Pragmatic Environmentalist of New York Summary Update June 2, 2025 – June 15, 2025

This is a summary update of posts at Pragmatic Environmentalist of New York over the last two weeks. I have been writing about the pragmatic balance of the risks and benefits of environmental initiatives in New York since 2017 with a recent emphasis on New York's Climate Leadership & Community Protection Act (Climate Act). This summary describes each of my recent posts. If you do not want to be on this mailing list, then let me know. A pdf copy of the following information and previous summaries are also available. The opinions expressed in these articles do not reflect the position of any of my previous employers or any other organization I have been associated with, these comments are mine alone.

New York Cap and Invest Update

The first regulation associated with the New York Cap and Invest (NYCI) Program is currently out for comment. The regulation establishes mandatory greenhouse gas (GHG) emission reporting requirements.

Market-based emissions reduction programs like cap and invest are touted as a solution that can kill two birds with one stone: "It simultaneously puts a limit on the tons of pollution companies can emit — 'cap' — while making them pay for each ton, funding projects to help move the state away from polluting energy sources — 'invest.'" As is the case with all aspects of the Climate Act, this approach is not simple and is riddled with complications that make it unlikely that it will work as advocates expect. I have summarized my concerns on my Carbon Pricing Initiatives page.

To implement the carbon pricing initiative, the Department of Environmental Conservation (DEC) has proposed three regulations: mandatory GHG emissions reporting, a cap-and-invest rule that sets the cap or limit on emissions, and an auction rulemaking that establishes how the allowances will be allocated. Climate activists have been campaigning to get all the rules out, but the Hochul Administration has slowed the process down this year. Rules covering all aspects of the economy are very complex and it is amazing that DEC has managed to get this rule out. However, the rules out shows signs of inadequate balance between stringency and practicality.

My primary issue with the proposal is that contrary to other similar rules, the thresholds for reporting emissions are extraordinarily low. Low as in there are four categories of fuel suppliers that "must report emissions" if they supply "any quantity" of fuels. It gets worse. Fuel suppliers that are categorized as large emission sources have additional reporting requirements that include a mandate to hire a third party to verify emissions. The threshold for a heating oil fuel supplier is also very low and will affect small businesses that do not have relevant experience, time or budgets to absorb those reporting costs.

I concentrated on heating oil distributors in the article. The DEC concern is that the building sector is the largest emissions sector, emitting 114 million metric tons (31% of total emissions) in 2022. The heating oil large emissions source threshold is only 100,000 gallons which is equivalent to only 1,351 tons of CO2 or 0.001% of total sector emissions.

The draft rules impose an unnecessary and expensive burden on retail fuel suppliers because the applicability thresholds are so low. This challenge to small fuel supply businesses can be addressed by

setting the Part 253 emissions reporting and the allowance compliance rule threshold at the EPA reporting threshold of 25,000 metric tons. It is more efficient and appropriate to make the primary fuel terminal suppliers who provide oil to the small distributors responsible for reporting emissions and complying with the NYCI allowance regulation. The only obligation for small distributors should be reporting annual fuel sales.

I would appreciate it if readers would submit a comment to the online DEC portal. After filling out your name, location, and other information there is a spot to insert a comment. Please just copy the preceding paragraph in that location. Tell them you are not a robot and submit. Thank you.

NYISO 2025 Power Trends Report

Recently the New York Independent System Operator (NYISO) released Power Trends 2025. This is the NYISO's annual analysis of factors influencing New York State's power grid and wholesale electricity markets. The report described several key points.

The amount of power capacity available relative to the maximum load expected (the reliability margin) is shrinking:

> Generator deactivations are outpacing new supply additions. Electrification programs and new large-load customers associated with economic development initiatives are pushing projected demand higher. Together, these forces are also narrowing reliability margins across New York and increasing the risk of future reliability needs.

The Hochul Administration has responded to the climate activists by encouraging existing fossil plants to retire and discouraging the development of new fossil-fired resources. The problem is that we don not have in-kind replacements available for those resources. Power Trends notes that replacing old plants as advantages:

> Repowering aging power plants can lower emissions, meet rising consumer demand, and provide reliability benefits to the grid that are needed to integrate additional clean energy resources.

Another highlighted issue is that reliability margins will be affected by new load growth: "New high-tech, AI and data center projects are having an impact on future electric demand and load growth". The Report notes that 2,567 MW of new load capacity is needed by 2035 and the document notes that other projects could add around 1,900 MW of capacity after that. I am disappointed that the Report did not mention that these new load centers require constant energy and clean power that is free from electrical noise, surges, voltage spikes, and drops which exacerbates the challenge of relying on renewable energy.

My conclusion for this report is the same as my conclusion in my article on last year's report. The Power Trends 2025 report provides an excellent overview of New York State's power grid and wholesale electricity markets. Unfortunately, NYISO does not consolidate all the warning signs about Climate Act implementation, nor does it call out state policies that are exacerbating problems.

2024 New York State Wind Resources

I recently published a status update on New York State wind and solar capacity factors. Peter Carney alerted me to NYISO hourly wind and wind curtailment data for 2024. I summarized data that shows additional concerns about the transition to an electric system that relies on weather-dependent resources.

I included the following table that summarizes the data. Curtailment refers to the "deliberate reduction of electricity output from wind turbines" because the power is not needed. The production data is the amount of electricity produced every hour. On average wind turbines in New York only provide 24% of the total available capacity each hour. More important are the percentiles. At the median or 50th percentile half of the total hours in the year only produced 18% of the capacity available. If you assume that less than 10% of production is the threshold for appreciable support to the grid, then wind was not producing meaningful power 30% of the time. I also calculated that there was a period of 107 consecutive hours when the wind production was less than 10% of the total available capacity. Curtailments do not appear to be an issue in New York yet.

2024 NYISO Hourly Wind Production Summary for the Entire New York Control Area

		Production (MW)	Curtailment (MW)	Production % of Total	Curtailment % of Total
	Total	6,095,928	66,560	24%	
	Average	694	8	24%	0%
	Minimum	0	0	0%	0%
	Maximum	2,309	394	77%	14%
Percentiles	99%	2,058	165	71%	6%
	95%	1,811	57	63%	2%
	90%	1,589	8	55%	0%
	85%	1,403	0	48%	0%
	80%	1,215	0	42%	0%
	75%	1,053	0	36%	0%
	70%	930	0	32%	0%
	65%	803	0	28%	0%
	60%	696	0	24%	0%
	55%	611	0	21%	0%
	50%	530	0	18%	0%
	45%	463	0	16%	0%
	40%	401	0	14%	0%
	35%	340	0	12%	0%
	30%	286	0	10%	0%
	25%	233	0	8%	0%
	20%	186	0	6%	0%
	15%	137	0	5%	0%
	10%	94	0	3%	0%
	5%	47	0	2%	0%
	1%	3	0	0%	0%

These production results have important ramifications for resource planning. The existing wind facilities are spread across the state and wind production is highly correlated. Half the time the total generation capacity is 18% of the total. This means that improving energy production substantially, requires a lot more generation capacity. Comparison of these results with 2021 results illustrates what I mean. In 2021 the production at the 25th percentile was 151.6 MW and in 2024 the production at the 25th percentile was 233 MW an increase of 81 MW. However, between 2021 and 2024 wind turbine capacity

increased by 667 MW. The investment of 667 MW of wind capacity only increased production 81 MW at the 25th percentile.

Cheap Solar and Wind Energy Fallacy

The solar and wind mandates in the Climate Act were no doubt heavily influenced by the idea that renewable energy is cheap. This post describes three articles by Planning Engineer (Russ Schussler) that eviscerate that argument.

The first article explains that "just because a resource is cheaper most of the time that does not mean that it reduces overall system costs". Schussler explains that the fact that rare but extreme events drive the costs of the electric system. He notes:

> Peak demand periods in power systems drive costs that overshadow renewables' savings during easy times. Electricity demand fluctuates, and supplying power is far more challenging—and expensive—during certain periods.

The bottom line is that if you consider the total costs to provide power over every hour of the year, then the added costs for the extreme situations increase total costs so much that solar and wind are not the "cheapest".

In his second post, Schussler describes a similar problem with residential solar. He states that:

> Residential solar follows a similar pattern: it seems affordable for homeowners but raises system costs through rate structures that over-incentivize adoption. Generous subsidies, like retail-rate net metering, drive excessive solar growth, risking grid stability and shifting costs to non-solar customers that are often less affluent.

Not surprisingly, the greater the incentive offered the more solar panels installed. However, he also explains that there are significant costs to the system:

- **Lost Revenue**: Utilities need steady charges to cover fixed costs (grid lines, backup power). Solar homeowners avoid these during low-demand periods, reducing revenue.
- **Overpaid Purchases**: High credits for low-value power strain utility budgets.
- **Fat Tail Costs**: Peak periods drive high costs (peaking plants and transmission and distribution expansion). Non-solar customers face 1-2% rate hikes in high-solar areas, per National Renewable Energy Laboratory studies.

In the third post Schussler describes why power markets that can optimize resource allocation in many sectors, "struggle to deliver affordability and reliability in electricity systems dominated by intermittent renewables." He points to the best evidence that solar and wind do not reduce costs: "If you look globally there is an unmistakable pattern: regions with high renewable penetration often face higher electricity prices."

I cannot provide a better closing than just quoting Schussler's conclusion:

> For now, the takeaway is this: power markets amplify the cost challenges of renewables by prioritizing short-term gains over long-term reliability. A sustainable energy system must prioritize reliability and affordability through regulated planning, market reforms, or other tailored approaches addressing power market limitations. Policymakers must prioritize reliability over short-term market gains for a resilient, affordable energy future.