the edits proposed by Mr. Donohue, the proposed edits were unanimously approved and will be included in the draft Scoping Plan.

Draft Scoping Plan Vote

Co-Chair Harris presented Climate Action Council Resolution #4 regarding the draft Scoping Plan in accordance with Section 75-0103, subsections 11 and 12 of the Climate Act as follows:

RESOLVED, that the Members of the New York State Climate Action Council hereby approve the release of the draft Scoping Plan, as presented at its December 20, 2021 meeting, together with any changes necessary to reflect considerations discussed at said meeting and any additional non-substantive editorial or grammatical changes deemed necessary for clarity or accuracy, for purposes of soliciting public comment for a period of not less than 120 days, which will include at least six public comment hearings, and will so notify the public by posting on the Climate Action Council website. The draft Scoping Plan was developed in consultation with climate justice working group and other stakeholders.

A motion was made to bring the resolution to a vote and duly seconded. Council Members were permitted to include a short verbal statement with their vote or request that a prepared statement be attached to the record.

Co-Chair Harris voted yea and offered her deep thanks to all, from the Council, Advisory Panel Members, agency staff and to members of the public, who contributed to getting the draft Scoping Plan to this point to prepare it for release for public comment.

Co-Chair Seggos voted yea, stating that the draft document effectively memorializes the incredible amount of work that has gone into the draft Scoping Plan over the past two years and he thanked everyone for their hard work.

Commissioner Ball voted yea, thanked the Council Members for their efforts and expressed his intention to provide a written statement to accompany his vote.

Donna DeCarolis voted yea and asked that her previously provided statement be attached as part of the record. She stated that it has been a pleasure to work with the Council Members, that there are many things in the draft Scoping Plan that she supports. She identified three areas that she believes need continued work: (1) the lack of customer cost impacts for all customers should be discussed during the 2022 hearings as the upfront cost to ratepayers is approximately \$20,000 to \$50,000 to convert the average Upstate single family home to an electric heat pump; (2) to include a thorough evaluation of how to optimize the existing gas transmission system as was extensively discussed during the meeting; and (3) regional considerations that account for the varying needs of disparate communities throughout the State should be included.

Gavin Donohue voted yea and voiced his support for the statements made by Ms. DeCarolis and for the opportunity for the public to weigh in. He indicated his satisfaction with the level of detail surrounding the carbon pricing discussion. He expressed disappointment with the lack of discussion surrounding zero emissions technologies, resource dispatchability, maintaining existing renewable resources within the State, and the contemplation of a moratorium on natural gas, skeptical that the ramifications of such a decision are fully understood. He expressed concern regarding the lack of information regarding costs and funding mechanisms. Mr. Donohue also stated he has provided a statement for the record.

Dennis Elsenbeck voted yea and voiced his support for the work of key staff, specifically Carl Mas, Sarah Osgood, Jared Snyder, and the staff teams who were so responsive to questions and concerns throughout the process. Mr. Elsenbeck requested a basic diagram of the electrical system and where the Climate Act goals fit, suggesting that terminology may have been misused during the process. Mr. Elsenbeck also stated his opinion that the Council needs to focus more on clean energy manufacturing jobs that align with Climate Act goals and ensuring the benefits designed to flow to disadvantaged communities will truly reside there. Mr. Elsenbeck expressed support for additional natural gas transmission system study, as well as further discussion between the Council and the Utility Consultation Group and other experts.

Thomas Falcone voted yea and voiced his gratitude to Co-Chair Harris, Co-Chair Seggos, Sarah Osgood, Carl Mas, and the Council Members.

Vincent Ravaschiere voted yea on behalf of Hope Knight, President and CEO-designate and Acting Commissioner, and noted the importance of thoughtful development of policies in ways that do not produce economic or emissions leakage.

Chair Christian voted yea and voiced his support for a lengthy public comment and input period to ensure the needs of all New Yorkers are met and ensuring that the energy transition embarked upon emphasizes reliability, affordability, safety, and environmental considerations. He also stated that his vote today and others throughout the meeting should not be viewed as an endorsement or evidence of predetermination on any particular topic that may come before the NYS Public Service Commission in the future.

Dr. Bob Howarth voted yea and acknowledged the tremendous effort by the Council, leadership, Advisory Panels, and staff for this achievement on what he described as a powerful report. Additionally, Dr. Howarth thanked the Members for their positive reception of his proposed edits during this meeting and looks forward to the continued effort.

Peter Iwanowicz voted yea and expressed his gratitude for the Co-Chairs, fellow Council Members, and staff who worked diligently in developing the draft Scoping Plan. He believes that the draft Scoping Plan provides leadership in the form of a common sense economic blueprint for the State, given his belief that the cost of inaction is \$90 billion more than the cost of acting and the

benefits of acting outweigh the costs by \$90 to \$120 billion. He believes that acting will negate climate pollution, prevent premature deaths, create more than 100,000 jobs, and will invest in disadvantaged communities to ensure a just transition. Despite that he believes the plan needs more work, Mr. Iwanowicz stated that seeking public comment is the next step and he looks forward to the future development of the Scoping Plan.

CEO Driscoll voted yea and thanked the Council for its hard work on this important milestone.

Commissioner Reardon voted yea and thanked the Co-Chairs, Council Members and staff for the great opportunity to engage in these discussions. Recognizing that the Council is still a long way from finishing its work, she believes all eyes are on New York as the work continues.

Anne Reynolds voted yea and thanked the State Team for its useful analysis that will be valuable reference material for implementation of the Scoping Plan and for the timely release. She noted that the foundation of the Scoping Plan is the building of renewable energy, storage, and transmission projects to meet the Climate Act goals. Ms. Reynolds also stressed that the Council Members agreed on more topics than they disagreed and that, although the Scoping Plan is being presented as options, over 90 percent of the emissions reductions will come from measures that are not optional and that it is important to discuss the policy differences for that final percent of emissions.

Kisha Santiago-Martinez voted yea on behalf of Secretary of State Rodriguez and extended gratitude to the Council Members, advisory panel experts, stakeholders, and agency staff and research consultants for their contributions and dedication. She added that New York is leading the way in climate change and advocates, state agencies, and staff are committed to developing the Scoping Plan and starting New York on a path toward addressing climate change and the changing role the State plays in this major global threat. She looks forward to participating in the public process and other targeted work toward finalizing the Scoping Plan.

Raya Salter voted yea and thanked everyone for their hard work on the draft Scoping Plan so far and voiced her appreciation that this effort was envisioned by grassroots advocates who championed the Climate Act in 2019. Ms. Salter stated that action must be taken on climate, that State action is more important than ever, the benefits of climate action outweigh the cost for health, the economy, women and femmes, children, and families. She remains concerned about false solutions that she believes can be found in the draft Scoping Plan and may be inconsistent with the recommendations of the Climate Justice Working Group and other stakeholders. She concluded by stating that energy justice demands that the focus not only be on greenhouse gas reductions, but also on equality, equity, and fundamental fairness. She looks forward to a robust and transparent process as the Council moves forward with its work.

Dr. Shepson voted yea and restated how impressed he is with the draft Scoping Plan, calling it a remarkable achievement and a testament to the Co-Chairs and the Council, for whom he has tremendous respect. He enjoyed working with the Council Members and the opportunity to contribute to the draft Scoping Plan, which kicks off a fantastic act of leadership by New York State. He stated his belief that to focus on the costs of achieving the Climate Act goals is misleading, biased, and serves to discredit the thorough cost benefit analysis. He added that focus would rob New Yorkers of the knowledge of the substantial net benefits. Dr. Shepson concluded by stating that he is very proud to be associated with the effort.

Rebecca Koepnick voted yea on behalf of Commissioner Visnauskas and thanked the Co-Chairs, the Council Members and staff for the rigor, passion, and attention to detail they brought to the draft Scoping Plan effort.

Henry Spliethoff voted yea on behalf of Commissioner Mary Bassett and emphasized the dedication of the Co-Chairs, Council Members, and agency staff who have worked diligently on the draft Scoping Plan. He emphasized the diversity of perspectives represented and constructive dialogue has contributed to a strong draft Scoping Plan. He stated that climate change has been described by the World Health Organization as the single biggest health threat to humanity, with expected increases in respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather, changes in the prevalence and distribution of food and waterborne illnesses and other infectious diseases, and threats to mental health. He stated that the draft Scoping Plan strategies provide a path forward to reduce the risk of these direct health impacts. Mr. Spliethoff suggested that the additional health co-benefits of selected strategies, such as reducing air pollutant co-emissions, are enormous. He concluded by stating that considering avoided health outcomes in the development and scope of the future climate policies is in line with the Department of Health Prevention Agenda and New York's Health and All Policies initiative.

The resolution was unanimously adopted with a vote of 19 yea votes and no opposed.

Co-Chair Harris thanked everyone for their work in releasing the draft Scoping Plan for public comment and echoed the comments of Anne Reynolds that the commonalities outweigh the differences, and all should be tremendously proud of putting forth such an ambitious work product.

Sarah Osgood described next steps. The draft Scoping Plan will be released on the Council website on December 30, 2021, which initiates the public comment period, during which complementary analysis will continue. Public comment includes both written and oral, through a minimum of 6 public hearings, comments received during the at least 120 day comment period, which would end at the end of April 2022, as well as targeted stakeholder engagement. This date could be extended should the Council so decide. Written comments will be accepted through the Council website, email, and those submitted by mail. All comments will be posted publicly after the close of the public comment period.

Ms. Osgood stated that six geographically balanced public hearings are required (three Upstate and three Downstate), emphasizing that the Council will continue to monitor the Covid-19 health and safety guidelines in determine in-person viability and will plan for a virtual hearing, as well. The public hearings will likely be held in March or April 2022. The format of the meetings will likely begin with a 30 minute overview of the draft Scoping Plan to provide an educational opportunity, with the remaining time focused on public comments. Council Members are encouraged but not required to attend these hearings, however it is hoped that at least four Council Members will plan to be present at each hearing, with Council Members attending at least two hearings.

Ms. Osgood explained that there will be stakeholder engagement meetings with the Climate Justice Working Group as well as additional targeted stakeholder engagement that could include technical experts, disadvantaged communities, and implementation partners. These meetings are anticipated to begin in March and April 2022.

Ms. Osgood next explained that public hearing awareness outreach will include traditional and social media, a series of press releases, revamping the climate.ny.gov website to serve as a home for the draft Scoping Plan and to provide additional resources for the public to review and

provide comment. A social media campaign to drive awareness of the website and messaging around key sectors will be undertaken.

Peter Iwanowicz suggested considering hosting public hearings during the evenings and on weekends to ensure inclusivity. In response to an inquiry by Raya Salter regarding whether the Council Members should expect regular meetings throughout the public comment period, Ms. Osgood responded that meetings are likely to be held on a monthly basis, with more frequent meetings as the final Scoping Plan is drafted.

Co-Chair Seggos observed how quickly the past two and a half to three years have passed and that the idea of an economy wide shift seemed almost unthinkable when the Climate Act was enacted in 2019. Yet, the Council has now voted to release the draft Scoping Plan for public comment, and he applauded the Council Members for their dedication, wisdom, and tireless work. Co-Chair Harris thanked everyone and wished all a happy holiday and the meeting was adjourned.



Climate Action Council

KATHY HOCHUL
GOVERNOR

DOREEN HARRIS
CO-CHAIR

BASIL SEGGOS
CO-CHAIR

Meeting Agenda

December 20, 2021

- Welcome
- Consideration of November 30 and December 6, 2021 Minutes
- Presentation and Discussion: Jobs Study and Integration Analysis Updates
- Presentation and Discussion: Disadvantaged Communities Update
- Discussion and Vote: Development of draft Scoping Plan
- 2022 Next Steps

Donna L. DeCarolis Statement
Climate Action Council Meeting
December 20, 2021

It has been my privilege to serve as a member of this Council and contribute to its important work. I support many of the initiatives it is advancing, including the adoption of accelerated energy efficiency measures, the need for frequent evaluations to assess power system reliability, robust research and development programs to facilitate deployment of innovative emissions reduction solutions, and the use of the natural gas distribution system to deliver renewable natural gas (RNG) and hydrogen for hard-to-electrify applications. Having said that, however, the draft Scoping Plan doesn't go far enough with many of these initiatives, and also fails to adequately answer critical questions about the cost of electrification (including its impact on electricity and natural gas costs), who pays that cost, and the appropriate evolution of New York's complex energy system in a way that ensures continued energy affordability, reliability and resiliency for the state's residents, businesses and manufacturers. The need for a laser focus on the reliability and resilience of New York's energy delivery systems can't be stressed enough, particularly in light of the NYISO's *2021–2030 Comprehensive Reliability Plan* issued earlier this month, which "demonstrates that our reliability margins are thinning to concerning levels beginning in 2023" and that "the system may cross a reliability 'tipping point' in future years such that the transmission system could not fully serve the demand."

Customer Cost Impacts are Missing

It is imperative that the Plan include a detailed, credible analysis of cost impacts for all consumer sectors across New York, and that information should be part of the public discussion of the Plan. Presently, the Plan does not include this information. This omission is especially concerning in light of the significant upfront costs to convert an upstate single-family home to all electric, identified by the Council's consultants as costing between \$20,000 to \$50,000 for heat pump installation and energy efficiency upgrades. Using these numbers, in National Fuel's service territory alone the estimated cost would be between \$10 and \$25 billion dollars. These costs are particularly remarkable given the \$159,000 median sales price of a home in the counties that make up National Fuel's service territory. We simply cannot pursue a historic overhaul of the state's energy production and delivery systems without a clear picture of all of the costs consumers will bear, particularly low-income consumers and those living in Disadvantaged Communities.

Also Missing is an Evaluation for Optimization of the Natural Gas and Electric Energy Systems

Mandated electrification of heat, bans on appliances, prohibitions on natural gas service, closure of substantial portions of the natural gas delivery system and near-complete, economy-wide electrification are all extraordinary measures that would increase costs for consumers, and could also impair energy reliability and resiliency. Not only are these measures dramatically premature given the early stage of the state's energy transformation, they are unnecessary to fulfilling the goals of the Climate Act and may limit New York's ability to achieve a responsible energy transformation. Rather than forgoing opportunities to leverage the natural gas system, the Plan should instead seek to create a blueprint to optimize and evolve it in a way that will not only preserve but enhance reliable energy delivery for New Yorkers.

Specifically, the Plan should more thoroughly evaluate the use of the dual-heat pathway for buildings and include comprehensive research and development of low- and no-carbon technologies such as RNG and hydrogen that can be transported by the state's existing natural gas infrastructure and used to mitigate electric system build out and winter peak. Both pathways will provide needed resilience during extreme weather events and reduce emissions in impossible and difficult to electrify subsectors of New York's economy. Recent projects such as New Jersey Resources Corp.'s hydrogen pilot project, which has been

delivering small quantities of green hydrogen to homes and businesses in the utility's service area, suggest that these technologies have even broader applications. Multiple utility studies indicate that a hybrid approach to heat decarbonization can achieve net zero more affordably and reliably by pursuing widespread energy efficiency and using RNG and hydrogen as well as dual energy heating systems. All of these options should be explored with the rigor included for mandated electrification of heating. Technologies that are capable of decarbonizing the state's energy system should not be earmarked at this early stage for only certain sectors but should be considered for use in multiple sectors as the full potential of these technologies is discovered through extensive research and development efforts.

Regional Considerations

I am especially concerned about the Plan's effect on upstate New York, where energy affordability and reliability are even more critical for customers and businesses due to greater financial challenges and more extreme climate conditions. On average, over the past ten years Buffalo has been 56% colder than New York City. As it is, the Plan cannot answer the question of whether upstate customers required to electrify their single-family homes at great expense will pay more to receive potentially less reliable service. That is not the Council's aim, of course, but the Plan makes no assurances that it will not be the result. It is worth pointing out as well that upstate emissions are already substantially lower than downstate. Given these obvious regional differences across the State, regional solutions such as utilizing dual energy heating systems in the coldest regions of the state, where air source heat pumps are less effective and efficient, should be pursued by the Council.

Public Review and Comment

While recognizing that hearings will be scheduled across the state, I am nonetheless concerned about whether the public is aware of the breadth, scope, and intended impact of the Plan. I am respectful of the process that the Council has followed so far, but I believe that the public needs to be made more aware of the degree of transformation being advanced by policymakers.

Accordingly, I support issuing the draft Scoping Plan for public review and comment. Integral to my vote is an expectation that the Council will ensure that the draft Scoping Plan, and the important issues concerning cost, safety, reliability and resiliency not fully addressed in the Plan, will receive a thorough and fair review by the Council and before the public.

Written Statement

IPPNY's President & CEO Gavin J. Donohue, Climate Action Council Member **Draft Climate Action Council Scoping Plan**

December 20, 2021

Opening

The Council must produce a Scoping Plan that will inform New York residents and businesses about what needs to be done to meet the CLCPA's requirements. The Plan must maintain energy system reliability and consumer affordability. Implementation of the Plan through independent private sector investment in renewable energy, energy storage, and zero-emission dispatchable resources, all while retaining our existing fleet of non-emitting resources, is essential to our State's success.

I am very concerned that the draft Plan being released for public review still falls extremely short. The draft Plan has identified the scope of issues that need to be considered, but the Council has not come to reconciliation on controversial matters and, instead, has deferred much of its important decision-making until more discussion can occur next year. This delay means that the State's residents and businesses cannot fully appreciate what direction the Council is taking on the important issues of reliability and affordability, and they will be unable to offer worthwhile feedback, since so much is missing.

Importantly, the New York Independent System Operator (NYISO) has indicated that, as we move to a zero-emissions grid, the State must understand how the growth of intermittent resources and extreme weather could impact the ability to maintain reliability of the New York bulk electric system. Resource adequacy margins are tightening across the New York grid from Buffalo to Long Island. Reliability margins are thinning to concerning levels as soon as 2023.

The concerns about the adequacy of electricity supply will be even more magnified, as the State looks to undertake the aggressive electrification of the sectors of the economy that is needed to meet the CLCPA's targets. The goals and timetable for achieving electrification need to be made clear and carefully coordinated with the reduction in the use of emitting fuels. Electrification efforts must be aligned with the processes of the NYISO and the NYS Reliability Council, in order to ensure that adequate supply is available to maintain reliability.

Below are highlights of top tier issues, in terms of the Plan's deficiencies. However, the draft Plan includes a major benefit: for the first time, New York State is discussing the importance of carbon pricing, which is a long-standing IPPNY priority.

Plan's Short-Comings

Consumer Cost and How to Pay for It

The draft Plan does not include enough specifics to provide directionality for what it will cost residents and businesses and how they will be able to pay for those costs. It is true that NYSERDA's Integration Analysis has looked at the "total potential costs and potential economic and non-economic benefits of the plan," as required by the CLCPA, but this macro-economic examination of societal costs and benefits

does not yield practical information for consumers. The CLCPA also requires analysis of the cost of implementing the draft Plan's proposed emissions reduction measures, and the quantification of these costs is less clear.

It is difficult for consumers to understand that compliance with the CLCPA is intended to produce more benefits for them than costs, when they are faced with the costs of installing or accessing renewable energy and energy storage, replacing their heating systems, buying electric cars, and figuring out ways

to charge them. Their dilemma is compounded by the need to do their best to afford their standard of daily living in the face of increasing costs arising from the State's ongoing recovery from the COVID-19 pandemic.

The compliance costs are known to some extent, and the draft Plan should include more specific cost study scenarios that show residential, commercial, industrial, and institutional energy consumers, along with local governments, what actions they need to take to comply with the draft Plan and how to pay for them. The draft Plan must include specific proposals to make Plan compliance affordable in a way that avoids or minimizes upfront costs to energy consumers.

Need for Zero-Emission Dispatchable Technologies

In the area of reliability, ambiguity about the role of zero-emission dispatchable technologies is particularly perplexing, in regards to the role of resources such as green hydrogen and renewable natural gas, when the State's own consultant, E3, and the NYISO both have indicated the need for zero-emission dispatchable resources to meet the CLCPA's 100 by 40 goal reliably.

Although the draft Plan mentions the need for zero-emission dispatchable resources, it focuses on energy storage; energy storage is important, and developers are making those investments. However, additional technologies are needed, as shown by E3 and the NYISO, but the draft Plan does not recognize the steps, such as the ones noted below, that the State is taking, and should continue to take, in order to ensure energy reliability on the road to 100 by 40. New York can set an example for other states and nations by exploring every resource available as a potential tool to address climate change.

Indeed, NYPA, a fellow Council member, is conducting a pilot project to blend hydrogen and natural gas at one of its power plants on Long Island. Also, the State held a ribbon-cutting event at the opening of Plug Power's \$125 million Hydrogen Fuel Cell Innovation Center and grounding breaking on its \$290 million, state-of-the-art, green hydrogen fuel production facility and electricity substation at the Western New York Science, Technology and Advanced Manufacturing Park. For our part, IPPNY submitted a joint petition with the NYS AFL-CIO and the NYS Building and Construction Trades Council to the PSC to urge the creation of a market-based program for the development of needed technologies to maintain reliability on the way to the 100 by 40 target. However, the draft Plan does not acknowledge or include these provisions.

Preserving Existing Renewables

Although the draft Plan includes existing hydro and nuclear facilities as part of the resource mix to meet reliability, the draft Plan needs more provisions to help ensure that the State's existing renewable energy baseline is strengthened. The State must make improvements to NYSERDA's Competitive Tier 2 Program.

The renewable energy baseline will be lower next year than it was when the CES first started. Renewable companies are exporting their RECs to other regions, where they are compensated more. Exported RECs do not count towards CLCPA targets.

Preserving our mix of existing renewable energy facilities and retaining and expanding other non-emitting facilities are as important as the investments that developers are making to grow the State's renewable energy and energy storage resource portfolio.

Avoiding Moratoriums

In terms of meeting 100 by 40 reliably, the draft Plan contains some mention of moratoriums on the permitting of new fossil fuel plants and natural gas infrastructure, but, importantly, these are not the views of the Council as a whole. I have pointed out that moratoriums should be avoided because the Article 10 power plant siting law contains provisions that ensure adherence to the CLCPA's targets. Article 10 also provides for a process to minimize, avoid and offset any significant and adverse disproportionate environmental impacts to the maximum extent practicable using verifiable measures for the duration of the Article 10 certificate.

Positive Aspect of the Plan

Carbon Pricing

New York State deserves credit for including a robust discussion of carbon pricing and closely examining how it can be implemented. The State has long been silent on carbon pricing, and this level of engagement is positive and necessary.

The draft Plan includes provisions supportive of carbon pricing and acknowledges the NYISO's carbon pricing proposal, which is an IPPNY priority, along with the need to reconcile programs with RGGI. IPPNY has underscored that the NYISO's carbon pricing program will: diminish New York State's reliance on out-of-market subsidies (thereby reducing costs for consumers); accelerate both the decarbonization of the State's generation fleet and the entry of new renewable projects (thereby meeting CLCPA targets sooner); and create stronger economic incentives for cost-effective transmission investment. The sooner New York State adopts the NYISO's carbon pricing proposal related to electric generation, the sooner New York's public policies will be achieved.

Carbon pricing would not operate in a vacuum and would be cognizant of, and consistent with, the State's enforceable emission limits under its existing air permits and programs, Section 7 of the CLCPA, and its CLCPA regulations that will be in place by 2024. Furthermore, and more specifically, the DEC already has its Part 251 CO2 Performance Standard Rule for new, modified, and existing facilities.

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Dennis Elsenbeck, Viridi Parente
Member of New York's Climate Action Council
Written Comments – December 20, 2021

Public Comment Period – The Electric System

As the Scoping Document moves to public comment, I encourage those planning these sessions to develop simplified diagrams depicting the electric system and where key climate initiatives impact the system.

Discussion on “Cost”

The Integration Analysis provides anticipated benefit-cost covering system investment, GHG, health and so on; we need further discussion on how the energy consumer views cost which tends to be a month over month and/or year over year view of their electric bill. Energy cost trends are utilized by most energy consumers to build their budgets; this is especially true with industry that forecasts unit cost per unit produced used in sales, production and unanticipated risk projections.

Cost related discussions should not be viewed as a barrier or objection to achieving climate goals; we owe energy consumers this information for their planning purposes and for market participants to consider forming alternative proposals (non-wires alternatives) to traditional regulatory/utility asset investment models.

- Presentations made to the CAC indicating a 65 to 80% electric demand increase due to decarbonization efforts could theoretically impact most, if not all distribution feeders
 - A quick view of a utility electric portal, that are now color coded, show feeder capacity in red, yellow and green; red (near capacity), yellow (some capacity) and green (available capacity). Feeders in Buffalo, for example, are mostly red and yellow within the urban core, which I fear is not unique to Buffalo. Overlaying the electrification of our economy in accordance with the Integration Analysis timeline, within the utility portal, should provide a clear picture of feeder investment and priority.
 - As we have advanced the renewable energy agenda, predominately on the supply side of the electric system, generation pockets have resulted bringing into question the resiliency of the system. In response the PSC issued an Order in September to the utilities to perform T&D studies to resolve this issue which will result in a future cost to the ratepayer. As we increase our solar goal from 6 gWs to 10 gWs, we need to ensure that electric system impacts are captured in the SIR and CESIR process so that we are more proactive in avoiding further generation pockets.
 - We need to be proactive in understanding the cost impact on the distribution system ahead of decarbonization as modeled by the Integration Analysis. This may allow community groups, developers, utilities and other market participants to bring forth non-traditional solutions encompassing micro grids, distributed energy storage and other DER solutions to compare against traditional regulatory/utility models.

The Utility Consulting Group (UCG) provided comments prior to receiving the draft Scoping Document; once the UCG updates their feedback in response to the now public draft Scoping Document, I would encourage a follow-up session between the UCG and the CAC to discuss their observations/comments. The UCG represent subject matter experts on infrastructure planning and investment, ratepayer communication and feedback, as well as, a historic resource of past policy initiatives that we must learn from as we finalize the Scoping Document through 2022.

- The CAC should discuss the merits of a PSC Order to develop costs associated with distribution system investment levels and timing to achieve decarbonization targets using the CLCPA Integration Analysis as a guide
 - Capacity constraints on the distribution system that limit economic growth should also be included and integrated into investment needs. Economic Development Agencies can assist on prioritizing where capacity constraints exist based on historical interest of developers and site selectors
- Utilities may also be requested to bring forward alternative distribution investment models based on current and/or proposed regulatory structures.
- Utility input should include DER ownership (short term and long term) perspectives, demonstrations, pilots and so on regardless of past practice/policy.

Jobs Study

NYSERDA's 2021 New York Clean Energy Industry Report

- 157,700 workers employed by clean energy businesses as of the last quarter of 2020
 - Given focus on “disadvantaged communities”, we should consider including clean energy jobs created within disadvantaged communities as a trackable “benefit” metric
- Installation, construction and services accounted for 87% of the jobs cited
- Manufacturing accounted for 2% of the jobs cited

Consideration should be given to expand focus on clean energy-oriented manufacturing supply chain development (beyond solar and wind)

- The Manufacturing Sector tends to be in a position where subsidies, paid volumetrically through electric bills, increase operating cost and reduce competitive positioning. Theoretically, these subsidies may indirectly support an out of state/country competitor of a NY manufacturer while increasing the cost of doing business in NY. We should seek to increase value by developing opportunity for NY manufacturing to see themselves within the CLCPA where possible treating them more as an investor versus cost center.
- Construction and Service positions will continue to grow as a direct result of needing to implement CLCPA goals; manufacturing and energy innovation growth strategy should be more purposeful.
- According to the 2019 Economic Policy Institute Jobs Report – Multiplier Effect
 - 100 construction jobs results in 226 indirect jobs

- 100 Professional, scientific and technical services add 418 indirect jobs
- 100 Manufacturing jobs add 514 (non-durable) to 744 (durable) indirect jobs

The Scoping Document should seek to integrate Economic Development, focus on Disadvantaged Communities and NY based clean energy-oriented manufacturing supply chains across all climate objectives

- NY Rust Belt Neighborhoods align with the definition of Disadvantaged Communities and Smart Growth leading to the potential of revitalizing dormant facilities.
- Complements Regional Economic Development Council (REDC) focus on Advanced Manufacturing and local Economic Development Agency's need for shovel ready sites.
- Enhances the Federal infrastructure approach by aligning clean energy, economic development and impact of decarbonization with needed proactive infrastructure investment planning.
- Focus would be to bring sustainable green energy manufacturing jobs to our communities and to explore "build in NY - buy NY" opportunities and challenges.

A component of the Scoping Document and/or mandated action could initiate a green energy supply chain market study

- Define emerging markets/technologies to achieve climate objectives
 - Enhance and/or Capitalize on Regional Market Studies
 - Engage SUNY System – research potential
- Align emerging markets study with REDC and local Economic/Industrial (EDA/IDA) Development Agency objectives and site availability
- Define global climate market potential by economic sector to establish NY as a global market supplier
- Define supply chain opportunities
 - Existing manufacturing – production repurposing
 - Attraction opportunities
- Workforce development alignment
- Incentives for Rust Belt site selection
 - Include zip code hiring practice

Definition of "Benefits"

The presentation made during the December 20th CAC session regarding investments to be made within disadvantaged communities did not appear to include definition of "benefits" which metrics will be derived from. When investment categories are made and not aligned with benefits, it comes across as a spending initiative. Assuming benefits have been defined and will be in the form of trackable metrics, they should be aligned with each of the "investment categories."