# Meeting Minutes

**New York State Reliability Council – Extreme Weather Working Group (EWWG)**
**Meeting # 4 – April 11, 2023**
**Zoom**

1. **Draft Meeting Minutes for Meeting # 3- 2/27/2023**
   - Meeting minutes were approved with no changes

2. **NY Weather Extremes -  Roger C/Judith Curry**
   - Analysis performed to explore 2 concerns:
     - 5 year period is not long enough for climate study-5 year period does not capture most extreme temperature events
     - Granularity of climate data is not fine enough to capture blocking patterns that cause hot and cold extremes
   - Up to 400 year of weather data is needed to fully capture all possible climate events according to some studies
   - Natural variability in cold nights "swamps out" slow creep of global warming as evidenced in annual observed number of very cold nights
   - Stakeholder question: How much research exists in levels of humidity/dew points amidst all of the focus on temperatures?
     - Peak temperatures typically occur during dry period, moisture in air and ground somewhat preclude high temperatures
     - Relative humidity is relatively constant, absolute humidity creeps slowly with atmospheric warming
   - NYISO commented that they incorporate 50 year of data into load modeling, builds a distribution of load events
   - It is important to account for duration of heat and cold waves in historical data
     - Heat waves of 5-6 days are relatively common in observed history
     - Cold waves of 3-4 day are also relatively common
     - Climate models may miss the duration of heat and cold waves
   - Climate data plus adder ("spike") for atmospheric warming may serve as good climate stress test
   - HRRR may be very good source for looking at wind in general (also wind droughts)
     - Model also looks some distance offshore
   - Stakeholder Question: Is year-to-year variation constant or changing year to year?
     - Decadal variability is present in all of this (year to year is within envelope of variability)
   - Stakeholder Question: Is there any leading indicator that we are moving from one envelope to another
     - Shift to cold phase of Atlantic multi decadal oscillation, although predicting this is extremely difficult

3. **NYISO Offshore Wind Data 2000-2021 from ICAP WG meeting -  Discussion and  Next steps  - Curt Dahl / All**

- Further discussion of example 3.5-4 day wind lull identified in NYISO provided OSW data across 7 wind farm locations (5.4.1.pdf)
- Presentation of Roger's analysis of frequency of wind lull events with 24, 48, and 72 hour duration
  - Average of 30 wind lull events per year where net capacity factor is less than 20% for all hours in 24 hour period-Average capacity factor for these periods would be significantly lower than 20%
  - Lulls in historical data disproportionately coincide with current peak load periods
- Stakeholder discussion on working group goal/clarification of purpose
  - Need to identify what sort of wind and solar shapes do we need to be modeling for our studies to assess need for other resources given variability of wind and solar. I.E. full range of high/low loads, high/low OSW, high/low PV combinations are modeled as appropriate
- Stakeholder discussion on possible need for ramping analysis
  - Hourly data may be useful for giving general idea of ramping needs, but finer resolution is likely needed to do ramping type analysis
- Review of Summary of NYSRC Preliminary Findings on NYISO OSW data
  - Key point is that further study needs to occur to identify correlations among decarbonized resources

4. **Other Business**
- Focus for next month's meeting should be next steps
  - Think about and prepare for discussion on potential for low hanging fruit of reliability rule or modeling changes

5. **Action Items**
- Daniel updated that he is still working on review of NYISO OSW data
- Think about NY weather extremes presentation for next meeting-See if we can incorporate any of this into our work
- Provide feedback/comments on Summary of NYSRC Preliminary Findings on OSW data
- Prepare for group discussion of next steps (modeling/reliability rules)
- Roger Clayton breaking 21 years data into 5 year slices and comparing representativeness of slices