

# ENVIRONMENTAL ENERGY ALLIANCE OF NEW YORK

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December 22, 2016

Submitted Via E-Mail to [climatechange@dec.ny.gov](mailto:climatechange@dec.ny.gov)

## Re: 6 NYCRR Part 490 Projected Sea-Level Rise

Dear Sirs,

I am pleased to write on behalf of the Environmental Energy Alliance of New York, LLC (the Alliance; see list of member company highlighted below on this page) to provide these comments on proposed Part 490, "Projected Sea-Level Rise". Alliance members own and operate electric generating and transmission and distribution facilities located throughout New York State and, in some instances, across the nation and the globe. The operations of Alliance members contribute to the reliability of the State's electric grid and to the economic well-being of New York State.

The Department of Environmental Conservation (DEC) is required by the Community Risk and Resiliency Act (CRRRA) to adopt regulations establishing science-based state sea-level rise (SLR) projections by January 1, 2016 and to update those projections at least every five years. Part 490 "establishes science-based projections of sea-level rise for New York State's tidal coast." It defines four time intervals, five projection categories and then lists projections for sea-level rise for three specified geographic regions relative to the baseline level within those classifications.

The Alliance agrees with the changes to the definitions of the high and low projections in the revised regulation but it is not clear how these numbers will be used so we remain concerned. Because there is so much uncertainty involved with these projections, the Alliance recommends that CRRRA use the Part 490 projections in a "pledge and review" approach as described below.

*Central Hudson Gas & Electric Corporation  
Consolidated Edison Company of New York, Inc.  
CCI Roseton  
Dynergy Power LLC.  
Long Island Power Authority  
National Grid  
New York Power Authority*

*New York State Electric & Gas Corporation  
NRG Energy, Inc.  
Orange & Rockland Utilities, Inc.  
Rochester Gas & Electric Corporation  
Selkirk Cogen  
TransCanada  
US Power Generating Co.*

Ultimately we simply don't know what is going to happen. Because there is uncertainty regarding just how much more SLR is expected, the Alliance recommends that implementation of the CRRA adapt the "pledge and review" approach suggested by Otto et al.<sup>1</sup> and McKittrick<sup>2</sup> for greenhouse gas mitigation policies to meet the requirements of the Community Risk and Resiliency Act (CRRA). The fact that IPCC projections are smaller than the highest ClimAID projection illustrates that there are legitimate differences of opinion about the timing and magnitude of SLR over the CRRA planning horizon. The pledge and review approach avoids having to resolve the scientific projection in order to establish policy approaches to accommodate sea level rise. Instead, the "pledge and review" paradigm establishes policy requirements subject to observable criteria.

Otto et al. argue that climate change mitigation policies should be 'anti-fragile' with respect to scientific uncertainty. Anti-fragile means that "uncertainty and changes in scientific knowledge make the policy more successful by allowing for trial and error at low societal costs". Note that this proposal is similar to McKittrick's proposal in which the trial and error response is dictated by the observed temperature. Otto et al. state that a "key pre-requisite for an anti-fragile climate policy is an index not beholden to high scientific uncertainty". In McKittrick's case the index is temperature. Otto et al. argue that index is flawed because a "large volcano or an upward fluctuation in the Pacific Decadal Oscillation could depress or inflate carbon prices for a decade or more" which would adversely affect long-term investments necessary for mitigation. They propose an index of "warming attributable to human influences" instead.

The Alliance recommends that CRRA incorporate the Part 490 projections with the pledge and review methodology for SLR. There are similarities between climate change mitigation policy and sea-level adaptation policy such as CRRA. However, in the case of SLR, the lower bound on the policy relevant parameter is more constrained. Historical trends and projection methodologies agree that one foot of sea-level rise is very likely by 2100. In addition, Superstorm Sandy provides a recent benchmark of storm surge. Therefore, the minimum planning threshold (one foot of rise plus the Sandy storm surge) for adaptation is not controversial.

In order to provide decision makers with a full range of potential impacts, DEC wants to provide decision makers specified probability exceedance levels of SLR. During the stakeholder process the uncertainty of the SLR projections was recognized and discussed, particularly with respect to the worst case expected rise.

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<sup>1</sup> Otto, F. E. L., Frame, D. J., Otto, A. and Allen, M.R., 2015: Embracing uncertainty in climate change policy, *Nature Clim. Change*, 10.1038/nclimate2716. Published on line at: <http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate2716.html>

<sup>2</sup> McKittrick, R., 2011: A simple state-contingent pricing policy for complex intertemporal externalities, Paper presented August 21 2012 to the Seminar on Planetary Emergencies, World Federation of Scientists, Erice Italy. This paper is a reprint chapter in the *Handbook on Energy and Climate Change*, Roger Fouquet, ed., Cheltenham: Edward Elgar, 2012.

However, there was emphasis on the potential for a six-foot rise within the century both during the process and in the Regulatory Impact Statement. The major question for infrastructure developers is: how does the State plan to incorporate the six-foot SLR in their ultimate requirements? If the pledge and review process is incorporated then those projections will only be incorporated into the planning requirements if review determines they are necessary.

In the context of this rule and the complexity of decision making that entails significant uncertainty, the ultimate policy response must be: how much resilience can you afford? One approach would be to look at threshold vulnerabilities, i.e. how much sea level rise and storm surge size would cause a specific problem, and then decide how much resilience you can afford. In this pledge and review approach a specific sea-level rise projection level based on an affordability criterion or some other process will be chosen (pledged) and every five years the tracking index will be reviewed to see whether an adjustment has to be made.

There are a couple of tasks to implement this pledge and review approach. The first task is to pick an index. In this case a good parameter to use would be the observed sea-level rise itself or, probably better, sea-level rise acceleration. The second task is to define recommended policy response levels. The specific recommendation for a policy response level is not part of this set of comments because policy responses are not part of the proposed Part 490. The Alliance understands that policy guidelines will be outlined in a subsequent rulemaking, and the Alliance expects to detail further the value of the pledge and review methodology at that time as well.

The following illustrates how this would work. Table 1 lists Battery and Montauk five-year mean sea level and calculated rate of change between periods. The rate of change differences are highlighted for consistency with projected SLR of two, three, four, five and six feet of sea level rise by 2100. For example, in order to get two feet of SLR in 100 years the difference between successive five year periods has to be greater than 1.2 inches. In the table those differences are highlighted with a pale brown.

In this approach the policy guidelines would be based on observations rather than projections. Any actions would be pledged based on these data. For example, assume that the primary SLR planning value or pledge is set at four feet. Because the observed rates are currently consistent with sea-level rise less than four feet, any mandated policy requirements would be based on a limit of no more than four feet. As proposed, Part 490 sets forth a five-year review cycle so future changes in sea-level would be calculated with that cycle and any needed policy adjustments would take place on the same cycle. If the observed changes were consistent with higher levels (e.g., rises greater than four feet), then the rule would state that that the planning value would automatically shift upwards to be consistent with the higher value. If the sea level rise projections became consistently lower, then the planning value would automatically shift down but no lower than the one foot minimum threshold.

**Table 1:** Battery and Montauk five-year mean sea level and differences highlighted for consistency with projected sea-level rise of two, three, four, five and six feet of sea level rise in 100 years.

5-Year Period	Battery		5-Year Period	Montauk	
	Mean Sea Level (Feet)	Change (Inches)		Mean Sea Level (Feet)	Change (Inches)
1897 1901	1.75	1.239			
1902 1906	1.75	-0.009			
1907 1911	1.76	0.119			
1912 1916	1.75	-0.099			
1917 1921	1.94	2.217			
1922 1926	1.85	-1.053			
1927 1931	1.84	-0.109			
1932 1936	1.94	1.248			
1937 1941	2.07	1.530			
1942 1946	2.15	0.925			
1947 1951	2.18	0.316	1947 1951	0.87	
1952 1956	2.25	0.916	1952 1956	0.95	0.999
1957 1961	2.27	0.252	1957 1961	1.04	1.124
1962 1966	2.29	0.195	1962 1966	0.92	-1.514
1967 1971	2.39	1.242	1967 1971	1.06	1.676
1972 1976	2.40	0.118	1972 1976	1.09	0.400
1977 1981	2.37	-0.409	1977 1981	1.02	-0.848
1982 1986	2.49	1.473	1982 1986	1.20	2.130
1987 1991	2.45	-0.458	1987 1991	1.14	-0.739
1992 1996	2.60	1.741	1992 1996	1.30	1.983
1997 2001	2.68	1.041	1997 2001	1.35	0.602
2002 2006	2.68	-0.082	2002 2006	1.44	1.042
2007 2011	2.83	1.806	2007 2011	1.60	1.924
2012 2016	2.81	-0.188	2012 2016	1.54	-0.702

Key to rates consistent with sea level rise in 100 years of:

Decrease	2 feet	3 feet	4 feet	5 feet	6 feet
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In summary, the Alliance supports a more flexible approach to determining sea level rise – a value that is overwhelmed by uncertainty, so much so that it would be imprudent for New York State to make decisions in this decade based on a solitary number that all parties agree is a “very unlikely” value. Rather, the State should recognize that sea level rise is highly likely and should construct a recurring regulatory mechanism that will allow prudent decision making on a going-forward basis.

Alliance members would be pleased to discuss this approach in a face-to-face meeting or teleconference if it would support the Department’s rulemaking efforts.

Sincerely,

A handwritten signature in cursive script that reads "Roger Caiazza".

Roger Caiazza  
Director