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Russ Brauksieck
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233

RE: Revised Proposed 6 NYCRR Part 570 – Regulation of Liquefied Natural Gas Facilities

Mr. Brauksieck:

The Sabin Center for Climate Change Law (“SCCCL”)¹ submits these comments on the revised regulations proposed by the New York State Department of Environmental Conservation (“NYSDEC”, or the “Department”) regarding the siting and operation of liquefied natural gas (“LNG”) facilities.

For the purposes of these comments, SCCCL takes no position on the storage and transportation of liquefied natural gas (“LNG”) or on whether any particular permit application should be approved. Instead, SCCCL focuses on a critical issue that was not identified in NYSDEC’s proposed regulations – the potential impact of climate change on LNG storage facilities in New York State. Specifically, sea level rise, and an associated increase in flooding and storm surges, may pose a significant risk to facilities sited near the state’s coastline.

As oceans absorb heat and as glaciers and ice sheets melt, global sea levels are rising at increasing rates.² In the next several decades, storm surges and high tides will combine with sea level rise and, in some locations, land subsidence to increase flooding in many regions, threatening the communities and industries along our coastlines.³ Department and state policy support consideration of sea level rise in the review of LNG storage facility permit applications. Notably, the Department’s 2010 climate change adaptation policy directs agency staff to

¹ The Sabin Center for Climate Change Law is an academic center at Columbia Law School. SCCCL develops legal techniques to fight climate change, trains law students and lawyers in their use, and provides the public with up-to-date resources on key topics in climate law and regulation. SCCCL works closely with the scientists at Columbia University’s Earth Institute and with governmental, nongovernmental, and academic organizations. SCCCL is directed by Michael B. Gerrard, the Andrew Sabin Professor of Professional Practice at Columbia Law School. See <http://web.law.columbia.edu/climate-change>. Please contact SCCCL for assistance locating any sources.

² Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: Climate Change Impacts in the United States: The Third National Climate Assessment. U.S. Global Change Research Program, 841 pp. doi:10.7930/J0Z31WJ2 [hereinafter “National Climate Assessment”], p. 44.

³ National Climate Assessment, p. 45; Gordon, Kate, 2014: Risky Business: The Economic Risks of Climate Change in the United States. The Risky Business Project [hereinafter “Risky Business”], p. 20.

“incorporate climate change adaptation strategies” into NYSDEC operations, including rulemaking and permitting.⁴

Additionally, Governor Cuomo recently signed the “Community Risk Reduction and Resiliency Act” (“CRRA”), a landmark adaptation bill that amends certain state statutes to reflect greater awareness of and preparedness for climate change-associated risks.⁵ The Act requires state agencies to consider future physical climate risks caused by storm surges, sea level rise, or flooding in certain permitting, funding, and regulatory decisions.⁶ Notably, the CRRA amends the Smart Growth Public Infrastructure Policy Act (“Smart Growth Act”) to require state agencies to ensure that public infrastructure projects are consistent with the goal of “mitigat[ing] future physical climate risk due to sea level rise, and/or storm surges and/or flooding, based on available data predicting the likelihood of future extreme weather events, including hazard risk analysis data if applicable.”⁷ LNG storage facilities are arguably public infrastructure projects falling within the purview of the Smart Growth Act; if so, NYSDEC is legally required to assess climate change-related coastal processes when reviewing LNG facility permit applications.

CRRA requires the Department to adopt official sea level rise projections by January 1, 2016.⁸ Meanwhile, many sources provide current and credible data regarding sea level rise and its potential consequences.⁹ Using these and other sources, the Department should assess the projected range of sea level rise and storm surge throughout the life of a proposed LNG facility and determine whether permit applicants have adequately prepared for climate change-related risks. To avoid underestimating these risks, the Department should consider basing its determination on sea level rise at the high end of the projected range. Notably, the 2014 National Climate Assessment indicates that sea level rise in the Northeast United States is expected to exceed the global average of one to four feet by 2100.¹⁰ Moreover, the Department should exhibit a low tolerance for risk. Although the Department contends that “LNG is inherently no more dangerous than competing fuels,”¹¹ LNG storage facilities sited near coastlines pose particular dangers due to the potential for LNG to explode when exposed to water.¹²

⁴ NYSDEC, Climate Change and DEC Action (2010), *available at* http://www.dec.ny.gov/docs/administration_pdf/commisclimchpolicy.pdf.

⁵ 2014 Sess. Law News of N.Y. Ch. 355 (S. 6617-B).

⁶ *Id.*

⁷ *Id.*; N.Y. Envtl. Conserv. Law § 6-0107.

⁸ *Id.*; N.Y. Envtl. Conserv. Law § 3-0319.

⁹ *See e.g.*, Intergovernmental Panel on Climate Change (“IPCC”), Chapter 2.2.3 Ocean, cryosphere and sea level. In Climate Change 2014 Synthesis Report, Fifth Assessment Report, pp. SYR-22 – SYR-23, *available at* http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_LONGERREPORT.pdf; National Climate Assessment, pp. 44-45, 371-95, *available at* <http://nca2014.globalchange.gov>; Climate Central, Surging Seas: Sea Level Rise Analysis, *available at* <http://sealevel.climatecentral.org>; Risky Business: The Economic Risks of Climate Change in the United States, *available at* http://riskybusiness.org/uploads/files/RiskyBusiness_Report_WEB_09_08_14.pdf.

¹⁰ National Climate Assessment, p. 374.

¹¹ NYSDEC, State Environmental Quality Review Negative Declaration, Notice of Determination of Non-Significance (2013), *available at* http://www.dec.ny.gov/docs/remediation_hudson_pdf/part570seqrdocs.pdf (citing New York State Energy Planning Board, Report on Issues Regarding the Existing New York Liquefied Natural Gas Moratorium (1998), *available at* <http://www.nyscrda.ny.gov/Energy-Data-and-Prices-Planning-and-Policy/Energy-Prices-Data-and-Reports/EA-Reports-and-Studies/Natural-Gas-Studies.aspx>).

¹² Benintendi, R., Rega, S., A unified thermodynamic framework for LNG rapid phase transition on water. Chem. Eng. Res. Des. (2014), *available at* <http://dx.doi.org/10.1016/j.cherd.2014.07.005> (“[I]n case of spillage and contact

Further, to adequately protect new LNG facilities from future climate change impacts, the Department should consider the risks of more frequent and severe flooding. These risks are not fully reflected by static sea level rise data. Increasingly intense storm surges are a foreseeable risk on the coast of New York, and should be considered in connection with permit applications for new LNG facilities near the state's shore. Particularly relevant is the 2014 National Climate Assessment's observation that a sea level rise of two feet, without any changes in storms, would more than triple the frequency of dangerous coastal flooding throughout most of the Northeast.¹³

Finally, the design of any new LNG facility should incorporate an additional margin of safety, known as "freeboard," to account for unanticipated risk factors. The inclusion of freeboard in flood planning is intended to protect against risks that can contribute to flood heights, such as waves and the effect of development on ground water absorption.¹⁴ These risks are separate from and additional to the risks of sea level rise and storm surge, and should be evaluated as such in connection with new LNG facilities in New York.

In sum, sea level rise and increased flooding due to climate change pose a foreseeable risk to LNG storage facilities in New York State, depending on their location. The Department should consider these impacts when reviewing individual permit applications to adequately protect LNG facilities from future climate change impacts and to ensure the safety of the public.

Thank you for the opportunity to submit comments on the revised proposed regulation of LNG facilities in New York State. Please feel free to contact SCCCL with any questions.

Sincerely,

Jennifer Klein

Enclosures:

IPCC, Climate Change 2014 Synthesis Report, *Ocean, cryosphere and sea level*
National Climate Assessment, *Northeast*
NYSDEC Adaptation Policy

with water [of LNG]...consequences can be catastrophic.... This phenomenon, known as rapid phase transition (RPT), is a potentially explosive vaporisation of LNG in case of a sudden contact of this mainly with water, generally seawater.); Nédelka, D., Sauter, V., Goanvic, J., & Ohba, R. (2003). Last developments in Rapid Phase Transition knowledge and modeling techniques. Offshore Technology Conference, *available at* <http://dx.doi.org/10.4043/15228-MS> ("RPT phenomenon is part of the safety context of LNG facilities and must be taken into account from the design stage.").

¹³ National Climate Assessment, p. 374.

¹⁴ See New York City, N.Y., Rules, Tit. 1, § 3606-04 (citing FEMA's definition of freeboard, 44 C.F.R. § 59.1); American Society of Civil Engineers, Highlights of ASCE 24-05 Flood Resistant Design and Construction (2010), *available at* <http://www.fema.gov/media-library/assets/documents/14983>; FEMA Hurricane Sandy Recovery Advisories RA2: Reducing Flood Effects in Critical Facilities (April 2013) and RA5: Designing For Flood Levels above the BFE After Hurricane Sandy (April 2013), *available at* <http://www.fema.gov/media-library/assets/documents/30966>.