**ACCELERATE DECARBONIZATION BY ASSESSING SUITABILITY OF HYDROGEN AND AMMONIA SOURCES BASED ON LIFECYCLE CARBON INTENSITY RATHER THAN “COLOR”**

1. **Our Concern and Suggestion** 
   1. We are concerned that early and substantial decarbonization opportunities will be lost, along with accompanying environmental and health benefits, by focusing on generic colors of hydrogen production pathways, rather than the objective lifecycle carbon intensity of particular ammonia/hydrogen sources.
   2. We encourage the Climate Action Council to focus less on the “color” of hydrogen production, and more on its carbon emissions lifecycle, consistent with the United States Department of Energy approach.
   3. Ammonia or hydrogen produced with fossil fuel, but with extremely low lifecycle carbon emissions, can help affordably decarbonize the New York economy this decade, accelerating the environmental and health benefits recognized in the Draft Scoping Plan. Such ammonia or hydrogen should be considered consistent with the decarbonization goals set out in the Climate Act.

* 1. In particular, the Manhattan steam system can be substantially decarbonized this decade, accelerating the climate and health benefits of decarbonization, rather than the slower “glidepath” reduction assumed in the Draft Scoping Plan through to 2050 (page 121 and footnote 158)

1. **Background - Lifecycle Carbon Intensity versus Hydrogen Production Methods/”Colors”**
   1. NYSERDA noted in its kickoff webinar *‘Hydrogen in NYS: State of the Science’* on 5/31/2022 that “blue hydrogen” includes emissions and are “deemed” to be inconsistent with the achievement of Climate Act emissions limits.[[1]](#footnote-1)[[2]](#footnote-2)
   2. However, inclusion or exclusion of hydrogen solely by color is too arbitrary, given the wide ranges of emissions within each category, and it’s unclear how green hydrogen emission assumptions such as, for example, solar panel production or hydrogen transportation and parasitic loads, are treated.
   3. Also, the “blue” emissions assumptions cross referenced in NYSERDA’s presentation and described by Sierra Club, Earth Justice, and Pembina Institute are:
      1. generic – for example, they don’t contemplate an ammonia plant utilizing local coal mine methane and coal bed methane,
      2. not current – for example, in 2022 the % capture of carbon emissions by an ammonia plant utilizing an Autothermal Reformer (ATR) plus carbon capture and sequestration - are substantially higher than assumed in NYSERDA’s presentation.

#### Instead of a color scheme, we recommend focusing on the hydrogen’s lifecycle emission profile, as utilized by the United States Department of Energy. This was described in the same NYSERDA webinar[[3]](#footnote-3) [[4]](#footnote-4)

#### By focusing on lifecycle emissions, an ammonia or hydrogen project that is prima facie “green”, but for example has a large transportation carbon footprint will be identified, and a project that is prima facie “blue”, but avoids the methane leakage and carbon capture inefficiencies assumed in the “color” chart, may be acceptable for purposes of the Climate Act.

1. <https://www.nyserda.ny.gov/-/media/Files/Researcher-and-Policymakers/2022-05-31-H2-in-NYS-SOTScience-Kickoff-Slides.pdf> slide 23 [↑](#footnote-ref-1)
2. <https://youtu.be/hPs7xBpxC18?t=3695> [↑](#footnote-ref-2)
3. <https://www.nyserda.ny.gov/-/media/Files/Researcher-and-Policymakers/2022-05-31-H2-in-NYS-SOTScience-Kickoff-Slides.pdf> slide 49 [↑](#footnote-ref-3)
4. <https://youtu.be/hPs7xBpxC18?t=7224> [↑](#footnote-ref-4)