August 16, 2023

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Empire State Plaza, Agency Building 3
Albany, NY 12223-1350
secretary@dps.ny.gov

RE: **CASE 15-E-0302 – Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard. Order Initiating Process Regarding Zero emissions Target (Issued and Effective May 18, 2023)**

The Northeast Chapter of the Combined Heat and Power Alliance ("The NE Chapter") respectfully submits comments to the New York Public Service Commission ("PSC") regarding the requested answers to questions for comment on the PSC's May 18th Order ("Order").

The NE Chapter is a group of manufacturers, system developers, engineers, and end-user representatives with the common purpose of reducing energy costs and carbon emissions using the highly efficient technology of Combined Heat and Power ("CHP"). The NE Chapter and its member organizations fully support the innovative and extensive objectives that are the foundation of the NY Clean Energy Standard in achieving the State's decarbonization goals. Those members firmly believe that CHP technology should and must play a critical role in facilitating the State's mission.

Likewise, the NE Chapter believes that CHP technology should be included in the State's toolbox for closing the "gap" between renewable energy technologies and future system reliability needs as stated in the Order below.

This Order responds to the Petition and initiates a process to identify technologies that can close the gap between the capabilities of existing renewable energy technologies and future system reliability needs, and more broadly identify the actions needed to pursue attainment of the Zero Emission by 2040 Target. As a first step, rather than adopting a new CES tier as requested in the Zero Emissions Petition, this Order seeks input from stakeholders on options for addressing that gap.[1]

Distributed, dispatch-able and emissions free resources have been identified as a critical underpinning of the 2040 100% renewable grid with retirement by 2040 of all currently operating fossil fuel generation and replacement with renewable resources, storage, and T&D upgrades, given that a reliability gap exists.

The need for DEFRs is **extraordinarily large** in scale and is immediate. According to the NYISO, Dispatchable Emission-Free Resources (DEFRs) must be developed and added at scale to reliably serve demand when intermittent generation is unavailable[2].

Current estimates place the number of required gigawatts (GW) between 25 and 42GW under the 2040 Policy Scenario. As a result, and to meet that demand, DEFRs must be developed and deployed at scale well in advance of 2040. The Scoping Plan analysis and current studies show that the 100x40 goal requires 15 GW to 45 GW of electricity from zero-emission, dispatchable resources in 2040 to meet demand and maintain reliability, although that gap may change over time depending on forecasted demand.[3]

CHP can, and should, contribute to implementation of New York's decarbonization strategy, in the same way that the US DOE's Industrial Decarbonization Roadmap, has identified a near, mid-, and long-term play for CHP.

As the leading advocacy group for CHP in the Northeast, we are responding to several of the questions posed in the Order. We provide examples and evidence that CHP systems and technologies can assist in meeting the near-, mid- and long-term goals of the Climate Act.

To this end, we respond to the questions below.

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[1]Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard. Order Initiating Process Regarding Zero emissions Target, https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B00E12F88-0000-C914-BA3F-E14BF4BA3762%7D

[2] NYISO 2021-2040-Outlook-Datasheet.pdf

[3] New York State Climate Action Council. 2022. "New York State Climate Action Council Scoping Plan." climate.ny.gov/ScopingPlan. pg. 13, Executive Summary

Question 1: How should the term "zero emissions," as used under PSL §66-p(2)(b), be defined?

Any definition of "zero emissions" under PSL 66-p(2)(b) should be constructed in such a way as to maximize the potential for all relevant alternative technologies and systems to be identified and incorporated into said approach. No viable option should be excluded, a priori, as long as it meets the goals and objectives of decarbonization of the State economy in an equitable, just, affordable and resilient manner.

When specifying definitions and qualifying resources and systems, it is imperative that we remember that one ton of carbon reduced today is more valuable than a ton reduced in 5-, 7- or 10-years' time. This concept is referred to as the time value of carbon. Because emissions are cumulative and because we have a limited amount of time to reduce them, carbon reductions now have more value than carbon reductions in the future. The next few decades are critical.[4]

A company that reduces or stops emitting CO_2 this year creates a benefit for the climate system each year into the future. Companies that start to cut in 2030 will have spent another ten years adding to the accumulation of global carbon. By then the 1.5-degree goal of temperature rise could be out of reach. This is why long dated climate goals with no short-term action are unacceptable. It is also why we believe that near term action creates considerable value.[5]

Proper construction of this definition should ensure that zero emissions does not result in arbitrary exclusion of technologies and systems, including technologies that allow us to give value to partial reductions today and in the timeframe leading up to 2040. Including such technologies as CHP can save carbon dioxide now and affords the State precious time that will allow technology to improve and become less expensive, quicker, and more efficient. CHP built in the short term also will afford the State and its citizens an effective hedge against any potential issues that may arise with future technologies.

There is an urgency to act. As cited in the Final Scoping Plan, the 100 x 40 goal requires 15 to 45 GWs of DEFRs. That figure is extraordinary, but its critical to highlight the **immediacy** of this need. It's likely that the State will need at least 820 MWs of DEFRs completed and ready for operation by 2030. NYISO's 2021-2040 System & Resource Outlook: Appendix G identifies 30 scenarios, of which 56.67% (17 scenarios) require 819 MWs to as much as 856 MWs in place **before 2030.**

[4] Time Value of Carbon," Larry Strain, Carbon Leadership Forum, April 2020
[5] Generation Investment Management. "Insights: The Time Value of Carbon." 2023. https://www.generationim.com/our-thinking/insights/the-time-value-of-carbon/

S1 Scenario: High Natural Gas Price[6]

Installed Capacity (MW)					
	2019	2025	2030	2035	2040
Nuclear	5,400	3,346	3,364	3,364	3,364
Fossil	26,262	20,755	19,913	19,915	-
DEFR - HoLo	-	-	-	-	3,811
DEFR - McMo	-	-	-	-	-
DEFR - LoHo	-	-	856	7,394	40,939
Hydro	6,331	6,302	7,537	7,540	7,540
LBW	1,985	10,613	13,522	16,606	19,087
OSW	-	1,826	5,036	9,000	9,000
UPV	32	4,676	4,676	4,676	4,676
BTM-PV	2,116	6,834	10,055	10,828	11,198
Storage	1,405	2,910	4,410	7,357	11,450
Total	43,838	57,583	70,547	94,395	111,066

S2 Scenario: High Natural Gas Price[7]

Installed Capacity (MW)					
	2019	2025	2030	2035	2040
Nuclear	5,400	3,346	3,346	3,364	3,364
Fossil	26,262	19,620	17,282	15,691	-
DEFR - HoLo	-	-	-	-	-
DEFR - McMo	-	-	819	3,990	27,200
DEFR - LoHo	-	-	-	-	-
Hydro	6,331	6,415	7,660	7,584	7,584
LBW	1,985	7,469	7,547	15,629	19,087
OSW	-	1,826	7,436	9,000	9,720
UPV	32	4,676	4,676	14,603	29,761
BTM-PV	2,116	6,000	9,523	11,601	15,764
Storage	1,405	2,910	4,410	6,376	12,810
Total	43,838	52,583	63,840	92,151	125,290

Question 2: Should the term "zero emissions" be construed to include some or all of the following types of resources, such as advanced nuclear (Gen III+ or Gen IV), long-duration storage, green hydrogen, renewable natural gas, carbon capture and sequestration, virtual power plants, distributed energy resources, or demand CASE 15-E-0302 -16- response resources? What other resource types should be included?

This term should be construed in the broadest possible manner, consistent with the priorities and the goals and objectives of the Climate Act and balancing environment, equity, affordability, economy, and energy/grid reliability. It is likely (probability greater than 50%) that the State will require nearly 850 MWs of DEFRs in place before 2030. For this reason, consideration should be given to exceptionally low emissions resources that can be in place on an expedited time-schedule and be readily converted into zero emissions resources well before 2040.

CHP combined with emissions free fuels (RNG, Hydrogen) ought to be **the** preferred means of utilizing these scarce and/or expensive fuels. Very low emissions CHP ought to be considered as an addition to the list of technologies included in the definition, but only under strict performance requirements. For example, MIT's CHP system at its Central Utility Plant, is central

[6] NYISO's 2021-2040 System & Resource Outlook: Appendix G. pg. 7.
[7] Ibid., pg. 7

to MIT's commitment to reduce greenhouse gas emissions at least 32% by 2030.[8] MIT's capital projects site states: **The upgraded Central Utilities Plant (CUP) helps MIT lower emissions, improve campus resiliency and sustainability, and maintain a more flexible power system for incorporating future innovations**.[9]

In the most recent issue of *Health Facilities Management Magazine*, Memorial Sloan Kettering's new decarbonization project is featured. The project includes six 550-kilowatt CHP systems designed with black-start capability to provide cooling in the event of an outage.[10] Memorial Sloan Kettering states that its bold efforts have yielded impressive results in savings, decarbonization and resiliency.[11] The investment has been conducted in a manner that sets Memorial Sloan Kettering up to transition from boilers to even more efficient non-fossil-fuel-based low temperature heat pumps in the future.[12]

We conclude this section with one final illustration that captures the near term, to mid-term to long term, potential advantage in the flexibilities provided by keeping open the option to invest in CHP. Figure 1 demonstrates the carbon emissions advantage of CHP vis-à-vis the central grid, today and into the future.

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[8] Central Utilities Plant upgrade, Building 42C. Themes and priorities: Renovation and renewal Sustainability. Completion Date: 2021, https://capitalprojects.mit.edu/projects/cup-upgrade-building-42c Accessed 7/12/2023.

[9] Ibid.

[10] Decarbonization project shows sustainable savings. By Robert Berninger and Edward Kiser, PE. Health Facilities Management. July 2023 page 36

[11] Ibid., page 37

[12] Ibid., page 36

Figure 1: Renewable and Net-Zero Carbon Fuels Maintain CHP's Advantage[13]

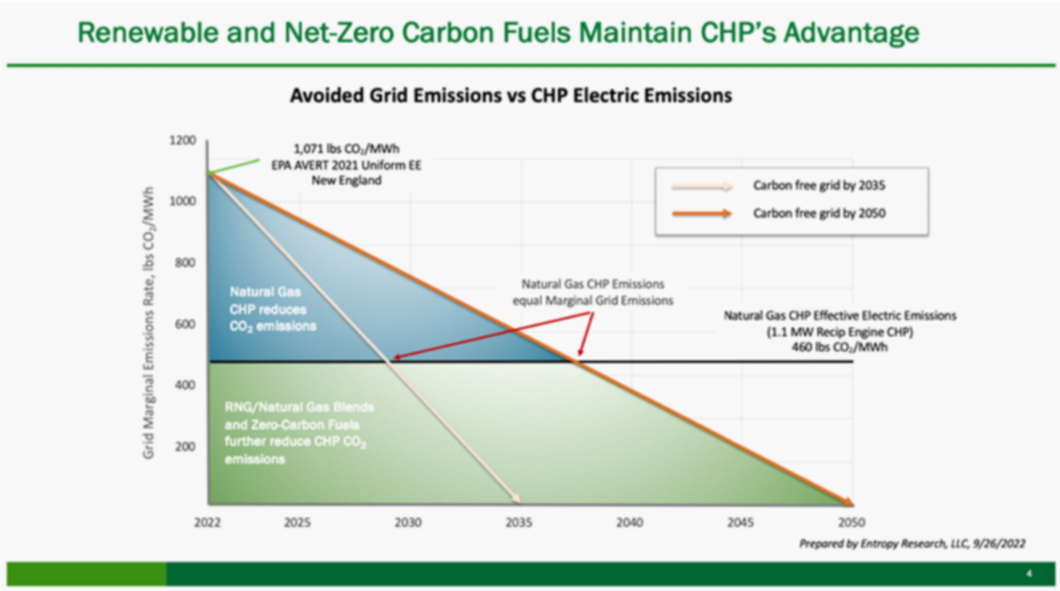

Figure 1 indicates that high efficiency CHP reduces grid emissions, now, today and maintains that advantage into the 2030's (when 850+ MWs of DEFRs may be needed). The area under the black horizontal line and to the left of the orange (2050) line indicates that as RNG and zero carbon fuels with or without natural gas blends become available (2023 – 2040), CHP can retain its advantage over the grid and eventually transition to a zero emissions resource.

Question 4. Should new measures adopted to pursue compliance with the Zero-Emission by 2040 Target focus exclusively on generation and resource adequacy, or should they also encompass a broader set of technologies that could be integrated into the transmission or distribution system segments, or installed and operated behind-the-meter?

Compliance with the Zero-Emission by 2040 Target should focus on a broad range of technologies, an all-of-the-above strategy, and inclusion of CHP. CHP technology has the potential to be a tremendous asset to the process of moving toward Zero-Emissions by 2040. CHP is a zero-carbon resource today when running on RNG or hydrogen. When properly designed, configured, and operated, CHP is a low-carbon resource that can help to reduce overall grid carbon emissions during the transition to zero emissions by aiding in the process of displacing higher marginal emissions sources. Likewise, many CHP plants are incorporating carbon capture technology, which removes CO_2 that would otherwise reach the atmosphere and employs it in applications such as agriculture, food and beverage manufacturing, and in other applications. Finally, behind the meter CHP at food processing sites, commercial buildings, at

[13] U.S. Department of Energy prepared by Dr. Bruce Hedman Entropy Research LLC, Presentation from September 26, 2022.

food growing – high tech greenhouses and vertical farms, with CO_2 capture and recycling into useful products is available now, as a very low emissions (not zero) option.

Investing in a high efficiency, environmentally superior, resilient and CO_2 savings CHP system today, does not inevitably create a “technology lock-in”, as some might argue. Because CHP engines and turbines all require periodic overhauls on an 8 to 10-year cycle (at ~10 to 15% of the original installation cost), this offers 2 or 3 opportunities to review the decarbonization landscape and potentially convert the system to low carbon fuels if available or select an alternate decarbonizing path.[14]

Question 7. Should life cycle emissions impacts be considered when characterizing energy resources? If so, how?

According to NREL, a life cycle assessment (“LCA”) is a systematic gate-to-gate, cradle-to-gate, and cradle-to-grave process that evaluates the environmental impacts of products, processes, and services. Its quality depends on the life cycle inventory data it uses.[15]

Life cycle emissions impacts should certainly be considered when characterizing energy systems, technologies, and resource options. All empirically verifiable co-benefits ought to be included in the determination of eligible systems and technologies.

Let’s take the case of RNG, a pipeline quality natural gas produced from various feedstocks. The sources can range from landfill gas to anaerobic digestion of food waste and animal manure, to gasification biomass residue, and so on. Analyses, such as the 2021 World Resources Institute report on the relative carbon intensity, which was based on a full life cycle analysis of various RNG feedstocks, can inform decision making. RNG impacts carbon emissions in three ways over its lifecycle, with life cycle emission the key measurement. RNG projects have the potential to:

- Contribute to overall sustainable waste management.
- Reduce methane emissions from organic waste.
- Displace fossil fuels.

Engaging in a life cycle emissions analysis is essential as some feedstocks will have a greater impact on carbon emissions than others.

CO_2 from flue gases can be captured for use in greenhouses for crop growth, for sales, or storage in liquid or gaseous form. This is circular economy, taking the carbon dioxide that contributes to climate change, and using it to feed the plants, or to create a liquid or gaseous

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[14] CHP and Decarbonization. Dr. Bruce Hedman, Entropy Research LLC. Campus Energy 2023. International District Energy Association. Feb 27th, 2023. Slide #14

[15] NREL. U.S. Life Cycle Inventory Database. Life Cycle Assessments. https://www.nrel.gov/lci/assessments.html. Accessed on 7/11/2023.

carbon dioxide product that can be used for food processing (beverages, brewing) or other sites (like hospitals) that require CO_2 gas.

Holistic thinking, which the discipline of Life Cycle Analyses and Life Cycle Emissions enforces, will lead to better decision making now. In the town of Saint-Félicien Quebec, an Agrothermic Industrial Park featuring circular economy and district components has been established. Heat and CO_2 produced from the Resolute pulp mill are used to heat and supplement greenhouse CO_2 in an 8.5-hectare greenhouse. Toundra Greenhouse is a cucumber-growing complex that is located on land adjacent to Resolute's Saint-Félicien pulp mill. In "circular economy" fashion, heat and CO_2 produced from the Resolute pulp mill are used to heat and supplement greenhouse CO_2 in an 8.5-hectare (21 acre) greenhouse. Onsite power will serve electric loads and provide heating for upcoming industrial tenants. The heat, cooling, and power are shared communally across the agrothermic industrial park.

Another example is in Levis, Quebec. There, heating and power are shared to grow food and power data centers. Utilizing residual heat in Levis, the CHP project will "produce 2,800 tons of small fruit and more than 80,000 tons of tomatoes per year" in greenhouses to be constructed adjacent to the facility.[16]

Another example is in Boden, Sweden.[17] There, an agreement between Agtira and Greenfood $27.8 million ($US) has been signed for a cucumber cultivation plant. The facility will be one of eventually a total of ten around the country.

Finally, in the town of Andijk, Netherlands, a state-of-the-art biomass CHP plant produces 15 MW thermal and 3.4 MW electrical power. This site produces heat and electricity from pruning and other forms of organic waste. Renewable heat is delivered in a communal manner to six greenhouse companies. Excess heat and electricity can be supplied to communally to district thermal or electric microgrids.

We implore the PSC to not design market rules that by accident, or by design, discourage the operation of systems and technologies that are reducing carbon emissions now and likely to reduce carbon emissions for many years into the future. CHP's high efficiency can extend the supply of renewable, and emerging low carbon and hydrogen fuels which will initially be limited in availability and are anticipated to be relatively expensive. There will continue to be the need for some sort of firm generation and regulation support to enhance the long-run resource adequacy of a highly renewable grid. Properly designed and operated CHP using net-zero carbon fuels could provide these services most efficiently, extending the resource base of these

[16] Greenhouse Canada. "Waste Heat Tapped by Major Quebec Grower," https://www.greenhousecanada.com/waste-heat-tapped-by-major-quebec-grower-31899/
[17] Bodenxt. "Companies Join Forces to Build Large Greenhouse," https://bodenxt.se/en/companies-join-forces-to-build-large-greenhouse/

low/zero carbon fuels and providing a source of revenue to the host industrial and commercial facilities.

Question 8. Given that the feedstocks and other resources required to produce renewable natural gas are limited and will be in demand in other sectors of New York's economy, how should this fuel be considered in the context of this proceeding?

Renewable natural gas is of paramount importance in the context of this proceeding. Zero emissions resources are essential for reliable operation of the 2040 100% renewable grid. As noted in the question, feedstocks and other resources required to produce RNG are limited and will be in demand in other sectors. They should, therefore, be used in the most efficient, the most productive manner possible. Where there is a CHP application for the RNG, i.e., where there is demand for heating, cooling, hot water, power, and perhaps other commodities (CO_2 for agriculture, food processing or other commodities), it is imperative that CHP is a first order option explored. Certain forms of storage are candidates to serve as DEFRs, but they lack the flexibility, the duration, and the resiliency of generators running on RNG. In the case of critical infrastructure, such as wastewater treatment plants, resiliency is not a "nice to have"; rather, it's a "must have": every effort should be made to use these scarce and expensive resources in a CHP configuration.

Importantly, existing CHP systems can and do utilize biogas, biofuels, and hydrogen fuels. All natural gas-fueled CHP is compatible with renewable gas. The U.S. Department of Energy's ("DOE") Combined Heat and Power eCatalog of recognized packaged CHP systems denotes many systems are clean fuels compatible today, including[18]:

- 46 existing CHP packages capable of running on digester gas,
- 4 existing CHP packages capable of running on landfill gas,
- 59 existing CHP packages capable of running on a hydrogen blend, and
- 5 existing CHP packages that are 100% hydrogen capable.

A wide variety of equipment options are soon to become much more widely available. CHP technology can use these fuels today and as such, are distributed, "dispatch-able" and can be emissions free, or net negative emissions, based upon the feedstocks (e.g. manure)

In 2022, the Climate Action Council agreed to form three subgroups to work through several issues in depth and bring what they feel could be consensus positions for the Council to consider. The Alternative Fuels Subgroup took up several issues with a bearing on the future operation of combined heat and power (CHP or cogeneration). [19]

[18] U.S. Department of Energy. Combined Heat & Power eCatalog. Last Accessed June 2023. https://chp.ecatalog.ornl.gov/search
[19] https://climate.ny.gov/CAC-Meetings-and-Materials

The Alternative Fuels Subgroup offered for consideration a set of “More Complex Assessment Criteria” which included the following factors.[20]

Could using this fuel (in this application) provide more electric system capacity for the least-cost electrification applications? Could using this fuel (in this application) mitigate peak load issues?
Does this help us use our zero-emission electricity in the most efficient manner? Can this reduce GHG emissions/fossil fuel use while technology advancement and cost declines bring more alternatives to **commercialization?**
Does it help reduce/avoid costly electric distribution system upgrades, mitigate peak load, or reduce cost of retrofits?

We would like to call the PSC’s attention to the More Complex Criteria Assessment in Row 2 of the table above: Can this reduce GHG emissions/fossil fuel use while technology advancement and cost declines bring more alternatives to commercialization?

There is an “option value” to operate CHP systems now, and (at least) up to the day when they cross the line from being a net carbon saving benefit, to a net producer of carbon emissions. This principle was espoused in the Climate Action Council’s Alternative Fuels working group. The working group recognized as a “More Complex Criteria Assessment” systems and approaches the reduce GHG emissions, allowing more time for technology advancements. The CHP system, with “very low” emissions, can save carbon emissions now, can buy businesses, homes, and industries more time for better, cheaper, faster technologies to develop and commercialize. All the “more complex criteria” in the Table above that were offered up by the Alternative Fuels working group, should be in consideration in this instant proceeding.

- Does this help us use our zero-emission electricity in the most efficient manner?
- Can this reduce GHG emissions/fossil fuel use while technology advancement and cost declines bring more alternatives to commercialization?[21]
- Could using this fuel (in this application) mitigate peak load issues?

[20] Alternative Fuels Subgroup. 2022-06-29-meeting-presentation-Alternative-fuels.pdf. pg. 14
[21] Alternative Fuels Subgroup. 2022-06-29-meeting-presentation-Alternative-fuels.pdf. pg. 14

- Does it help reduce/avoid costly electric distribution system upgrades?

Question 14. Given that New York is not the only jurisdiction investigating options and opportunities for the research, development, and deployment of new technologies capable of achieving a zero emissions grid, how should the State seek to coordinate with and otherwise draw upon efforts that are underway elsewhere?

The State should seek to coordinate with other states in the region and draw upon the information presented by other states and federal agencies and partners in an effort to ensure that the NYS program is the most successful it can possibly be, such as the leading role NY is planning to play in establishing a Hydrogen Hub.[22]

As more wind, solar, and storage plants are added to the grid DEFRs must be developed and added to the system at scale to reliably serve demand when intermittent generation is unavailable.

This question notes that other jurisdictions are investigating options and opportunities for research, development, and deployment of new technologies capable of achieving zero emissions. We would like to direct the PSC's attention to the U.S. DOE's Industrial Decarbonization Roadmap. CHP remains a part of the DOE roadmap, from the near term to the mid-term and to the long term. Section 1.2.1.1 of the report specifically addresses CHP and its rightful place as a component of the Decarbonization roadmap.[23]

For example, the roadmap states "Industrial CHP can provide significant GHG emissions reductions in the near- to mid-term as marginal grid emissions continue to be based on a mix of fossil fuels in most areas of the country. To prevent lock-in, CHP units installed today must have emissions below marginal grid emissions for the duration of their useful lifetime, including through retrofits to use clean sources of energy where possible."[24]

In Section 2, 2.4.3 Chemical Industry Subsector-Specific RD&D Needs and Opportunities, the DOE Roadmap states, "There are opportunities for further integration of CHP with renewable energy and storage to backstop risk and variability and improve resilience."[25]

The roadmap calls out near-term, medium- and long-term opportunities for CHP to play a role in decarbonization. We illustrate this point with a couple of specific examples from the report.

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[22] Seven States in Northeast Regional Clean Hydrogen Hub Announce Submission of $3.62 Billion Proposal to U.S. Department of Energy for Funding and Designation as National Hub, https://www.governor.ny.gov/news/seven-states-northeast-regional-clean-hydrogen-hub-announce-submission-362-billion-proposal-us

[23] Industrial Decarbonization Roadmap DOE/EE-2635 September 2022. pg. 17

[24] Ibid., pg. 17

[25] Industrial Decarbonization Roadmap. pg. 80

RD&D Needs and Opportunities for Food and Beverage Manufacturing[26]

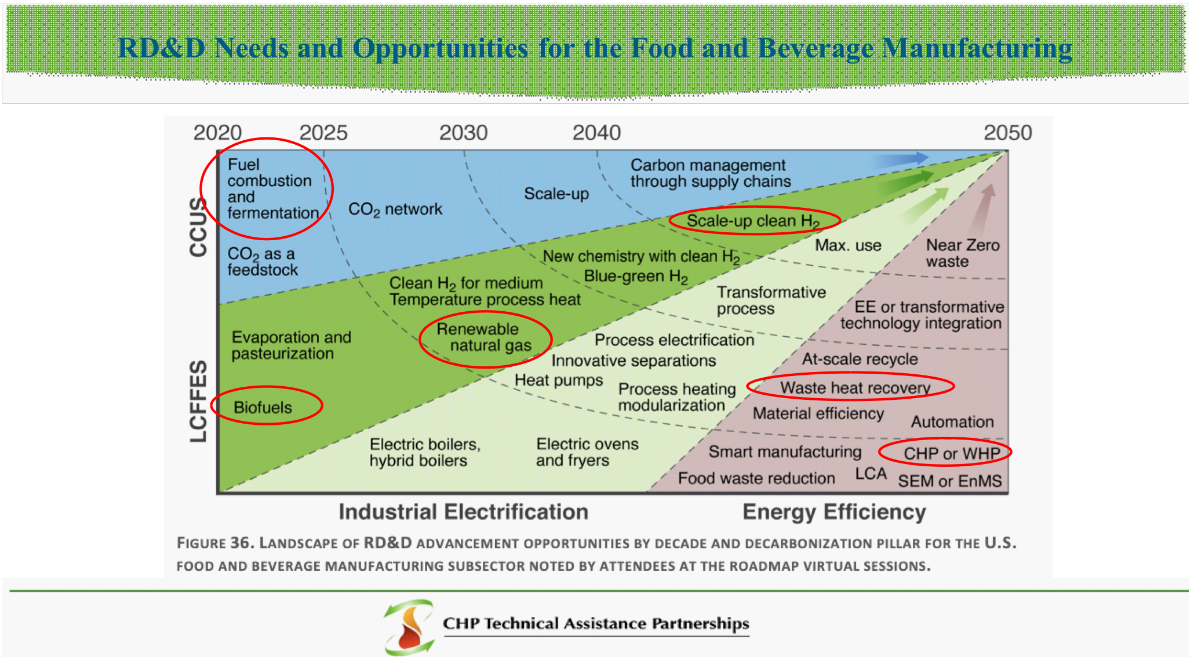

FIGURE 36. LANDSCAPE OF RD&D ADVANCEMENT OPPORTUNITIES BY DECADE AND DECARBONIZATION PILLAR FOR THE U.S. FOOD AND BEVERAGE MANUFACTURING SUBSECTOR NOTED BY ATTENDEES AT THE ROADMAP VIRTUAL SESSIONS.

RD&D Needs and Opportunities for the Chemical Industry[27]

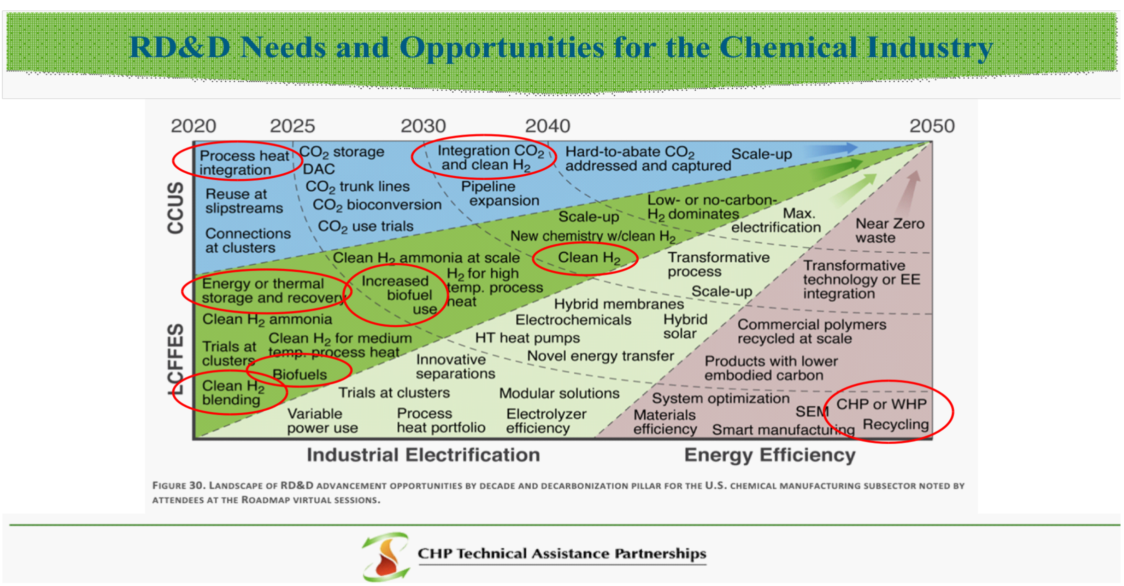

FIGURE 30. LANDSCAPE OF RD&D ADVANCEMENT OPPORTUNITIES BY DECADE AND DECARBONIZATION PILLAR FOR THE U.S. CHEMICAL MANUFACTURING SUBSECTOR NOTED BY ATTENDEES AT THE ROADMAP VIRTUAL SESSIONS.

[26] US Department of Energy, Industrial Decarbonization Roadmap, Sep. 2022, pg. 100, https://www.energy.gov/sites/default/files/2022-09/Industrial%20Decarbonization%20Roadmap.pdf
[27] US Department of Energy, Industrial Decarbonization Roadmap, Sep. 2022, pg. 82, https://www.energy.gov/sites/default/files/2022-09/Industrial%20Decarbonization%20Roadmap.pdf

CONCLUSION

The need for DEFR's is essential, it is extraordinarily large in scale, and it is **immediate.** The Final Scoping Plan states the importance of developing large amounts of dispatchable generation, which is echoed in the Power Grid Study, Pathways Study, and NYISO Grid in Transition and Climate Change Study.[28]

The Final Scoping Plan notes a need for 15 GWs to 45 GWs required for the 100 x 40 goal. NYISO identifies in numerous scenarios a need for as much 856 MWs in operation, **before 2030.** CHP has been identified within the US DOE's Industrial Decarbonization Roadmap, as a near, mid- and long-term resource which delivers energy efficiency, resiliency, and can address hard to decarbonize sectors. CHP in stand-alone applications, but more likely in district energy and microgrids, hybrid configurations and circular economy systems, can afford the State opportunities to replace higher grid marginal emissions sources with a high degree of flexibility to soon pivot to full incorporation of renewable fuels. CHP technologies are available today, saving carbon immediately rather in later years. CHP is a hedge providing a cushion against delays in building renewable generation, transmission or making essential upgrades to the distribution system. CHP buys time, for better, cheaper, faster technologies to become widely tested and deployed. Appropriately designed configured and operated CHP systems, particularly if smartly co-located for important **additional** societal concerns (food waste management, alleviate renewable pockets, stabilize critical infrastructure, conjoined with food security) can deliver, perhaps an unmatched suite of societal benefits.

Based on the above outlined arguments, the NE Chapter respectfully requests that the PSC consider CHP technology as an important tool in its decarbonization, resiliency, affordability, just transition and reliability arsenal. CHP should be part of the ultimate adoption of the New York Standards/PSL 66. Ensuring that the broadest range of solutions are presented for consideration. Provided that they are consistent with the goals and objectives of the Climate Act and the State Decarbonization Roadmap, no systems or technologies ought to be eliminate before the fact, all viable pathways should be in the arsenal of options. By adopting positions outlined above, the PSC can ensure that in developing State investment programs, we retain a **relentless focus on outcomes** rather than on any set of pre-determined approaches. The NE Chapter is grateful for this opportunity to respectfully offer these comments for your consideration.

Respectfully,

2G Energy Inc.
Alfa Laval
Capstone Green Energy

[28] New York State Climate Action Council. 2022. "New York State Climate Action Council Scoping Plan." climate.ny.gov/ScopingPlan. pg. 245, Chapter 13 Electricity.

CarbonQuest
Clarke Energy
Cogen Power Technologies
Combined Heat and Power Alliance
Dalkia Aegis
EC Power Inc.
Energy Investment Systems
Integrated Energy Concepts Engineering PC
Kraft Power / Kraft Energy Systems
Lima Company
Licata Energy & Environmental Consultants, Inc.
Martin Energy Group
Northeast Chapter of the Combined Heat and Power Alliance
Northeast-Western Energy Systems (NES-WES)
RSP Systems
Sterling Energy Group, LLC
Tecogen Inc.
The E Cubed Company, LLC
Unison Energy